Supply Chain Transparency of Certified and Conventional Businesses

A case of Coffee Industry in Colombia

Specialization in International Marketing, 15 credits

Halmstad
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Acknowledgements

Winston Churchill once said that success consists of going from failure to failure without loss of enthusiasm. The outcome of this thesis is based on several years of academic and professional experience of which are characterized by hard work, success, but also failure. The years and the experiences they have brought us made us who we are and have given us the opportunity to contribute to future research. An opportunity that shows the importance between theory and reality, but also the understanding of how research has contributed to our personal growth. This opportunity gave us a newfound perspective on the world and its citizens, and the importance of knowledge as the first step for change and creating a better world for our future generations. We will always remember this era of our lives, the new knowledge that we gained, the new friends that we made and the new experiences that we obtained. Though first and foremost, we will always remember the insight that this thesis process gave us - that the more you know, the more you realize how much you do not know, and vice versa. This thesis process would not have been possible without the help from others. We would like to give our sincerest appreciation and thankfulness to our contact persons on the field, Rene Morales, Carlos Andres Morales and Heidi Manninen, thank you all for helping us in providing additional contacts. Moreover, we would like to thank the participants of this study, this thesis would not be possible without all the kindness and information that you shared with us. We would also want to give our sincere estimation to our Supervisor Mr. Gabriel Awuah for honest and constructive feedback, and for his guidelines during this process. The time and help given to us has made this work possible, thank you for that. Our deepest thanks go to SIDA for giving us the chance and possibility for conducting this Minor Field Study. Finally, we would like to give a special thanks to our friends and family for always believing in us and for all their constant patience and support.

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Abstract

Companies including their stakeholders, investors and nongovernmental organizations have an increasing interest regarding the information about the impact of their products in terms of who, how and where the products were produced (Kashmanian, 2017). A qualitative field study including interviews and observations was conducted in order to carry out the comparison of Supply Chain Transparency (SCT) between certified and conventional businesses. In fact, it argued that these two type of businesses differ greatly from each other when it comes to the safety and quality of the product (Manning & Baines, 2004), price premiums (Lakhal et al., 2008; Jena et al., 2012), increased environmental (Ibanez & Blackman, 2016; Burivalova et al., 2016) as well as social benefits (Milder et al., 2015; Stranieri, Cavaliere & Banterle, 2017). The comparison of certified and conventional businesses was carried out as a case study in the coffee industry in Colombia, where it is common to have both these type of businesses. Empirical data of three certified businesses was compared to five conventional ones, which is supported by additional interviews. This field study belongs to Minor Field Studies and is supported by a scholarship from Swedish International Development Cooperation Agency (SIDA). Conceptual framework was created for this thesis and it provides new theoretical insights by presenting SCT variables used for conducting a comparison between certified and conventional businesses. The findings of the study suggest that SCT does not exist in the supply chains in the coffee industry in Colombia and by utilizing the conceptual model for analysing the empirical data, this thesis contributes to the academic literature by creating a generally applicable conceptual model of SCT variables, and shows the interrelation between traceability and visibility in supply chains.

Keywords: Supply chain transparency, certified businesses, conventional businesses, coffee industry, Colombia
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Abbreviations
SCT Supply chain transparency
SIDA Swedish International Development Agency
NGO Non governmental organizations
1. Introduction

1.1. Background

Companies including their stakeholders, investors and nongovernmental organizations have an increasing interest in obtaining more information regarding the origin of the materials used for their products including who, how and where the product was produced regarding the information about product’s sustainability and environmental impacts (Kashmanian, 2017). Today’s business environment is more globalized, complex, turbulent and competitive than before (Dyer & Ha-Brookshire, 2008; Kashmanian, 2017), and supply chains of several companies encompass many countries worldwide and the consideration towards the implications that supply chains might have, such as human rights and food safety, is great among people (Aaronson & Wham, 2016). As the negative effects of economic globalization have become more recognized the so called responsible trade has gained more visibility as an answer to these issues, especially in developing countries (Broad, 2002; Curtis, 2004). Having a transparent supply chain has therefore become more important for businesses as transparency allows them not only to improve collaboration and communication across its trading partners, but also to build trust with their consumers (Zhu, Song, Hazen, Lee & Cegielski, 2018; Schug, 2017). In addition, Faisal (2015) argues that transparency should have higher importance as an area of research as it has a great impact on consumers.

Supply chains and transparency have been researched more separately, but only little is known about SCT. The current theoretical frameworks conducted for existing research regarding SCT is often based on reports from organizations, such as UN, WWF, Greenpeace, Rainforest Alliance. Besides that, real life company cases are often utilized. Several conceptual studies have analysed SCT, but a few empirical ones have examined companies and their endeavour to be transparent in practice (Egels-Zandén et al., 2015). For example, Bastian and Zentes (2013) have investigated the transparency in the agri-food supply chain of some of the largest companies in Germany, Austria and Switzerland Zandén, while Egels-Zandén and Hansson (2015) investigated the supply chain transparency as a consumer or corporate tool of the apparel company Nudie Jeans Co. Moreover, scholars such as Zhu, Song, Hazen, Lee and Cegielski (2018) researched on how supply chain analytics enables operational SCT. The current SCT literature puts emphasis mostly on the environmental and legal aspects of SCT around food, clothing and technology industries. It is therefore clear that the current academic literature needs complementary theory and is lacking a clear definition of SCT. Moreover, existing literature on certified businesses suggests that they differ greatly from conventional businesses. For clarifying the differences, the main advantages with obtaining a certification are safety and quality of products (Manning & Baines, 2004), price premiums (Lakhal et al., 2008; Jena et al., 2012), increased environmental benefits (Ibanez & Blackman, 2016; Burivalova et al., 2016) and social benefits (Milder et al., 2015; Stranieri, Cavaliere & Banterle, 2017). The interest towards labelled and certified products has grown to significant levels globally even if certified products
were first introduced only on niche markets with few producer and consumer countries (Mol & Oosterveer, 2015). Certified and conventional businesses have only been compared to each other empirically few times and the comparison is concentrated on the areas of agriculture and forest industry. Mol and Oosterveer (2015) suggest that certifications are seen as a way to show traceability of the products, verify the sustainability claims and overall transparency. Therefore, certifications can be seen as a practical method to work on the transparency of products by providing a certification that serves as a proof and an acknowledgement of the company’s dedication to sustainability.

It is known that supply chains consist of networks, all the way from raw material suppliers to different members in the supply chain until the product reaches its’ end user following the principles of supply and demand (Frankel et al., 2008; Aaronson & Wham, 2016). Thus, the information concerning products origin can only be found by looking at the supply chain. This information, however, might not always be available for end- customers or other stakeholders. The complex environment around global supply chain operates under different laws, regulations as well as institutions, which eventually make the blockchain (digital ledger) based solutions vulnerable and challenging to participate with, especially from the view of developing and less developed nations (Kshetri, 2018). The participation of all the members in the supply chain is vital for SCT, which is often defined as the disclosure of information regarding sustainability of the suppliers (Cramer, 2008). According to Egels-Zandén, Hulthén and Wulff (2015), transparency is not a well researched phenomena and it has become more central to, for example, corporate sustainability. In practise, this information could be presented in the form of sustainability certifications or reports (Bartley, 2007; Hahn & Kühnen, 2013). According to Doorey (2011), it is notable that transparency in supply chains is not an extremely old phenomena as, for example the first factory started with factory transparency during the 1990’s, when a private movement that pressured corporations to disclose the identity of their global supplier factories emerged. These activists thought that disclosure in time would improve labour practices (Doorey, 2011). SCT have become a central issue as being transparent regarding the suppliers sustainability conditions, as an example, is a part of this phenomena and its requirements have gone beyond corporate boundaries and comprise whole supply chains (Egels-Zandén et al., 2015). Corporations that embrace SCT improve their firms legitimacy, and nongovernmental organizations (NGOs) and consumers are requesting more transparency from companies. Not only the lack of technology for transferring information forward in the supply chain influence transparency, but the actors in the supply chain might not have an interest or will to let consumers or competitors, for instance, gather information about the product’s origin in different stages in the supply chain (Kshetri, 2018). Despite the arising demand of transparency in the supply chain, Kashmanian (2017) explains that because of the dispersed and complexity of supply chains, building more transparency is becoming more challenging. Kashmanian also (2017) states that several reports have connected the importance of building more transparent supply chains to companies that have become more climate conscious. SCT can therefore be
seen applicable for companies that are interested in developing their business towards sustainability since complete transparency is becoming a standard for responsible global companies (Kashmanian, 2017). Moreover, as not only the end-consumers but also other stakeholders globally are demanding more precise information about the origin of the product, the importance of supply chain transparency cannot be left aside.

1.2. Problem

As stated above, the demand towards SCT is increasing and the members in the supply chain have an interest in knowing how the product is made, where it is made and by whom. There is also an interest in information regarding a product's sustainability and environmental impact. The comparison between certified and conventional businesses is found to be important because they have been compared to each other empirically a handful of times and most importantly, never regarding SCT. Previous academic research shows that these two businesses differ greatly from each other and certified businesses, as stated above, are argued to obtain benefits that conventional businesses do not have. Therefore, it would be interesting to find out how SCT differs between certified and conventional businesses due to their aforementioned differences and because of the growing interest in SCT. This research aims to provide academically valuable knowledge concerning SCT.

1.3. Purpose

The focus of this study is on examining SCT by comparing certified and conventional businesses and thus contributing to the existing academic literature by providing knowledge for understanding these two different types of businesses and SCT. The purpose derives from the non-existence of the latter comparison and lack of academic literature regarding SCT of certified and conventional businesses.

The following research question is presented to fulfill the purpose of this study:

RQ: How SCT differs between certified and conventional businesses?

1.4. Delimitations

This study focuses on investigating the supply chain transparency by comparing certified and conventional businesses. The field study conducted for this research concentrates on the coffee industry and the interviews include stakeholders from different coffee supply chains. It should also be noted that the study is carried out in the coffee regions of Cundinamarca, Antioquia and Huila in Colombia, and therefore other coffee regions and countries producing coffee as well as their supply chains are excluded from this research. The reader should bear in mind that raw material suppliers are the ones primarily interviewed and in concentration of this study.
1.5. Thesis structure

The remaining part of the thesis is organised as follows. After the introduction, the literature review is presented. The following section presents conceptual framework and conceptual model. Methodology and the results from the empirical data are presented and then analyzed. Lastly, the conclusions of the study are presented including managerial implications and future research.

Figure 1: Thesis structure
2. Literature review

The following literature review is created to present the literature and definitions regarding SCT and provide theoretical insights into SCT of certified and conventional businesses. First, SCT literature is presented separately following the literature providing insights to the comparison of certified and conventional businesses. The findings of the literature review are further used for creating a conceptual framework of this thesis.

2.1. Supply chain transparency

The previous academic research of SCT concentrates on the areas of engineering, textile and production, business process, legal, human rights, information and computer management and attempts to identify barriers to SCT as well as investigates ways to improve it. The spectrum and potential of SCT research could be much more and the interests of scholars have concentrated on the reasons behind the lack of SCT and/or how to create more transparency to supply chains. Faisal (2015) argues that transparency should have higher importance as an area of research because it has a great impact on consumers. Having a transparent supply chain has therefore become more important for businesses because transparency allows them to not only improve collaboration and communication across its trading partners, but also to build trust with their consumers (Zhu, Song, Hazen, Lee & Cegielski, 2018; Schug, 2017). External stakeholders are the ones lacking background details about the products details which are mostly open only to the internal users of the knowledge about products (Tapscott & Ticoll, 2003). According to Martinez and Crowther (2008), transparency is a way to give power to the stakeholders of a company by acquiring information. Transparency therefore creates a balance between different actors when all stakeholders have access to information about the products for evaluating them (Chapman, 1995). Scholars, such as Burchell and Cook (2006), also state that businesses are facing a demand from their consumers regarding more detailed information about their business activities and their environmental and social impacts. Singh, de los Salones Sanchez and del Bosque (2008) support this by proposing that a strong need for transparency between businesses and consumer that concern sustainable business practices is needed. Their study shows that consumers are interested in obtaining information concerning the origin or manufacturing processes of a company product. Singh, de los Salones Sanchez and del Bosque (2008) further conclude that it is beneficial for businesses to have a continual communication concerning their product production due to consumer satisfaction when it comes to knowledge requests.

Many scholars, such as Wagner and Svensson (2010) and Kashmanian (2017) amongst others, utilize different reports and websites of organizations, such as UN and Greenpeace, or organizations providing certifications, such as Fair Trade and Rainforest when aiming to provide support to their research. This indicates the lack of academic literature regarding SCT and no generally applicable theoretical SCT framework or models exists in the knowledge of the authors. Still, only a few studies examine transparency from the view of the businesses regarding
the beginning of supply chains. The analysis of existing SCT studies are often focused on the areas closely related to regulations and the literature reviewed for this thesis clearly shows that previous studies concentrate on the food industry. The need for SCT related research in the food industry can be explained with different kinds of regulations from various countries, where the aim is to protect consumers health. Different scandals that have occurred in the industry due to high competitional level within the sector is another reason for that (Bonazza et al., 2017; Aruoma, 2006). Faisal (2015) investigated the transparency information in red meat supply chains operating in Gulf cooperation council countries and examined the challenges of creating a transparent supply chain and identified 15 inhibitors/barriers impacting transparency in meat supply chains (created a model of their interrelationships). Bastian and Zentes (2013) examines SCT as a key prerequisite for sustainable agri-food SC management and Bruno and Viola (2016) concentrate on safety and quality on food supply chains by creating a collaborative architecture for SCT by utilizing technologies, such as Electronic Product Code Information Services and a cloud hosted database. Moreover, Barker (2016) showed business perspective on GMO Labeling and Transparency and Trienekens et al. (2012) carried a research on transparency in complex dynamic food SC and presents motivations for company to become more transparent.

Other industries, such as clothing industry and human rights have also gained attention in the existing SCT literature. Fashion and clothing industry related studies have shown interest in the consumer by Bhaduri and Ha-Brookshire (2011) examining impact of SCT to consumer attitude and purchase intention in the apparel industry, their results showed a strong need for authorizing agents to testify the legitimacy of businesses transparency efforts while Egels-Zandén and Hansson (2015) findings indicate that consumers do not influence transparency but that transparency improves consumer willingness to buy. Human rights related studies have previously been conducted by Aaronson and Wham (2016) who examine labour rights. Greer and Purvis (2016) investigate corporate SCT and human trafficking and Fischman (2017) presents the impact of the business SCT on trafficking and Slavery Act of 2015 on Forced Labor Technology tools e.g. sustainable design tools have been investigated by Bonanni et al. (2010). Kassahun et al. (2008) identified regulatory, business, consumer and technological requirements for meat supply chain transparency systems that will guide the implementation of these systems. Kumar, Hallqvist and Ekwall (2017) developed a framework for traceability implementation in the textile supply chain and they present a diagram in order to demonstrate the interaction and information exchange between the different actors in the supply chain. Furthermore, Wognum et al. (2011) explore a information system that can support sustainability in food supply chains and communication towards essential stakeholders. Their findings showed that technical solutions are not enough in order to create transparency and that legal, organisational and institutional changes are needed in order to provide new ways of cooperation between consumers and producers. Traceability is another factor that can increase business transparency and enhance companies engagement with their supply chain (Kashmanian, 2017). Laurell (2014) points out the importance of knowing that supply chain traceability is not
equivalent to supply chain transparency: a difference that is going to be explained further down in this chapter. Furthermore, according to Bruno and Viola (2016), fraud and counterfeiting are some of the problems that are arising and becoming more difficult in supply chain because, according to Viola (2016), businesses are not managing their extended network of suppliers and distributors as needed. Lastly, Kashmanian (2017) investigates aspects that can help companies in building greater transparency in supply chains and concentrates in the areas of deforestation and resources. These aspects include: “supply chain mapping, traceability, third-party certification, and goal setting (p. 73)” of which progress is ought to be reported as a proof for achieving these endeavors. This literature review shows that the current academic literature regarding SCT is limited and focused only on the aforementioned main themes.

2.1.1. Definition

For examining the topic, it is necessary to have a precise definition and determination of SCT because SCT is not either a well researched or very old area of research in the way it is currently presented in academic literature. Very few scientific articles are found entailing accurate definition of SCT and therefore in this thesis more attention have been paid to the definition of SCT. However, the transparency and supply chain literature are independently used for creating more consistent understanding about the topic. To begin with, in this thesis supply chain is seen as an extended supply chain, which Beamon (1999) suggests to include all the elements of traditional supply chain “an integrated manufacturing process wherein raw materials are manufactured into final products, then delivered to customers (via distribution, retail, or both) (p. 336)”, but which “extends the oneway chain to construct a semi-closed loop that includes product and packaging recycling, re-use, and/or remanufacturing operations (p. 337).” Transparency can be explained by words, such as “easily seen through, recognized, or detected” (p. 75) and it refers to companies and their stakeholders, investors and NGOs willing to obtain the knowledge and not only the origin of products but also about where and how the production happened with the sourcing and producing of products is preferred to happen in responsible and sustainable way (Kashmanian, 2017). The challenge defining SCT originates from the scholars previously providing inconsistent definitions of SCT. As Egels-Zandén and Hansson (2015) have illustrated in their study, SCT is mainly defined in two different ways. The first definition suggests SCT to be very equal to traceability, which stands for tracking products and products’ movement throughout all the stages of the extended supply chain involving product’s history, application and location, for instance (Kumar, Hallqvist & Ekwall, 2017, p. 3). Traceability can also be seen leading to more transparency as its role regarding quality control and product security to stakeholders is vital due to the global nature of supply chains (Kumar, Koehl & Zeng, 2016). Contrary to this, Cramer (2008) explains SCT as disclosure of information regarding sustainability of the suppliers, an overlapping with the traceability oriented definition of SCT that many scholars use as SCT is often defined as providing the tracking information by embracing names of the suppliers as suggested by Laudal (2010) and Doorey (2011). However,
Egels-Zandén et al. (2015) support the sustainability view to be added to the definition of SCT as they determine it as providing the names of suppliers, their sustainability condition, as well as the buyer, and buyer's purchasing practices. Egels-Zandén and Hansson (2015) explain SCT as a combination of the two latter definitions, where traceability includes the names of the suppliers, sustainability conditions of all suppliers in their supply chain, as well as the buyers’ and their purchase behaviour. Thus, their definition is so far the most extensive definition entailing several areas of SCT into one. As Bastian and Zentes (2013) put it, SCT can be seen as an indicator for many control and safety functions, such as “quality, availability, accessibility, actuality and accuracy (p. 554).” As the third type of definition recognized for this study, United Nations Global Compact and BSR (2014) describe supply chain traceability as a process that includes product’s path from raw material to a final product. Interestingly, the definition adds up ensuring the reliability of sustainability claims to supply chain traceability and encompasses areas such as labor and human rights as well as environmental concerns and anti-corruption. In this thesis, SCT is seen as much more than traceability. Therefore, in this dissertation, SCT is seen as a combination of traceability, visibility and sustainability reaching the social, economic and environmental aspects of it.

<table>
<thead>
<tr>
<th>Literature themes</th>
<th>Main contributors</th>
<th>Findings</th>
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<tbody>
<tr>
<td>Engineering</td>
<td>Trienekens et al. (2012), Schug (2017), Wognum et al. (2011)</td>
<td>Motivations for company to become more transparent, transparency improve collaboration, communication, technical solutions, legal, organisational and institutional changes creates transparency</td>
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### Table 1. Overview of contributors and findings

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<tr>
<td>Information and computers management</td>
<td>Bruno and Viola (2016), Kassahun et al. (2008)</td>
<td>Collaborative architecture for SCT by utilizing technologies, supply chain transparency systems that will guide the implementation of these systems.</td>
</tr>
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**2.2. Comparison of certified and conventional businesses**

Previous literature on certifications and labelling exists but there is not much research about them related to SCT. The existing literature on the topic focuses often only on one type of certification (e.g. fairtrade, rainforest) at a time and little is known about the topic in general. Moreover, SCT of certified businesses has not been compared to conventional businesses empirically before. This literature review presents the current literature comparing certified and conventional businesses and provides insights into certifications, labelling and their differences to conventional businesses. The previous academic literature comparing certified and conventional businesses focuses on forest industry and agriculture. The themes of research areas in interest of scholars have been on community forest management, tree diversity, cotton supply chains and poverty. SCT related studies of certified businesses and conventional businesses are investigated in the previous academic literature by only few scholars, which are presented in more detail below.
To begin with, the literature reviewed on labelling in relation to transparency concentrates on environmental aspects by investigating topics such as carbon labelling (e.g. gas-emissions) (Birkenberg & Birner, 2018; Wu et al., 2014) and food industry (Triekens et al., 2012; Mol & Oosterveer, 2015). According to Wognum et al. (2011) labelling stands for a tool that provides information to consumers and other actors within a supply chain and depending on the consumers, labels can have a different meanings. The information transferred forward through the labels can include knowledge about the, for example, quality, value and environmental friendliness of a product. Wognum et al. (2011) also argue that labels should support transparency and they see labelling as a way for companies to distinguish their supply chain from other supply chains. The latter statement is justified by explaining that labels provide information about the safety, quality and environmental impact, and being part of each stage of supply chain because all the supply chain actors have to be engaged to the quality label (Wognum et al., 2011), which can be attached to a product by filling all the requirements of a certification. Potts et al. (2004) suggest that not only ecological impacts “but also social issues such as child labor, land and water conflicts, and the perpetuation of severe poverty and inequality” can be responded to by voluntary certifications (sustainability standards). Certifications and labeling of product characteristics have according to Röhr, Lüddecke, Drusch, Müller and Alvensleben (2005) impact on consumers "confidence" about the quality of food (product). Labelling is therefore seen to impact positively on product quality perceived by consumers. Mol and Oosterveer (2015) suggest that certifications are seen as a way to show traceability of the products, verify the sustainability claims and overall transparency. Therefore, certifications can be seen as a practical method to work on transparency of products by providing a proof for those obtaining a certification. The interest towards labelled and certified products has grown to significant levels globally even if they started as a niche market with few producer and consumer countries (Mol & Oosterveer, 2015).

Moore (2004) adds that empirical studies alone are not important, but conceptual and theoretical work are also recommended to follow the empirical studies related to areas of justice and fairtrade. To begin with, certifications are seen to improve environmental and socially responsible practices of businesses (Stranieri, Cavaliere & Banterle, 2017). Each certification has its specific environmental or social performance criteria that the farmers need to follow (Ibanez & Blackman, 2016). The usefulness of certifications is linked to way how specific traceability schemes are adopted to firstly, increase and secondly, guarantee transparency in the SC (Stranieri et al., 2017). Stranieri et al. (2017) therefore argue traceability to represent “a fundamental tool for certification adoption (p. 187). Castka and Corbett (2014) state the amount of different sustainability certifications to have increased in a global level. The interest is real as businesses in the food industry, for instance, keep adopting the use of quality certifications continuously (Beatty, 2006; Karipidis, Athanassiadis, Aggelopoulos & Giompliakis, 2009). On a consumer-level, for example eco-certifications are seen as a way to differentiate products based on the environmental attributes of the product (Ibanez & Blackman, 2016). Milder et al. (2015)
supports this by stating that certification can help businesses to differentiate and give market recognition to products, which are produced in line with socially and environmentally acceptable practises. Milder et al. (2015) add that not only the requirements matter, but instead, the implementation of the requirements, such as the quality of auditing in practise, can create benefits (e.g. environmental benefits). Certifications are found vital when it comes to improving the safety and quality of products (Manning & Baines, 2004). In addition, certifications are suggested to improve collaboration among supply chain actors (Trienekens & Zuurbier, 2008).

According to Giovannucci et al. (2008), certifications are divided into different categories. In the coffee industry, as an example, certifications are classified by their “standard-setting bodies”, which include NGO and/or society initiated certifications, such as Fairtrade, Rainforest Alliance and organic, which all highlight the importance of environmental and social standards (Giovannuchi et al., 2008). According to Vallena et al. (2015), these specialty coffee labels are also called private labels that are mission-driven. Gereffi et al. (2001) call them also more legitimate. Moreover, other classification is private certifications, which aim to assure the quality (Elder et al., 2014; Giovannuchi et al., 2008) and traceability of the products (Giovannuchi et al., 2008). However, not all the scholars agree on the role of certifications as ensuring traceability of the products, such as Kashmanian (2017), who argues certifications not to be “a one-for one replacement for traceability” (p. 91). However, Manning and Baines (2004) claim that certifications increase transparency of companies. They supports their view by suggesting certifications to work as a possibility to communicate company’s SC efforts to the customers of the company (Manning & Baines, 2004). Mol and Oosterveer (2015) furthermore argue transparency to be shown visibly in value chains in a form of certifications and sustainability labelling. Private certifications are also claimed to be less transparent putting emphasis on corporate interests but not on sustainability, for instance. Examples of these are CAFE Practices of Starbucks and Nestlé’s Nespresso AAA certifications (Giovannuchi et al., 2008).

Certifications, such as organic, Fairtrade, Rainforest and UTZ certified are also referred to as sustainability standards in academic literature by Milder et al. (2014), who explain certifications to ”reduce or eliminate negative environmental and social factors” (p. 315). As an example, on a study of Barham et al. (2011), certified farmers were found to obtain better land and labour returns compared to the conventional farmers. However, price premiums were not identified as the main reason for better net income, but higher yields (Barham et al., 2011). Moreover, Barham and Weber (2012) noted that certification norms that allow farmers to improve fields in the coffee industry support the welfare of the growers, as well as attract and maintain them. Environmental and economic performance of producers is claimed to be improved by obtaining an eco-certification (Barham & Weber, 2012; Milder et al., 2014; Romero et al., 2013). Ibanez and Blackman (2016) compared Colombian coffee farms during ten years and the results of their survey showed organic certification to have no major impact on the farmers’ income or net return. However, environmental outcomes were seen positive by increasing usage of organic fertilizer, for instance (Ibanez & Blackman, 2016).
In the authors knowledge, certified and conventional businesses have not been compared to each other regarding SCT. Besides the research of Barham et al. (2011), only few scholars compare certified and conventional businesses. A study conducted by Jena, Chichaibelu, Stellmacher and Grote (2012) investigated the impact of product certification on small-scale farmers’ livelihoods and to what extent the participation of Ethiopian small-scale coffee farmers in certified local cooperative structures does improve the farmers socioeconomic coffee situation. Farm-gate coffee prices were found higher in certified coffee chains and had a positive impact on increasing the net income of coffee compared to the conventional production. Jena et al. (2012) research examined if certified coffee producers are “more or less poor” than conventional coffee producers, including similar socio-economic characteristics. Moreover, Jena et al. (2012) investigated if the poverty levels of farmers change over time. The study concluded that not only coffee yields, profitability and efficiency need to be increased regarding the farms, but the prices of certified coffee should not be seen as compensation for low productivity, or land and labour constraints. Other studies that have compared certified and conventional businesses have investigated tropical forest industry, such as Burivalova, Hua, Pin Koh, Garcia and Putz (2017). Burivalova et al. (2017) investigate if the published information about how forest certification and community forest management perform in terms of environmental, social, and economic variables, and they found out that environmental benefits of having certification are massive and they can be achieved by improving the overall welfare of neighbouring communities and decreasing financial profit in short term. Also, Haggar, Asigbaase, Bonilla, Pico and Quilo (2015) add up to the forest industry by their research comparing tree diversity organic coffee farms by analyzing sustainable coffee certifications impact on agroforestry systems compared to conventional farms. Lastly, Lakhal, Sidibé and H’Mida (2008) compared certified organic and conventional cotton supply chains in Mali. Lakhal et al. (2008) present the key differences between conventional and certified organic cotton supply chains. Lakhal et al. (2008) show that organic production of cotton may benefit the farmers by providing a higher price, an opportunity to lower the cost regarding farm inputs, wholesome soils and various sources of income. The study shows that organic production might offer higher gross margins to the farmers compared to conventional farmers. However, an increase in organic cotton farmers’ profits is seen to be possible in mid- to long term; especially in more poor developing countries where the wages are low. The study also showed that there is no spot market for organic cotton in Mali compared to the supply chain of conventional cotton growers and “specific coordination mechanisms” should be “formed and implemented within the organic cotton” supply chain.
Table 2. Comparison of certified and conventional businesses.

Table 2 presents the comparison of certified and conventional businesses and shows the differences between these two business types.

2.3. Research gap

Current SCT literature is limited and no generally applicable theory or definition exists on SCT. Literature review shows that the areas of management and attempts to identify barriers to SCT as well as ways to improve it are more investigated. Supply chains and transparency have been more researched separately, but only little is known about SCT as whole. Based on the literature review, the aforementioned comparison of certified and conventional businesses shows that the businesses differ greatly. Certified and conventional businesses have only been compared to each other empirically few times and the comparison has concentrated on the areas of agriculture and forest industry. The lack of empirically grounded studies on SCT as well as certified and conventional businesses is real. Other studies mention certifications may be
beneficial for SCT but there is a lack of research about the topic proving it. What is more, the importance of the topic to companies and their stakeholders cannot be left aside. Summarizing, no study so far has compared SCT of certified and conventional businesses in theory nor empirically, which emphasises the importance for conducting this research.
3.0 Conceptual framework

The following conceptual framework is created based on the existing literature to clarify the concept of SCT. The conceptual framework is going to be used as a base for the conceptual model created by the authors. The conceptual model is thus created within the conceptual framework and by providing insights into SCT, it simultaneously provides context for the upcoming analysis. The conceptual framework is the first of its kind to explain supply chain transparency in the academic literature.

3.1. SCT Variables

Creating the conceptual framework is necessary because of the lack of theories about the thesis topic. The conceptual framework is based on the existing SCT literature. Moreover, the conceptual model is built within the conceptual framework and it provides new theoretical insights by presenting SCT variables used for conducting the comparison between certified and conventional businesses. In this thesis SCT is seen as a combination of three variables. The variables identified from the literature are namely traceability, visibility and sustainability. The aforementioned variables are used to examine SCT. The aim of the SCT model is to become a generally applicable model for measuring SCT in all types of businesses. Notably, SCT does not exist without all the variables being embedded within business and the reasoning for this is explained in more detail below. The theory behind conceptual model (figure 2) is first going to be explained one variable at the time and lastly, the actual model is presented showing the relation between them.

Figure 2. Conceptual model: SCT of certified and conventional businesses

3.1.1. Traceability

The existing academic literature clearly indicates that there is no transparency without traceability. Authors, such (Kumar, Koehl & Zeng, 2016; Kashmanian, 2017; Wognum et al., 2011) suggest traceability to be an essential part of SCT. Traceability is defined as “the ability to
track forward the movement through specified stage(s) of the extended supply chain and trace backward the history, application or location of that which is under consideration (Kumar, Hallqvist & Ekwall, 2017, p. 3).” The importance of the first SCT variable cannot be left aside. Doorey (2011) argues that lousy tracing and monitoring of members in the supply chain may is ignorance regarding matters, such as working conditions of the employers within the supply chain. Therefore, traceability is important because ignoring it may result in harmful consequences for businesses, such as scandals (Zhu, Song, Hazen, Lee & Cegielski, 2018). Traceability can also be seen leading to more transparency as its role regarding quality control and product security to stakeholders is vital due to the global nature of supply chains (Kumar, Koehl & Zeng, 2016). In addition, Van Dorp (2004) suggests traceability to be critical aspect of transparency that creates consumer awareness about the quality of a product and proposes traceability to include aspects, such as upstreaming and downstreaming, meaning product’s origin and place for processing. Kumar, Koehl and Zeng (2016) add up that implementation of a traceability system is good for companies in the sense that this technology improves their supply chain transparency and it controls the integration between all the members. Traceability in supply chains can both increase quality control and product security for the manufacturers, distributors, end consumers and the specific company (Kumar, Koehl & Zeng, 2016). Kashmanian (2017) further states that lack of traceability in the supply chain allows producers with a history of human and environmental impacts to continue selling their products without any negative financial consequences. Wognum et al. (2011) supports this and highlights the importance of traceability systems offering possibilities for tracing a product in all the processes a product can undergo. Wognum et al. (2011) also connect this strongly to transparency within supply chain as these traceability systems can furthermore provide very precise information about the product and its processes to the buyers and consumers. It is known that many businesses concentrate only on their own processes and do not take the impacts of the other parts of the supply chain into consideration. Traceability should not concern only supply chain externally, but traceability inside businesses, which exemplifies internal transparency (Wognum et al., 2011). What is more, traceability is seen as equivalent to certification by consumers due to the limited information regarding the product that is currently available for them (Kumar, Hallqvist & Ekwall, 2017). Additionally, every partner and stage in the supply chain needs to be part of the information building and sharing in order to achieve a complete traceability (Kumar, Hallqvist & Ekwall, 2017). Thus, traceability is important but also the initial step in order for businesses to gain visibility into their supply chain (Kashmanian, 2017), which brings us to the second SCT variable.

3.1.2. Visibility

Businesses aiming for long-term competitiveness in their supply networks are impacted by the complexity of supply chains today. For maintaining this competitiveness, the visibility of key information in supply chains as part of businesses’ collaboration across their organisational
boundaries is essential (Bartley, Denyse, Julien & Baines, 2007). To continue with Kashmanian’s (2017) latter argument above, traceability is essential for companies to gain visibility in their supply chain. Contrarily, Bhaduri and Ha-Brookshire (2011) suggest that visibility is one critical aspect in order to have a traceable supply chain, due to the importance of being able to show all the movements of source materials through various processors such as the manufacturers, the members of the distribution channel and all the way to the end consumer. Chan (2003) further motivates the importance of visibility for supply chain as it is vital for providing accurate and fast information delivery. Supply chain visibility is defined by scholars to stand for the information availability and access across the supply chain (Narasimhan et al., 2006), the extent of visible (Holcomb et al., 2011) or relevant and meaningful information (Kaipia & Hartiala, 2006) to partners in the supply chain. Lastly, Chan (2003) highlights supply chain visibility to stand for transferring quality of information among suppliers, manufacturers, distributors and customers. Supply chain visibility is therefore seen to transfer and provide information throughout the extended supply chain, this can be linked to traceability, visible information can only be obtained when the information is traceable. The combination of these two variables creates supply chain transparency. Bruno and Viola (2016) further add that transparency of businesses is not only dependent on how visible information is but rather on how understandable this information is. Businesses that have a lacking visibility into their suppliers will have difficulties in taking steps towards mitigations of their climate vulnerability, while the ones that have it will have a better positioned to both mitigate risk made by the climate change and to realize opportunities in their supply chains (Norton et al., 2015). Lamming et al. (2001) states that visibility or information sharing between partners can be seen as transparency, they further suggest that there is different degrees of it. As an example, even if a supply chain is visible and the information sharing is accessible, different actors within the supply chain can have different access to it. It is not only information regarding whom that is in the supply chain that businesses should disclose but also information concerning how those suppliers are or are not implementing different social and environmental standards (Kashmanian, 2017). Businesses are dealing with issues concerning climate change, labor and workplace conditions, ecosystems at risk, product safety and also product risks, and are therefore increasing their attention in order to make their supply chains more visible (Makower, 2015). These aforementioned issues can be connected to the last SCT variable, sustainability. This variable is going to be further explained below. However, visibility is something that stakeholders, customer and governments are demanding due to the different assurances, such as environmental impacts, good working conditions and ethical sourcing that it provides (Kashmanian, 2017). Lastly, increased transparency in supply chains is reflected in improved visibility of products by end-consumers, which finally helps to protect the brands of products by increasing putting supplier human rights into use (Awaysheh & Klassen, 2012)

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3.1.3. Sustainability

Lastly, sustainability is considered as the last SCT variable, because of to the increased social emphasis on transparency in general but also in relation to sustainability (Augustine, 2012; Gallo & Christensen, 2011; Mol, 2015). Egels-Zandén et al. (2015) believes that sustainability should be part of the SCT definition due to its primary importance of providing relevant sustainability information regarding suppliers name, their sustainability condition but also information about buyers purchasing practices (Egels-Zandén et al., 2015). Cramer (2008) further explains SCT as disclosure of information regarding sustainability of the suppliers. This is clearly overlapping with the traceability oriented definition of SCT that many scholars use as SCT is often defined as providing the tracking information by embracing names of the suppliers as suggested by Laudal (2010) and Doorey (2011).

It is suggested that sustainability helps all industries to secure the environment for future generations by taking into account social (individuals) (Wognum et al., 2011), economic (revenue) and environmental (planet) aspects, also referred as the triple bottom line (Seuring & Müller, 2008). The impact that products and processes have on people is non-neglectable, which is why products and the processes must be made and done under socially acceptable working circumstances, and the workers must partake in the decision making this description is part of the social sustainability aspect. Human health and safety is also an important part of this aspect (Wognum et al., 2011). In the same regard that technical product characteristics, such as safety, can be considered as a dimension of product quality, environmental impact too can be regarded as such. The way that the raw material is provided, and under what social circumstances said material is produced under, are two examples of the environmental impact that a product and a business procedure has and are fairly easy to observe for the actors in the supply chain. Though, not all quality dimensions are clearly visible for all the actors in the supply chain (Wognum et al., 2011). Environmental sustainability also seeks to sustain “global life-support systems” that maintain human life. By doing so sources capacity of the ecosystem needs to be maintained, these source provides “raw material inputs- food, water, air, energy, sink capacities assimilate outputs or waste (Goodland, 1995, p. 6)” and should be sustained. According to Redclift (1994) poverty reduction should be the primary goal for sustainable development and he further states that this should be obtained before environmental quality, poverty is continuing increasing despite the growth of global and national economic. Lastly, economic sustainability focuses on the natural resource and base that supplies physical inputs into the production process, such as renewable sources (Goodland, 1995). These life support system would includes “water, and soil, all of these need to be healthy, meaning that their environmental service capacity must be maintained (Goodland, 1995, p. 2).” This aspect also focus on having a fair share in the profit between all actors (Wognum et al., 2011). Organisations that are engaged in the interaction of social, environmental and economic performance are not only affecting the natural environment and society in a positive way but they are also gaining competitive advantage and economic benefits (Carter & Rogers, 2008). Kashmanian (2017) support this by stating that supply chains
have a great impact and they are the ones representing organisations environmental footmarks. Supply chain transparency could therefore be a way in order for companies to adapt voluntary commitment into their supply chain (Egels-Zandén et al., 2015).

Dingwerth and Eichinger (2010) argue that transparency can be used as a tool in order to hold powerful actors responsible for their information disclosure because companies are often unwilling to embrace sustainability in their supply chain (Egels-Zandén et al., 2015). Transparency can also facilitate campaigns against unsustainable actions among suppliers in developing countries (Chan, 2003). Kashmanian (2017) believes that companies with reduce or lack of transparency in their supply chain are not able to either understand or fully advance when it comes to their sustainability efforts. Laurell (2014) further explains that lack of transparency can be seen as a barrier when it comes to promoting the sustainability efforts throughout the supply chain. Supply chain traceability can actually help companies to advance towards their sustainability goals (Kashmanian, 2017).

3.2. SCT Model

Traceability, visibility and sustainability are all embedded into SCT because of their unique relationship to each other. Businesses are not able to obtain transparency without the aforementioned variables. Traceability is seen as a step one towards a more transparent supply chain. Kashmanian’s (2017) suggests that traceability is essential for companies to gain visibility in their supply chain. Therefore, visibility is the second step for businesses in forming SCT, because visible information can only be obtained when the information is traceable. Also, the information can not be accessible without visible supply chains (Chan, 2003). However, Bhaduri and Ha-Brookshire (2011) contrarily suggest that visibility is one critical aspect to be considered for having a traceable supply chain, due to the importance of being able to show all the movements of source materials through various processors such as the manufacturers, the members of the distribution channel and all the way to the end customer. SCT Model takes into consideration the impact of visibility to traceability, even if traceability is always seen “necessary” for visibility creation in supply chains. Thus, the combination of the aforementioned variables is the base for the sustainability variable. As Kashmanian (2017) suggests, SCT can actually help companies to advance towards their sustainability goal. In the SCT Model, sustainability is seen as step three in this process including environmental aspects, economic aspects and lastly social aspects in accordance with the theory of (Wognum et al., 2011). Identifying where suppliers are located and how they are linked to one another and their different sustainability challenges is something challenging for many businesses. It is important for businesses to identify these challenges and decided how to engage with them to improve sustainability in practices (Kashmanian, 2017). The different variables are being graded based on three different stages, Low, Medium, High. Low means that the requirement for a specific variables are not achieved, while medium is seen as a stage in between, where the requirements variables are neither achieved nor unachieved. Finally, in stage three all the requirements are
achieved. Therefore, all three variables need to be connected to each other for supply chain to be fully transparent. Summarising, to enable SCT, the two first steps of SCT Model are essential and especially traceability creates a crucial base for companies towards more transparency even if all variables are needed to obtain SCT.
4.0 Methodology

The following chapter presents the methodology used when conducting this Minor Field study in Colombia during the spring of 2018. The chapter presents reader with all the methodological strategies chosen in this study. This chapter begins with the research strategy, followed by a discussion regarding the use of a qualitative approach and how the data has been gathered. Finally, the ethics of the study and validity of using a qualitative method is outlined.

4.1. Research design

Choices concerning the research method and research design of a study is highly important. A common mistake is to confuse these two terms with each other and it is therefore important to understand the differences between them (Bryman & Bell, 2015). Research methods are associated with different types of research designs while the other represents a structure that guides the study (Bryman & Bell, 2015). The aim of this study is to examine supply chain transparency of certified and conventional businesses. The research question was devised in a way that this purpose could be pursued (Yin, 2003). The question concerning the “How” and “Why” is usually more explanatory and it is also in favour of the use of case studies (Yin, 2003). Based on the aforementioned statement and on the “How” research question in this study a case study design belonging to a qualitative research method has been applied. Quantitative researches are sometimes critical towards qualitative research design because it is too subjective and difficult to replicate (Bryman & Bell, 2015).

Additionally, qualitative studies tend to have an inductive view of the relationship between theory and research. The inductive approach supports conclusions that are based on an empirical study and theory being an outcome of research (Bryman & Bell, 2015). This process involves drawing a generalisable conclusion out of observation and once the theoretical reflection has been completed the researcher usually collects further data. This is usually done in order to determine the conditions in which a theory will or will not hold. This is a iterative strategy that involves weaving back and forth between data and theory (Bryman & Bell, 2015). A good research is characterized by good strategic choices which are based on a number of assumptions regarding what is going to be explored. Some strategies are better than others and there is no right way to go when it comes to tackle certain research issues (Denscombe, 2000). The inductive approach is one of the research strategies being used in this study because the data has been collected in a iterative way. The outcome of this study is aimed to be a contribution to the existing SCT literature as well as research regarding certified and conventional businesses.

The authors have received a the Minor Field Studies (MFS) scholarship provided by Swedish governmental office named Swedish International Development Cooperation Agency (SIDA). This is a scholarship programme for field studies in developing countries that enable students to gather material for their bachelor or master dissertation for a period of eight to ten weeks (Sida, 2017). The scholarship provides students with financial help and are given a preparatory course
organised by SIDA for conducting a field study. Students receiving scholarship are selected by their host universities in accordance with SIDA’s criteria. Thus, it is important to mention that this study can be carried out without receiving MFS scholarship and therefore it is not a prerequisite for conducting a research. Based on a list of different countries provided by SIDA, the authors decided to conduct their field study in Colombia. During the application process of the MFS scholarship, the authors became aware of the complexity of the coffee supply chain and the fact that a majority of farmers have little knowledge regarding where their coffee goes or what price their coffee are sold for (Fairtrade Foundation, 2018). The coffee consumption was doubled from 4.2m tonnes to 8.7m tonnes between 1970 and 2015 (Fairtrade Foundation, 2018) and small- scale family farms stand for over seventy percent of the world’s coffee production in Latin America and a majority of these produces live in poverty (Bacon, 2005). This, in combination with the fact that coffee pickers and farm workers are in general the most vulnerable groups of this supply chain due to the exclusion in the coffee industry’s sustainability efforts (Daily Coffee News, 2013) were the reasons behind choosing Colombia’s coffee supply chain and its transparency for the research topic, as it is an research area lacking prior research.

Case study method allows the investigator to focus on a defined situation and unit that has a purpose and functioning parts, and allows the researchers to obtain meaningful characteristics of events in real life (Bryman & Bell, 2015; Yin, 2003). Moreover, cases are usually an object of interests and the researches intention is to provide an in depth- education of the case by collecting data through interviews, field observation and documents (Yin, 2009). Therefore, this field study based on a specific case aims to provide new insights and understand of the field, and therefore a combination of interviews and direct observation is used in order to collect the data.

4.1.1. Ontological position

The aim of this study is to examine SCT of certified and conventional businesses. A constructivist ontological position is therefore adopted, meaning that social phenomena is being produced through social interaction. This social phenomena is under constant change due to the involvement of the social actors (Bryman & Bell, 2015). The social actors in this study are the certified and conventional businesses, while SCT can be seen as a reflection of its surroundings.

4.1.2. Epistemologi position

Based on the purpose of the study, an interpretivism position has been adopted in this work. Bryman & Bell (2015) believe that this epistemological position advocates “the understanding of the social world through an examination of the interpretation of that world by its participants (p. 392)”, meaning that there is no focus on the external participants since they are not part of those that are involved in the social action. It is rather about the interpretive understanding of the social actions (Bryman & Bell, 2015). This study intends to see how SCT is being interpreted in different businesses.
4.2. Sample and Case selection

To provide a sufficiently generalizable insights, this study contains eight cases and therefore follows a multiple-case design. According to Yin (2003), each case must be carefully selected so that it either predicts similar (literal replication) or contrasting results (theoretical replication); multiple-case design needs to have replication instead of a sampling logic. In order to achieve these requirements, the cases in this study have been carefully selected to achieve theoretical replication. Multiple-case design are also largely undertaken for the purpose of comparing the cases that are included (Bryman & Bell, 2015). The comparison of certified and conventional businesses was carried out as a case study in the coffee industry in Colombia, where it is common to have both these type of businesses. The aim of this study is as mentioned above, to investigate SCT of certified and conventional businesses and therefore this research design allows the authors to compare and contrast the findings deriving from each of the cases in this study (Bryman & Bell, 2015). Based on the existing research concerning SCT, the conceptual framework was created. The coffee industry was chosen for conducting the case studies because certified and conventional businesses are found somewhat common, and they influence greatly on people's lives in the coffee industry, which furthermore supports the aim of SIDA. In order to create variety for this study, eight different coffee businesses and their supply chains from the region of Cundinamarca, Huila and Antioquia were chosen. In addition, these businesses were divided into two major groups, certified and conventional businesses as previous academic research does not recognize such studies made before in relation to SCT. To gain deeper knowledge regarding transparency, a theory based interview guide is designed. It is important to mention that the original research questions attached to the appendices were designed before the authors decided to make slight changes to the research topic and therefore some of the questions are not as relevant as they were when the interview guide was designed. The changes were decided to be done because of the higher importance of the current topic.

The most adequate sampling technique of this study is non-probability sampling, also referred as purposive sampling. This technique allows the researcher to seek the research participant and sample cases in a strategic way (Bryman & Bell, 2015). The research participants in these cases have been chosen in a strategic way for achieving relevant answers to the research question. A personal contact of one of the author’s, Heidi Manninen from Turku University, helped providing contacts for data gathering within the coffee supply chain in Colombia. Moreover, other contacts within the coffee industry in Colombia were gathered via the other author’s acquaintances and the contact person from the field (as part of the SIDA project) that have connections within the coffee industry. Furthermore, one form of purposive sampling is theoretical sampling, this is a process that is ongoing rather than a distinct and single stage as it is for the probability sampling (Bryman & Bell, 2015). This sampling technique allows the researchers to collect, code and analyze data while collecting new one, for developing theory as it emerges. Which means that the data collection is controlled by the emerging theory. Data gathering and the theory development of this study have been a parallel process between January
and April 2018, which indicates the aforementioned sampling strategy. Purposive sampling often involves more than one approach and it is common for snowball sampling to be preceded by another form of purposive sampling (Bryman & Bell, 2015). Thus, this study utilizes theoretical sampling in combination with snowball sampling. This sampling method allows the researcher to take initial contact with a small group of individuals that are relevant for the research and its aim. These contacts are then used for establishing contacts with other interviewees that are of relevance for the study (Bryman & Bell, 2015). These initial contacts of the researchers helped to establish new interviewees and physical destinations for this field research. A further explanation for this is found in the data collection part.

4.2.1. Selection criteria

Determination of the essential selection criteria is usually done before the sampling phase of the study. Pursuant to LeCompte and Schensul (2010) criterion based qualifications of the samples are commonly used to determine the kind of study. This criterion reflects the purpose of the study and are seen as a form of directions to cases that are rich on information. Thus, this following criteria is selected in order to choose the appropriate cases:

1. Certified and conventional businesses:
   To provide more comparable and diverse data, two different kind of businesses; either certified and conventional businesses have been chosen.

2. Local entrepreneurs:
   Local farmers representing the beginning of the supply chain in Colombia working in the coffee industry.

3. Different actors in the supply chain:
   Even if the research aims to begin examining SCT from the very beginning of extended supply chain, also other actors than raw material providers were aimed to be contacted within supply chain, such as roasteries and exporters for increasing overall understand about the industry and gathering additional information showing more diverse perspectives about SCT. The selection of these actors is based on their knowledge, relationship to the raw material supplier and expertise concerning the research and its subject

4.2.2. Sample size and collection

The sample size in qualitative research should not be too small for not making it difficult to achieve data saturation, but neither so large that is difficult to take a deep, case oriented analysis (Bryman & Bell, 2015). In this research, all of the selected sample members had a clear
role within the area of research by belonging to either a certified or conventional coffee supply chain (having the roots of the supply chain in Colombia). The sample members selected maintain relevant and sufficient work experience in each stage of the supply chain to provide knowledge about their own role in the supply chain. The participants selected consist namely of a group of coffee farmers: five conventional farmers and three certified farmers. Additional interviewees consist of a group of entrepreneurs representing different parts in the coffee supply chain.

4.3 Data

4.3.1 Data collection

Interviews are one of the most important sources for a case study (Merriam & Tisdell, 2016), for getting a wide and depth understanding of the topic, a semi-structured interview method is chosen for collecting the data. These interviews are of an open-ended nature, meaning that the respondents are asked about facts that matter but also about their opinions regarding different events. Questions about the respondents insights into certain occurrence are also common in some situations (Yin, 2003). Open-ended interviews usually have a key informants that are critical to the success of a case study. This person is a respondents that suggest other persons to interview that are of relevance (Yin, 2003). Two key informants have been critical to this study, Francy Alarcon and Rene Morales. Their contacts facilitated the data gathering process and made it possible to visit the field during the interview process. Field study enables the researcher to visit the field, a method that is of value to the case study since it creates the opportunity for direct observations (Yin, 2003). Direct observations that are less formally are usually made throughout a field visit and can include occasions when other evidence such as interviews are being collected. It is important to mention that these direct observations provides additional information regarding the topic that is being studied (Yin, 2003). Case studies data can come from different sources and by using both direct observations and interviews a triangulation method (Yin, 2003) is applied in this study. Triangulation means that more than one method of source data is used and refers to a cross-checking process, meaning that the outcome of the case study has been supported by more than one source of evidence (Yin, 2003; Bryman & Bell, 2015).

The interview guide was created based on existing literature, these questions acted as guidelines during the different interviews. All the respondents are being anonymous and are therefore referred to with letters. Each of the interviews lasted between one and two hours, depending on the interviewee’s collaboration. The observations and interviews for this studies were made in Colombia between February and April 2018. Preliminary preparations of this research were done by visiting four coffee farmers representing traditional farms in order to understand their daily work as part of SCT in the coffee industry. The same farmers were interviewed also later on. Three interviews were conducted to gather additional data for this study. The interviewees include France Alarcon, an entrepreneur and exporter from USA, Mario
Andres Prieto, a roastery and barista academy owner and lastly, Rene Morales, a manager working at a coffee roastery in Bogota, were also part of the preliminary preparations. All the interviews except one were conducted in Spanish. To avoid misunderstanding and decrease the language barriers a Spanish teacher proofread the interview guide. The first interview with France Alarcon and the last three interviews were held via Skype due to geographical and financial limitations, meaning that no direct observation was made. These interviews were all recorded and conducted in quiet spaces.

The interview with Mario Andres Prieto were held at his Barista School/ roastery; one of the researchers was responsible for conducting the interview while the other did put more emphasis on direct observations. Rene Morales interview at Chocoalicos roastery had the same structure as the one with Mario Andres Prieto. Both were answering questions while explaining and showing their part of the coffee process, these interviews were part of the preliminary preparations. Even though, they have a similar part of the process, Mario Andres Prieto only works with specialty and certificate coffee while Rene Morales works with regular and conventional coffee. A field trip to four regular farms and one slightly bigger farm that includes a small coffee roastery were located in Cundinamarca. This trip was part of the preliminary preparations and helped the researcher to get a better understanding of the coffee industry and the production of coffee. The interviews with the farmers were held some weeks after in the same location. The second field trip was unfortunately canceled due to the ELN’s 3 day offensive. Colombian military aimed to offer security, but it was too risky to travel to the farm as ELN announced blockade to include roads, rivers, sea and air routes. This interview with Certified business A was therefore held in Bogota in Chocoalicos office. The last field trip was located in Antioquia and a contact Kevin Moreno in Medellin was signed for translating and transportation to the coffee farm and a local coffee organisation in Jardin so that feasible linguistic and safety issues were avoided.

The secondary data used for this research is found in the form of articles and reports. Articles used for conducting this thesis are selected by utilising Halmstad University’s database as well as LUB search (of Lund University) by using the following criteria: peer reviewed, full text, and academic journals. Keywords used for searching articles were “supply chain transparency”, “supply chain”, “transparency”, “certification“, “certification AND supply chain”, “certification AND supply chain transparency” as well as “coffee industry” and “Colombia”, “traceability AND supply chain”, “visibility AND supply chain”, “sustainability AND supply chain”, “conventional businesses”. As an exception, a handful of articles were found by utilising the articles found from the latter databases.

4.3.2. Data analysis

Bryman and Bell (2015) state that recording and transcribing interviews have several advantages, such as correction in the natural limitation of the researchers memories regarding what people say in interviews, and it also allows a repeated examination of the answers from
These concerns are more about how the information regarding research participants should be treated. Thus, in order to avoid misunderstandings and prevent data loss, all the interviews have been recorded and transcribed. As the interviews were conducted in Spanish, they were also transcribed to Spanish before being translated to English.

According to Yin (2014), multi-case study have two stages of analysis where the first one includes within-case analysis and the second one cross-case analysis. The cases of this study have therefore been analysed in accordance with those stages, and each business is analysed separately in within-case analysis, creating a comprehensive case. Yin (2014) believes that this enables the researcher to learn as much as possible about the variables that can be of importance to the case. Within-case analysis of two cases are based on in total eight interviews and three additional interviews were created, and were later used as a base for the cross-case analysis for identifying similarities, differences and patterns across the cases. To illustrate important result in the within-case analysis, quotations are being used. Furthermore, the cross-case analysis begins after each within-case analysis is complete and its purpose is to look for cross-case patterns between the cases. It is important to mention that the focus of the paper can be understood by using the cross-case perspective. There are three different phases when coding data, namely: open, axial, and selective. Where the first phase is to characterise data that could be relevant for the study, which is also referred as open coding. Axial coding is the second phase and it contains different categories and characteristics that are being related to each other. Selective coding is the last part of the process and this is when a core category and hypothesis are elaborated (Strauss & Corbin, 1990). Notably, the data in the grading system applied on variables used for analysis is the authors’ subjective evaluation based on data and it is shown between table three and nine.

4.3.3. Ethical Issues

Bryman and Bell (2015) believe that discussion about a study’s ethics in business research points out the importance of the role of values in the research process. They further state that the researcher is the one responsible to estimate the possibility of harming the research participants, which is something that should be minimized (Bryman & Bell, 2015). This study does not involve animals and all procedures performed in the study involving human participants were in accordance with the ethical standards with the 1964 Helsinki declaration and its later amendments or comparable ethical standard. Lack of informed consent is about the importance of giving the participants as much information as needed in order to make a decision whether they wish to participate in the study or not (Bryman & Bell, 2015). Researches also need to ensure that the respondents are in no way directly harmed or affected by the result (Bryman & Bell, 2015). Thus, informed consent of this study was obtained from all individual participants included in the study, some of them are being anonymous while others wanted to have their names published, which is a request that the researchers highly respects. Invasion of privacy is another important part of a study's ethical concerns and is linked to lack of informed consent. These concerns are more about how the information regarding research participants should be
handle (Bryman & Bell, 2015). Thus, all the recorded data of this study has been recorded with the consent of all the participants, all information was dealt with greatest security and with accordance ethical concerns.

4.4. Validity and Reliability

The relevance of reliability and validity in qualitative research has been discussed among qualitative researchers due to higher levels of subjectivity and lower levels of generalisability (Bryman & Bell, 2015; Merriam & Tisdell, 2016). Reliability stands for the replicability of the results of the study and it is important to mention that replication in business research is uncommon (Bryman & Bell, 2015). Le Compte and Goetz (1982) talk about external reliability and the difficulties to replicable a study due to the impossibility to pause a social setting and its circumstances. Thus, the external reliability of this study can therefore be hard to obtain. However, internal reliability concerns whether there is more than one researcher agreeing about what is being seen and heard (Bryman & Bell, 2015). Two researches have been involved during the whole study, meaning that more than one researcher agrees on what has been seen and heard. Internal validity refers to whether there is a good match between the observation and the theoretical framework (Bryman & Bell, 2015). To obtain internal validity, the theoretical framework of this study has been modified couple of times. Le Compte and Goetz (1982) state that external validity can be seen as a problem for qualitative research because of common utilisation of case studies as well as conducting studies that have small sample sizes. Even if this study aims to include as many cases in this study as possible, it is not enough when comparing how many certified and conventional businesses exists in reality, and therefore internal validity can be hard to reach.
5.0. Results

In this thesis, interviewees consist of a group of certified and conventional coffee businesses in Colombia. In more detail, raw material suppliers are representing the beginning of extended supply chain. First, three descriptions of certified businesses are presented, which follow the descriptions of five conventional businesses. The businesses are named by the type of business they represent and an alphabet is added to ease up the upcoming cross case analysis. Additional empirical data is provided to support the empirical data regarding the businesses and the additional data is gathered from actors belonging to different parts of coffee supply chain in Colombia. Interviewees for additional data are named as Respondents I, II and III to facilitate the reading process.

5.1. Descriptions of certified businesses

5.1.1. Certified business A
Certified business A is a system technician by profession but decided to get involved in her family's coffee business eight years ago. Certified business A’s father was responsible for running the coffee business of the family until he got murdered. Thereafter, Certified business A’s mother took care of the business and worked her way through even if she did not have any specific knowledge about the coffee production. They have been producing coffee for over twenty years in Cundinamarca. Certified business A is responsible of the commercialization process of their coffee and for sharing knowledge regarding different certifications requirements to the workers. They used to sell their coffee to the Colombian Coffee Federation, but nowadays only a small amount of their coffee is sold to the federation. Certified business A exports the coffee to Switzerland, Canada and Spain and the family owned farm have Rainforest, UTZ and Fairtrade certifications.

5.1.2. Certified business B
Certified business B is a small specialty coffee producer located in Huila. Certified business B’s educational is limited to a high school degree. Certified business B is responsible for the whole coffee production while his son have the major responsibility for the coffee’s commercialization process. The size of the farm is eight hectares and the majority of the coffee is being sold to an export company that exports to Spain, Australia and Canada. Three percent of his coffee is sold to the Colombian Coffee Federation and the farm have Rainforest, UTZ, Fairtrade and Practice certifications. Certified business B has three full time workers and around twenty to twenty five workers during harvest season.
5.1.3. Certified business C
Certified business C is a farm manager that is responsible for all the employees and for a specific part of the coffee production at the farm. The farm is located in Antioquia and Certified business C do not own the farm. He lives at the farm with his whole family. The educational background is low. The farm sells all its coffee to the Colombian Coffee Federation and they are the ones that sell it further to other export companies. The farm has a Fairtrade certification.

5.1.4. Respondent I
Additional Respondent I owns a coffee roastery, barista school and a cafeteria, but he also exports coffee abroad. Respondent I has been working in the coffee industry for 15 years and 10 years with specialty coffees.

5.2. SCT of certified businesses
This section investigates SCT of certified businesses by looking at the each SCT variable at time. First, the variable of Traceability is analysed, followed by Visibility and lastly Sustainability (economic, social, environmental) by comparing the conceptual model to the information provided by certified businesses A, B and C. Each businesses responses are first analysed separately, following by a table where the results from different variables and their connection to each other are shown based on the SCT model. Also, the intensity (low, medium, high) of each variables’ impact is mentioned. Additional data by Respondent I is also presented. Lastly, the results of each business type is condensed.

5.2.1 Certified business A
Van Dorp (2004) suggests that traceability is a critical aspect of transparency that creates consumer awareness about the quality of a product and proposes traceability to include aspects such as upstreaming and downstreaming, meaning product’s origin and place for processing. Certified business A’s responses reveals that she would prefer selling coffee straight to the customers without using any intermediaries because this way customers can be provided with more knowledge about the coffee they are purchasing. This indicates Certified business A to be interested in traceability by providing information about the product for her consumers. In line with Kumar, Koehl and Zeng (2016), this product information can increase both product’s quality control and product security. However, it is notable that Certified business A’s motivation for direct sales to consumers revolves not only on information creation and accessibility by traceability, but also for financial reasons. Certified business A exports coffee abroad without intermediaries to client’s in Switzerland, Spain and Canada because the quantities the farm produce, and can produce, is too small. She explains:
“I do not want to export through the federation, I do not want to talk bad about the federation because they support you [farmers], but when it comes to the price [of the coffee], they are not giving you a fair price. You will get a better price if you export directly without the help of the federation. The idea is to have customers that have knowledge about our coffee and want to buy it directly from us.”

Certified business A continues about the role of the Colombian Coffee Federation:

“The federation helps us out with technical support and if you want to sell your coffee but if you want to do more you need to do it by yourself.”

Even if Certified business A’s business have Rainforest, UTZ and Fairtrade certifications, she points out that certifications are costly to obtain and therefore her aim is to create traceability to her business, even without the certifications.

“A lot of people do everything [production] organic, but they do not get the certification because of the high price that costs to get it. Instead of using this certificate, we create our own letters stating that we are giving organic products to our customers. The customers are able to come and inspect the products and their production whenever they want.”

These letters add up in forming traceability to the Certified business A’s supply chain. It is notable that this only concerns customers that have the possibility to visit the farm personally. The information about the origin of the product obtained by personal visits is therefore both traceable and visible. What is more, traceability is seen as equivalent to that of the certifications by consumers due to the limited information regarding the product that is currently available for them (Kumar, Hallqvist & Ekwall, 2017). To this point, the most surprising aspect of this data is that even if the farm obtains a certification and certified farms are claimed to provide information, this is not always the case. Certified business A insist on getting rid of intermediaries not only for the purpose of gaining more information about their customers, but also for making the information more accessible to the customers. As Kumar, Hallqvist and Ekwall (2017) suggest; every partner in the supply chain needs to contribute in order to obtain complete traceability. This shows that Certified business A experience lack of traceability when intermediaries are involved, thus Certified business A rather sell the product by herself to secure product traceability. Certified business A do not have a traceability system, something that according to Kumar, Koehl and Zeng (2016) is vital since technology improves integration between all the members.

Supply chain visibility is seen transferring and providing information throughout the extended supply chain, which is a continuum for traceability. Visible information exists only when the information is traceable (Chan, 2003). In addition to exports, Certified business A sells
a small amount of the farm’s coffee to the Colombian Coffee Federation, which is not traceable after it is sold to the federation, and therefore the supply chain of the coffee sold to the federation is not visible either. Certified business A’s coffee that is sold to others than the federation with the usage of intermediaries is partly visible by ways of letters and physical visits to her farm, in addition to her certifications, which is her way of aiming to create traceability between her business and her customers. Traceability and visibility created by certifications in Certified business A’s business is not very clear because she knows the actors in her supply chains that she sells coffee to, but not of the customers that her intermediaries sells to. This creates a situation where the information about the product is impossible to be traced and is therefore not visible, and both consumers as well as stakeholders is left without any way of gaining further information about the coffee or if the farm has a certification.

Sustainability of businesses is analysed by using all three aspects of sustainability meaning its economic, social and environmental aspects based on Wognum et al. (2011) these aspects helps all industries to secure the environment for future generations (Wognum et al., 2011). In accordance with Wognum et al., (2011), the impact of products and the processes should not be neglectable towards workers, instead, workers must take part to the decision making, as well as earn fair share of the profits made. Certified business A mentions Colombian coffee industry to be less sustainable when looking at the economic aspect of it. She argues:

“A big chains [companies] can come here and buy a large amount of coffee with a certain quality and due to their large quantitative they are able to get a lower price. People rather look at the price than at the quality.”

Certified business A sees fair trade as a situation where farmers get paid in accordance to their workload and the customers get good quality coffee for a fair price. She belongs to three associations, where in her opinion the quality of the products plays a major role. Interestingly, the Certified business A would not like to be part of these associations but rather sell coffee independently as that would be (financially) more beneficial for her business. Certified business A explains that for the coffee business to grow, a membership in an association is essential. However, the associations in Colombia are in the respondent's opinion weak. It is not the case of Certified business A’s business, but she suggests that the economic benefits of certifications are not always true:

“I know that some people that do not have the same commercialisation strategy do not see any difference after getting their certification, they do not get enough extra pay [50.000 pesos extra] from the corporations that buy their coffee. The investment and the knowledge they need to have versus the extra pay is not worth the work.”
However, Certified business A agrees that having certifications has been of a great advantage, but vicariously as her clients require and appreciate the certification. This shows that companies (and possibly other stakeholders) find traceability and different forms of sustainability important, which confirms Kashmanian (2017) statement concerning the increased interest among different stakeholders for information regarding the origin of a product and a product’s sustainability and environmental impacts. Certifications have had positive impacts on the commercialisation of respondents’ coffee, in gaining new customers and entering new markets, especially abroad. Even if Certified business A recognises some of the benefits given by having the certification, she does not agree on anyone getting it.

“I would not be able to have this certifications if I did the whole process alone. The high price is the reason why a lot of people do not want to get a certification.”

Certified business A explains that the certifications are not only expensive but also challenging to get. She was able to get a certification with a help of the Colombian Coffee Federation because she belong to an association of sixty farmers that gets a type of price discount. Social sustainability of Certified business A is on a high level. Social sustainability is shown as an aim to increase equality between sexes by hiring only women for helping with picking coffee.

“The women have the possibility work at the farm and leave their children with us while working. We are doing this more for the women. They are an important part of the whole [coffee production] process and in my opinion they are better (coffee) pickers”

In accordance to (Wognum, 2011), the impact that products and processes have on people is non-neglectable, which is why products and the processes must be done under socially acceptable working circumstances, and the workers must take part in both the decision making as well as having their fair share in the profits made. In a general level, the Certified business A claims that the socially acceptable working conditions do not exist in the coffee industry in Colombia and therefore, social sustainability does not exist in the industry. In addition, Certified business A argues the overall economic benefits to go for intermediaries and farmers are left outside of these benefits:

“I think that the intermediaries are the ones that benefits the most from the whole process specially since a cup of Colombian coffee is really expensive in other countries and the farmers do not benefit from this. The farmers do not get anything comparing to others [actors in the supply chain] and in some cases they do not have money to buy food.”
Additional Respondent I confirms this by stating that the coffee production is unfair because the intermediaries within the supply chain can take an advantage of the coffee farmers situation as they have no negotiation power regarding the coffee prices and they often sell coffee at a very high price to the customers. He further emphasises:

“For example they [intermediaries] buy one pound of coffee for 3,5 dollars and they sell it for 7,50 dollars. That's more than the double, the producers is the one losing”

Additionally, human health and safety are also an important part of socially acceptable working circumstances (Wognum et al., 2011). Certified business A’s considers her employees to have good working conditions because they have time to rest and eat during the working days, as an example. Even if working hours are longer during the harvest season, the responses of the Certified business A indicate the social sustainability to be high. Certified business A obtained the certifications mainly because she wanted to organise the farm. She mentions Rainforest certification to concentrate on requirements concerning environment, but also social requirements including fair pay, fair treatment and all the knowledge about the requirements have to be known in theory and then applied in practise. Even if Certified business A does not have Organic certification, she produces everything organic.

“Everything that I produce is organic and I am also trying to treat the environment in a good way.”

The challenge of acquiring certifications for Certified business A was changing their old routines of employees.

“For example, we are not allowed to hunt, cut down trees, children are not allowed to work, the payments need to be at the same level, or above of the minimum wage in Colombia.

Environmental sustainability seeks to sustain “global life-support systems” by maintaining sources that provides raw material, water, and energy, it is important that all of the are sustained. The empirical data shows that Certified business A’s business follows environmental sustainability, regardless if her coffee is always traceable and visible, or not (the coffee that she sells to the Colombian Coffee Federation or via intermediaries). Certified business A highlights the role of certifications’ requirements in increasing awareness about environmental practises and issues. The certifications have not only helped to organise respondent’s farm, but also helped the employees of the farm to become more environmentally conscious.
“We reuse and compost products that people usually throw away. The coffee culture has always been to throw away everything that is not needed even if it could be bad for the environment. Inch by inch we are starting to become more aware and about how we affect the environment.”

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Table 3. SCT of Certified business A

5.2.2 Certified business B

Certified business B has knowledge about traceability and can define it. Certified business B mentions the important of the role of relationship management in creating traceability for his coffee business. Customers visit his farm and they have good and continuous contact with each other; both parties having the idea of traceability in mind. Certified business B mentions that the relationship with the customers have evolved only better by time. No actual electronic traceability system is built, but Certified business B asks for customer feedback for the coffee from intermediaries sold abroad, for instance and states:

“They [intermediaries] always provide me with information about the coffee I sold and information about the end customers.”

Only three percent of Certified business B’s coffee is sold to the Colombian Coffee Federation and the coffee sold to the federation lacks traceability as the respondent do not know where the coffee sold to the federation is sold. He points out that therefore the Colombian Coffee Federation cannot assure a good product quality to their customers. Certified business B explains:

“When I sell my coffee to the federation they mix my coffee with others and I can not trace my product.”

Certified business B finds traceability important for many reasons. He connects the customers visits at the farm to traceability as that is how customers can see how everything is done at the farm regarding coffee production. Certified business B argues that traceability via customer visits at the farm impacts on securing good product quality. Van Dorp (2004) states that traceability is a critical aspect when it comes to create consumer awareness regarding the
quality. Certified business B also highlights the importance of gaining proper payment for the product for the continuance of the business and its role for maintaining a good life quality. Moreover, Certified business B connects traceability to the ethics of the business:

“It is also important for me to be able to trace my product. I do not want my coffee to be part of unethical businesses.”

Certified business B adds up that good traceability leads to transparency. Transparency for him means that the product has a good quality and it is traceable but also that the coffee production is made visible to consumers. Kumar, Koehl and Zeng (2016) support this view by stating that traceability can also be seen leading to more transparency as its role regarding quality control and product security to stakeholders is vital due to the global nature of supply chains. However, Certified business B does not have a proper tracing system. Kumar, Koehl and Zeng (2016) add up that implementation of a traceability system is good for companies in the sense that this technology improves their SCT and it controls the integration between all the members. Wognum et al. (2011) supports this and highlights the importance of traceability systems offering possibilities to follow a product and the processes it undergoes. Thus, the traceability is seen on medium level in the same way than in Certified business A´s case because as Kumar, Hallqvist and Ekwall (2017) see it, every partner and stage in the supply chain needs to be part of the information building and sharing in order to achieve a complete traceability. This type of traceability is not possible without a proper tracing system. In addition, Certified business B judges the Colombian Coffee Federation for not being ethical and fair. He claims that the federation only cares about the money because:

“They [Colombian Coffee Federation] mix good and bad quality of coffee together”

Colombian Coffee Federation does not provide traceability for the coffee sold to the federation, and therefore they cannot provide visible information about the coffee in accordance with (theory combining transparency and visibility). Certified business B claims this to be a reason why the coffee production is not transparent in Colombia and therefore the coffee (in Colombia) does not have a good reputation. Visibility in Certified business B´s coffee business is shown by customer visits at the farm and feedback from the consumers. Notably, not all the information is out there to be transferred between all the members in the supply chains. Chan (2003) highlights supply chain visibility to stand for transferring quality information among suppliers, manufacturers, distributors and customers. This type of visibility is not met and therefore visibility in Certified business B´s business is only partial.

Economic sustainability focuses on natural resources such as natural ones but also on having a fair share in the profit between all actors (Goodland, 1995; Wognum et al., 2011).
Certified business B explains his experience when acquiring a certification in the following way:

“Yes it is hard and very expensive. But I think that it is good for us because we learn a lot. All the different requirements give us knowledge but at the same time they are hard to met. They [Colombian Coffee Federation] want you to change a lot of stuff but they do not help you with anything. They are just demanding different thing without facilitating or helping us during the process. They do not care if you have the money or not, they are just expecting you to pay. “

Certified business B finds the role of Colombian Coffee Federation unhelpful and mercenary. Certified business B continues that he gets well paid for his coffee, but the companies that he sells to never ask about his fair trade or other certifications. Moreover, Certified business B considers the workload of farmers unfair in relation to the pay they receive. While the federation through its subsidiaries, the different corporations, have a way of working and political agenda that do not benefit the farmer. This whole process is more beneficial for the Colombian Coffee Federation, “they are the intermediaries and the only ones that benefits from this process. Instead of trying to give more benefits to the farmer. The political agenda is designed in order to benefit the federation as institution.

Certified business B explains that his business have four different certifications that talk about fair trade, but he claims that he still do not fully understand what fair trade stands for. As a matter of fact, he does not care about certifications and he claims that the company exporting his coffee does not care about them either and they do not even ask about the certifications. However, Certified business B states he needs to be aware of the environmental and social aspects, good working conditions, fair salary, good contract etc. He is not allowed to use certain chemicals in farming either. This shows Certified business B has high environmental sustainability and put a lot of emphasis on maintaining the ecosystem. Certified business B explains his motivation for certifications:

“I am conscious and aware of that I should not contaminate the environment. This is something that is personally really interesting for me. I produce high quality coffee and I do not want to contaminate the environment. It is not easy but I do it because I like it. I do not do it for the fair trade phenomena, I do it because I want.”

Contrary to the previous literature stating that traceability is seen as equivalent to certification by consumers (Kumar, Hallqvist & Ekwall, 2017), Certified business B claims that a lot of people do not care about the certifications. However, his environmental awareness have increased after obtaining certifications and he provides an interesting aspect by saying certified businesses to belong to an interest of exporters and customers:
“The certifications have enable me and others to have a better impact on the environment even if it is not profitable for us. We are not the ones earning from this, we do it because we care about our environment. This [certified business] is more a business for the exporters and customers that wants to sell and buy coffee with good conditions.”

The impact that products and processes have on people is non-neglectable, which is why products and the processes must be made and done under socially acceptable working circumstances, and the workers must partake in both the decision making as well as having their fair share in the profits made. Human health and safety is also an important part of this aspect (Wognum et al., 2011). The children of Certified business B’s employees go to school. It is very important for him that the employees have good working conditions and he states that he provides normal working conditions and thus leads to high sustainability in all aspects of sustainability:

“The normal ones [working conditions], I give them all the guaranties that they need, I treat them well, I give them food and I do not hire minors. I give them a good contract and I pay them well. That is good working conditions for me and that is what I give them. .. “I am also aware of that I need to treat my employers in a good way and I also need to give the a fair pay for their work. You become more aware and conscious about the environment, workers conditions etc. My conscious is clean because I know that I am doing a good job.”

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Table 4. SCT of Certified business B

5.2.3 Certified business C

Certified business C’s farm has only recently obtained a Fairtrade certification and all the coffee is sold to the Colombian Coffee Federation. He states:

“I do not know [what happens to the coffee] once we sell it to the federation. We do not know more about it... It would be beneficial to be able to trace the coffee.”
This shows that the coffee of his business is not traceable, but the Certified business C sees traceability beneficial. As stated previously, no visibility exists in the supply chain if the product is not traceable. Certified business C’s coffee has no traceability and therefore the business cannot be visible either. In the case of Certified business C’s business, also sustainability aspects are considered low. Certified business C’s business is under several risks in line with Makower (2015) that argues that businesses are dealing with issues concerning climate change, labor and workplace conditions, ecosystems at risk, product safety and also product risks, and are therefore increasing their attention in order to make their supply chains more visible. The major risks consider the sustainability aspect of the business; even if the farm obtains a Fairtrade certification. Certified business C understands that for obtaining a fair trade certificate, a business must have good product quality and the whole coffee farm needs to be organized according to the requirements set by association behind the certification. In addition, acquiring a certification is seen as an investment to farmer’s business, which often requires lot of resources.

"It is necessary to invest in acquiring a certification, but a benefit of obtaining certificate is that a higher price can be asked for the product, specially Today when the coffee price is low.”

Certified business C explains what fair trade is to him and he is not happy about the economic side of coffee production:

“Fair trade is when you have a reasonable price, today’s coffee price is not fair or reasonable... Owner of this farm to be the one who receives the biggest benefits. We are just here in order to put food on our table... this is not beneficial for us [farmers/ other workers]”

It is important to note that even if Certified business C works and lives in the farm as a manager (responsible farmer), he does not own the farm. Moreover, Respondent C thinks that it is more an advantage to have it because the certification has increased the price of coffee and it has improved the workers conditions, even if the biggest benefits (payments) goes to the owner of the farm. Economy sustainability focus on having a fair share in profit between all actors (Wognum et al., 2011). Thus, Certified business C’s explanation shows that neither his farm nor the coffee industry obtain that aspect, the profit is not equally shared among all the members.

“The corruption is everywhere, I do not think that you can find more corruption than in Colombia. The corruption is not part of Colombia, Colombia is actually part of the corruption.”

Everything is bad when it comes to the coffee industry in the opinion of Certified business C.
“The coffee is to cheap and it cost to much to maintain a farm. The workload is to big for example some small coffee farmers are not able to get enough money so they need to loan money in order to survive. They take loans to fertilize their farm, for [purchasing] basic things.”

Certified business C thinks it is good that foreigners are involved in the coffee business in Colombia as they contribute to better coffee prices and create more jobs for locals. Also, issues in the marketplace have grown according to Respondent C. As an example, weather impacts the production (climate change), which further impacts the income of the coffee farmers:

“The biggest difference has been the coffee production and due to the weather we do not have the same amount of production anymore. We get poorer and poorer and poorer while the coffee gets more expensive for the consumers.”

Coffee pickers have verbal contracts but no security and only the manager has a written contract. Certified business C further explains the big differences between the employees working at the farm. This indicates that the working conditions are rather poor; but also more like a standard in Colombia.

“Yes, I have a fixed salary but the pickers salary is based on how much coffee they collect. We have good pickers that earn a lot during one week but everything is based on how well they work. This is only possible during the big harvest season. Our full time workers are the only ones working today, we do not have pickers season. They get paid in order to work between 4 and 5 days per week (180 000 pesos/ 630 kr per week).”

It is not legal for children to work but some farms have children that are not attending school and instead help their families at the farm. In Certified business C’s farm only men are working and minors are not allowed to be hired. Also women work at the farm during the high-season. Certified business C states that the farm’s impact on environment have improved since acquiring the certification “we are more aware of the environment and we plant a lot of trees.” The traditional businesses are not so organized as the ones with a certification and Certified business C claims the product quality of conventional farms to be lower due to the process is also different and improved when you have a certification. Kashmanian (2017) states that lack of traceability in the supply chain allows producers with a history of human and environmental impacts to continue selling their products without any negative financial consequences. In the case of Certified business C, this could be shown by bad working conditions as stated by the respondent, and the owner of the farm trying to control the manager of the farm by for example, banning him the use of social media so that he won't accidentally reveal sensitive information about the true prices of the coffee and the working condition.
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Table 5. SCT of Certified business C

5.3. Case descriptions of conventional businesses

5.3.1. Conventional business D

Conventional business D has a technical degree from National University of Colombia and wrote the thesis about coffee. Conventional business D bought a farm in Cundinamarca in a former conflict area in 2005. Conventional business D started to grow animals (pigs) until a disease that affected pigs arose which contributed to a downfall in both price and consumption within the food industry. This crisis was the reason behind the decisions to start growing coffee. Conventional business D was part of the rainforest association until last year, new requirements and the lack of fulfilling them was the reason behind the decision to leave the association. Conventional business D do not sell the coffee to the federation.

5.3.2. Conventional business E

Conventional business E is a coffee producer that on top of regular coffee farming owns a small roastery that is located in his farm in Cundinamarca. He roast his own coffee at his farm and sell it to local commercialiser’s in nearby areas. Other farmer roast their coffee at his farm. Conventional business E’s dream has always been to own his own coffee farm and he exchanged his house for the farm with the former farm owner. His educational background consists of a high school degree, a technical degree and one year in the civil engineering program. Conventional business E do not sell his coffee to the Coffee Federation. He has one full time employee and between two and three part time workers.

5.3.3. Conventional business F

Conventional business F is a small coffee producer living in Cundinamarca. She has been working at the farm her whole life, the size of Respondent F’s is six hectares. The educational background is low and she was only able to finish fourth grade, language, writing and reading skills are limited. Conventional business F lives under poor conditions and all her coffee is sold to the Colombian Coffee Federation.
5.3.4. **Conventional business G**

Conventional business G is a small coffee producer living in Cundinamarca. Conventional business G has been working at the farm his entire life and the size of the farm is three hectares. Conventional business G’s educational background is low and he only had the opportunity to finish fourth grade, language, writing and reading skills are limited. Conventional business lives under poor conditions and all her coffee is sold to the Colombian Coffee Federation.

5.3.5. **Conventional business H**

Conventional business H has been working at his family farm in Cundinamarca his whole life. Conventional business H was only had the opportunity to finish preschool, language, writing and reading skills are limited. The size of his farm is quite small, only one and half hectares, Conventional business H sells all his coffee to the Colombian Coffee Federation.

5.3.6. **Respondent II**

Respondent I is an exporter that buys coffee directly from farmers in Huila, Cauca, Tolima and Cundinamarca. He further exports the coffee to Spain, Italy, Vienna, Finland, Canada, USA etc. The educational background of Respondent I is a high school degree. Respondent I used to work with trade commerce before he became part of the coffee industry approximately three and half years ago. Respondent I’s coffee brand has two certifications IGP (Indicación Geográfica Protegida) and Coffee 100% from Colombia.

5.3.7. **Respondent III**

Respondent III is an entrepreneur exporting coffee to Europe and US from Colombia and she owns a cafeteria in US. The coffee of respondent III is grown in Huila.

5.4 **SCT of conventional businesses**

This section investigates SCT of conventional businesses by looking at each SCT variable at time. First, the variable of Traceability is analysed, followed by Visibility and lastly Sustainability (economic, social, environmental) by comparing the conceptual model to the information provided by conventional businesses D, E, F, G and H. Additional data from Respondent II and III is also included in this section. Each businesses’ responses are first analysed separately, following by a table where the results from different variables and their connection to each other are shown based on the SCT model. Also, the intensity (low, medium, high) of each variables’ impact is mentioned. However, conventional businesses F, G and H all have similar backgrounds and to avoid repetition they are partly discussed together. Lastly, the results of each business type is condensed.
5.4.1 Conventional business D

Conventional business D is familiar with traceability and describes it as “a process that is initially initiated at the beginning of the supply chain and whenever you want to have a specific information about the process, you need to be able to get this information access.” Conventional business D connects traceability in accordance with existing SCT literature to visibility gained by access to the information and finds traceability as an important theme:

“I think that traceability is an important theme, it is of great important for the consumer but also for the producer. Traceability helps the producer to standardise their processes and it can also be good when it comes to quality aspects, it is easier for the producer to have a consistent quality. When it comes to the consumers, I think that it is good to have knowledge about origin of the product that they consume and I think this is something important.”

This confirms the role of traceability in quality control and product security for the manufacturers, distributors, end consumers and the specific company (Kumar, Koehl & Zeng, 2016). In addition, Conventional business D has a good relationship with his customers who consists of two different restaurants and a coffee shop that in addition work as his distributors. Conventional business D further explains that the good relationship with the distributors have enabled him to have his own brand. Conventional business D highlights that it is beneficial if the actions of the supply chain are supervised by both the consumer and the producer. However, Conventional business D does not have a traceability system for his coffee and therefore he does not know the end-consumers of his coffee. Conventional business D knows some of his clients in Bogota, but from where the next step of supply chain (meaning clients) is unknown. He also delivers coffee home to people and these are the ones he knows. In addition, Conventional business D sells his coffee via a project called Farmers Market (Mercados Campesinos) and it is impossible to trace where the coffee goes as he does not know these customers either. Conventional business D has a clear interest and understanding for traceability and its importance but he does not have the resources for it. Kumar, Hallqvist and Ekwall (2017) makes it clear that every partner and stage in the supply chain needs to be part of the information building and sharing in order to achieve a complete traceability. This shows that Conventional business D does not to have a transparent supply chain, because traceability is not just important, but initial step for businesses to gain visibility into their supply chain (Kashmanian, 2017). Conventional business D is lacking when it comes to an implementation of a traceable system, which also explains the lack of traceability.

According to Conventional business D, the majority of the regulations in the coffee industry are regulated by the National Coffee Federation. Specific protocol need to be followed if wishing to export coffee. Samples of coffee are needed to be sent to the Colombian Coffee Federation, which indicates that the product quality is controlled, but the federation do not have
any other interests besides the product quality. Conventional business D adds that a permission is needed from the federation if a local company wants to export coffee abroad an membership at the federation is required. Traceability can also be seen leading to more transparency as its role regarding quality control and product security to stakeholders is vital due to the global nature of supply chains (Kumar, Koehl & Zeng, 2016). What comes to the sustainability of Conventional business D’s business, he has one full time employee and he lives at my farm together with his wife and two kids.

“I have a good working conditions for him such as healthcare, social benefits etc. He also gets benefits so he can finance his children’s school. He has the possibilities to have vacation center when he is free and I am also paying for his pension.”

However, Conventional business D used to have a Rainforest certification but had to give up with it because he could not fulfill the requirements of certification regarding temporary workers. This indicates that the working conditions for all the employees are not on equal level. As the literature suggests social sustainability is about how products and the processes must be made and done under socially acceptable working circumstances it is also important that for workers to partake in the decision making (Wognum et al., 2011), while the environment sustainability seeks to sustain and maintain different sources that provides raw material inputs, water, food and energy (Goodland, 1995). This indicates that Conventional business D has medium sustainability in social and high sustainability in environmental aspects, which are given a lot of recognition in his coffee business, even if he further highlights the inequality in the coffee supply chains in general:

“It is also fair that other actors in the supply chain are the ones that earns the same or sometimes even more than the producer, the producers are the ones taking the bigger risk. That is unfair. I think that the intermediaries also have different risks and they have more knowledge about this business that the producer. That knowledge gives them better tools to earn more money than the producer. I think we need to teach the producers how to sell their coffee to a fair price. I can not say that the intermediaries are bad persons but if you compare their risk and what they earn they benefit more than the producers.”

“I do not have an organic farm but I try to work in a agro-ecological way. I am thankful for what the certification has teach me and they gave my the tools and possibility to work in a better way.”

Conventional business D makes a clear difference between the environmental aspects of sustainability between the conventional and certified coffee farms because conventional farms do not have the same conscious and knowledge about for example, environmental protection and
water care. He argues the certifications to work as motivators for this interest and the markets for certified coffee in his opinion are abroad, not in Colombia:

“I still think that it is important to try to find different companies that recognize this type of certifications due to the effort that you actually put on it. It is easier to find companies that recognize this kind of certifications abroad. I am sure that a lot of foreigners are concerned about the environment issues and I think that they worry more than the colombians.”

Regarding the economic sustainability Conventional business D mentions the workload not to be equal between the supply chain members and in his opinion the farmers put the biggest workload into coffee production, and intermediators take extra price for the coffee sold, which Conventional business D finds unfair. He thinks it is important to eliminate as many intermediators as possible. This would mean that the producer would get better pay for its product. This goes in line with Wognum et al. (2011) statement regarding the importance on having a fair share profit between all the actors. Thus, farmers are therefore forced to sell their coffee to a cheap price and while the ones who bought the cheap coffee sells it for a higher price. The profit can be found in that part of the process in the chain.

“When I started my business I also sold my coffee to the federacion or to export companies, my budget balance was always negative and I did not make any profit. Yes we are talking about Colombia, the corruptions is large here (laugh)”.

Summarising, Conventional business D’s business has medium traceability and visibility and the end-consumers won’t therefore be able to know about the pricing related issues, for instance. However, the sustainability related matters have high influence, and especially environmental aspect are in the center of Conventional business D’s business.

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Table 6: SCT of Conventional business D
5.4.2 Conventional business E

According to Kumar, Hallqvist and Ekwall (2017) every partner at each stage in the supply chain needs to be part of the information building and sharing in order to achieve complete traceability. Conventional business E grows, processes and roast his own coffee and sells it commercialiser nearby to small local stores in Quipile. He sells his product to an intermediary and do not know his end consumers. Conventional business E talks about commercialising of his product a lot. This indicates that the traceability in the supply chain ends there, but also his lack of knowledge. Thus, this also indicates lack of visibility since traceability does not exist in the whole coffee supply chain of Conventional business E. Traceability stands for the initial step of businesses to gain visibility into their supply chain (Kashmanian, 2017). Conventional business E further explains that the commercialisation of its product has giving him the possibility to be able to get enough paid and to have a life with quality. Conventional business E thinks that it is unfair that not all of the farmers have the same possibilities, some of them are not even able to have fun or go on vacation. This indicates that Conventional business E try his best to obtain social sustainability, that the processes must be done under socially acceptable working circumstances, but also economic aspects concerning having a fair share in profits (Wognum, 2011). Conventional business E believes that the income of farmer should be improved in the coffee industry and precisely better income is the solution for helping farmers.

“I have one full time employer and two or three that are part time workers. They are here depending on the needs of my farm. I always try to help my workers if something happens when they are working, for example a work accident. I do my best to help and support them.”

In accordance to (Wognum, 2011), the impact that products and processes have on people is non-neglectable, which is why products and the processes must be done under socially acceptable working circumstances, and the workers must take part in both the decision making as well as having their fair share in the profits made. Conventional business E do not have high intensity on economic nor social sustainability because of the lack of his resources. Conventional business E’s business ranks higher in environmental aspects, which are higher than the aforementioned aspects. Conventional business E explains how he is trying to recycle all the different products in his farm, which indicates on a high environmental sustainability. This aspect is about how different environmental resources such as food and water needs to be maintained and sustained (Goodland, 1995).

“We try to recycle all the different products in order to not waste unnecessary material. We try to be as organic as possible and do not use any chemicals in our processes. I am not only producing my own coffee.”
Conventional business E further explains how lack of financial resources are the reason behind not obtaining a certification, even if the coffee that Conventional business E produces is organic. Coffee production means more to him than pure coffee production, he is proud of the environmental friendly way of doing business.

“We sell specialty coffee but some process are organic by forced meaning that farmers do not have the money to buy fertilizer with chemicals and due to that they recycle their own. They are organic due to lack of financial resources and they do not have any organic certification.”

Respondent J supports this by stating that many of the Colombian coffee farmers cannot afford the certification and thus are not given an opportunity to compete against for example, multinational corporations and adds that one of the major problems with exporting coffee in Colombia is that the farmers do not speak English.

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Table 7: SCT of Conventional business E

5.4.3 Conventional business F
The Conventional business F grows her coffee by herself and sells all of it to the Colombian Coffee Federation. The Conventional business F does not have knowledge about what happens to the coffee after it is sold to the federation, and therefore her business has no SCT as her coffee is not traceable or visible. Conventional business F grows coffee only to survive and she finds coffee production and industry generally speaking unethical. Conventional business F adds that she used to get paid better before and the costs for maintaining business were less expensive. Also family used to help out the farmers but nowadays children move to bigger cities and do not want to have anything to do with the farm, which indicates that younger generations do not see a future within coffee growing.

5.4.4 Conventional business G
The Conventional business G grows his coffee by herself and sells all of it to the Colombian Coffee Federation. The Conventional business G does not have knowledge about what happens to the coffee after it is sold to the federation, and therefore her business has no SCT as his coffee
is not traceable or visible. Conventional business G grows coffee to survive and also he finds coffee industry unethical because the coffee farmers income is so little.

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Table 8: SCT of Conventional business G

5.4.5 Conventional business H

The Conventional business H grows his coffee by himself and sells all of it to the Colombian Coffee Federation. The Conventional business H does not have any knowledge about what happens with the coffee after it is sold to the federation, and therefore his business has no SCT as his coffee is not traceable or visible. Conventional business H grows coffee to survive and he finds coffee production unequal towards coffee farmers as their income is so small.

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Table 9: SCT of Conventional business H

5.4.6 Conventional businesses F, G, H

Based on the observations made on the field, the results of the study suggest that Conventional businesses F, G and H have very little knowledge about the coffee industry even if they have worked within the industry their whole lives. This may be due to their low socio-economic status and the fact that Conventional businesses G and H cannot read or write. All three businesses were able to answer only simple questions about their daily lives. None of these farmers even consume their own coffee, but instead they sell it and buy coffee for personal use from other brands because they do not have the time or technical equipments to process their own coffee. Notably, every partner and stage in the supply chain needs to be part of the information building and sharing in order to achieve a complete traceability (Kumar, Hallqvist & Ekwall, 2017). Thus,
traceability is important but also the initial step in order for businesses to gain visibility into their supply chain (Kashmanian, 2017). This statement confirms the lack of visibility in the supply chains of Conventional businesses F, G and H as well as the lack of traceability nor overall transparency for the coffee sold to the Colombian Coffee Federation by the respondents as no information about it after selling it to the federation is available. Additional Respondent II adds up regarding sustainability aspect of businesses in general that all the companies in Colombian and around the world have special formats were they can write everything about social responsibility, ethical and moral standards; they have their human resource department, and the information is provided in different types of documents. In an international level companies need to fill in a format were they agree on not employing minors, being sustainable, paying fair salaries et cetera; which are counted in to be part of business ethics and social responsibility. Unfortunately, according to Respondent II, all this good act stops there, on filling in all different documents and these standards and rules are not applied to the real life. Lastly, Respondent II explains that many of the Colombian farmers are against the Colombian Coffee Federation, and argues that great inequality regarding distribution of resources; in practise, the others receive more help and better price for their product than others.

Help from the government is wished in a form of collaboration regarding fertilizers or other materials used in the coffee production. Conventional business F explains that she and also Conventional businesses G and H (who agree) that all the money earned from the coffee sales is reinvested to the farm because there is no other way to survive. Economic sustainability is about having a fair share in the profits made (Wognum et al., 2011), even if all these Conventional businesses own their farms, they do not have the possibility to create economic sustainability because of their own lack of knowledge about coffee production, but also because they sell their coffee to the Colombian Coffee Federation that pays low price for the product. In accordance to Wognum (2011), the impact that products and processes have on people is non-neglectable, which is why products and the processes must be done under socially acceptable working circumstances, which is not the case for none of the farmer’s, lack of knowledge in combination that they sell their coffee to the Coffee Federation is also the reason here. Thus, all the farmers have low grade when it comes to social and economic sustainability. The environmental sustainability aspect are low here as well for all the farmers, due to their lack of financial resources something that were observed during the field visit they do not have the possibility to renew their farms this contributes to different process that could be bad for the environment. Lack of knowledge regarding different processes that are do not maintained or sustained different resources (Goodland, 1995) is the reason behind their low score in this aspect. It is important to mention that they are not doing this on purpose, these farmers do not have any other option due to their socioeconomic conditions. Even if they would like to improve their environmental impacts, they are not able to do it.
6.0 Cross-Case Analysis

The following section is based on the within-case analysis of certified and conventional businesses and will take a look at the similarities and differences of their SCT. Notably, the cases of all certified farmers are representable for certified businesses and compared to conventional businesses, which in the similar way constitutes of the cases of all conventional farmers.

As the within-case analysis shows, the similarities and differences are found from the comparison of these two business types. The results indicate that the full transparency in supply chain is poor in both businesses. Not all the variables were always found to have any influence on other variables and no company of any of the respondents had high intensity in all SCT variables, which indicates full SCT not to exist within coffee industry in Colombia. Summarising, traceability and visibility of both businesses were clearly connected to each other, but sustainability in its all three aspects can occur only if the requirement of having traceability and visibility as the base of SCT is fulfilled. Below, the differences and similarities of these two businesses in combination with the conceptual framework are discussed.

6.1. Traceability
The coffee sold to the Colombian Coffee Federation by all the certified and conventional businesses is not traceable. Certified businesses A and B have established their own way to create traceability and visibility by creating and maintaining customer relationships by welcoming their customers to visit their farms to ensure a traceable production. Traceability is seen as equivalent to certification by some consumer (Kumar, Hallqvist & Ekwall, 2017). Additionally, Mol and Oosterveer (2015) state that certified businesses are claimed to show traceability of a product and to increase the overall transparency. This is clearly not the case when it comes to Certified businesses A and B if only looking at the impact of certification what it brings to the transparency in supply chains. Wognum et. al (2011) argues that certification can be a way for companies to distinguish their supply chain from other supply, interestingly, the results indicate that when certified farmers sell the coffee through intermediaries, the coffees is not traceable either. It is in interest of authors to know how traceability and visibility are actually ensured even among certified coffee farmers? Certified businesses A and B had similar outcomes and their traceability grade is therefore medium. Certified business C on the other hand had similarities with Conventional businesses E, F, G and H and their lack of knowledge regarding traceability was clear. Therefore, all of them scored low in this variable.

Conventional business E grows, processes and roast his own coffee and sells it commercialiser nearby to small local stores in Quipile. He sells his product to an intermediary and do not know his end consumers. Conventional business E talks about commercialising of his product a lot. This indicates that the traceability in the supply chain ends there, but also he lacks knowledge about SCT and variable traceability. Certified business C sells all the coffee to the
Conventional businesses C, E, F and G. Traceability the whole coffee visibility in supply chain since not exist also the SCT. This knowledge businesses conventional industry. Coffee regarding in more lot resources the first step require case and systems of creation lack not can full visibility systems the why traceability obtained. Business coffee and higher the visibility farmers. Other B have than that certified meaning system, visibility. That of full them achieve SCT, but not none achieve SCT, business D and all certified businesses. None of them knows all their end-customers. Only the businesses that export without intermediaries know their end-customers. Therefore, only certifications are not enough to provide product traceability, knowledge and proper traceability is needed. Hence, this is the reason why none of the business have full traceability.

6.2. Visibility

Traceability is seen as a step one towards a more transparent supply chain. Kashmanian’s (2017) suggests that traceability is essential for companies to gain visibility in their supply chain. Therefore, visibility is the second step for businesses in forming SCT, because visible information can only be obtained when the information is traceable. Also, the information can not be accessible without visible supply chains (Chan, 2003). None of the farmers had a proper traceability system, meaning that none of them achieve full SCT visibility. Certified businesses A, B and Conventional business D have higher visibility grade than the other coffee farmers. Lack of traceability systems is the reason why full visibility can not be obtained. Creation of traceability systems would firstly require lot of more resources and especially in case of the conventional businesses knowledge regarding SCT in the coffee industry. Thus, this also indicates lack of visibility since traceability does not exist in the whole coffee supply chain of Conventional businesses C, E, F and G.
6.3. Sustainability

Even if Certified businesses A, B and C are not fully traceable and visible, and therefore their businesses cannot be fully transparent, the sustainability aspects of the businesses have some differences. Certified business A is found to fulfill the criterion on economic, social and environmental sustainability, and business A’s motivation for obtaining certifications is primarily better payment for the products even if she obtained the certifications to have a more organise business in the first place. Certified business B is also found to fulfill the criterion of sustainability regarding all social, economic and social aspects, but his major motivation for obtaining certifications is his personal interest and awareness towards environment. Certified business C’s business, unlike the Certified businesses A and B have low sustainability in all economic, social and environmental aspects, even if he states the working conditions and environmental awareness have improved after acquiring the certification.

Even if no full SCT was identified in the research, the comparison showed certified businesses to fulfill the requirements of SCT better than conventional businesses did in accordance with the current literature comparing these two type of businesses. Certifications benefit the businesses most regarding environmental aspects, but also other two: social and economic aspects of sustainability were better noted among businesses with certified coffee farms. Certified businesses had better knowledge and awareness about sustainability issues than conventional businesses. This confirms the findings of existing studies by Stranieri, Cavaliere and Banterle (2017) who state that certifications are seen to improve environmental and socially responsible practices of businesses. However, Conventional business D claims to have good working conditions for his employees but he could not maintain the certification because he could not fulfill the requirements of Rainforest certification. This indicates that the working conditions are not on the same level. Conventional business D is highly environmentally conscious coffee farmer even if he currently has a conventional coffee business. He mentions benefits of certification for creating awareness and knowledge about especially environmental issues. However, the sustainability related matters have high influence and especially environmental aspect are in the center of Conventional business D. Compared to the other conventional businesses, it becomes clear that Conventional business D’s background of previously having a certification had a great impact on his knowledge regarding sustainability and SCT.

Conventional business E believes that income of the coffee farmers should be improved to provide them with a normal life with dignity and for example, proper healthcare. In addition, better income is suggested to be a solution for helping the coffee farmers from both conventional and certified businesses’ sides. Conventional business E do not have high intensity on economic nor social sustainability because of the lack of resources even if he has interest in improving especially social and economic aspects of sustainability, but he does not understand and/or rank the importance of visibility and traceability high. Conventional business E’s business ranks higher in environmental aspects, which are higher than the aforementioned aspects. Conventional
business E explains how he is trying to recycle all the different products in his farm, which indicates on a high environmental sustainability. This aspect is about how different environmental resources, such as food and water needs to be maintained and sustained (Goodland, 1995). Moreover, Conventional business E’s business sells specialty coffee by forced meanings because they cannot afford to purchase fertilizer or other chemicals and that is why the coffee is organic due to the lack of resources. Conventional business E further explains how lack of financial resources is the reason behind not obtaining a certification even if the coffee that Conventional business E produces is organic. Coffee production means more to him than just coffee production: he is proud of the environmental friendly way of doing business.

Conventional businesses F, G and H share similar background and the way they conduct their business. All three businesses have less knowledge about coffee production and none of them knows what for example, traceability or SCT stands for. Conventional businesses F, G and H find coffee production unfair based on their personal experience about not receiving much back for the coffee sold in relation to the workload done for growing and processing the product. Only Conventional business F of these three businesses knows how to read and write to a certain level (limited skills). As they all sell their coffee to the Colombian Coffee Federation, there is no traceability and visibility, or SCT overall.

The results of the study show that there is no traceability nor overall transparency in the supply chains for the coffee sold to the Colombian Coffee Federation. It is important to mention that certified businesses are mostly having medium impact of SCT compared to conventional businesses, but no business in this study have high SCT because of the lack of resources, such as proper traceability systems and knowledge regarding SCT. This is applicable to all coffee sold for the Colombian Coffee Federation based on the answers of interviewees representing certified businesses. The findings support the applicability of SCT model by showing that traceability is seen as the step one towards a more transparent supply chain, Kashmanian (2017) suggests that traceability is essential for companies to gain visibility in their supply chain. Therefore, visibility is the second step for businesses in forming SCT, because visible information can only be obtained when the information is traceable. None of the businesses taken part of the study had high traceability nor visibility. Sustainability is seen as the step three in the SCT Model as without having full traceability or visibility in supply chain, full transparency is not possible, as the findings showed. The SCT model suggests that traceability and visibility are interconnected, while sustainability is built on the latter two variables for gaining full SCT. Thus, SCT does not exist without all the variables being embedded within the business.
7. Conclusion

Summarising and reflecting on the empirical results, the conclusion of this research is presented along with the aim and the research question of this study. The managerial implications are presented, following the suggestions for future research.

7.1. Contributions to the literature

This research examined the SCT of certified and conventional businesses in the coffee industry in Colombia. For investigating the matter, a research question was established to investigate how SCT differs between certified and conventional businesses. A qualitative field study including interviews and observations was conducted in order to carry out the comparison between these two types of businesses. The comparison of certified and conventional businesses was carried out as a case study in the coffee industry in Colombia. This field study belongs to Minor Field Studies and is supported by a scholarship from SIDA.

As a result of the noticeable lack of existing research within SCT of certified and conventional businesses, a conceptual framework was built, which resulted in a conceptual model of SCT variables. SCT in this study is understood as a combination of traceability, visibility and sustainability reaching the social, economic and environmental aspects of sustainability. Therefore, the chosen three variables, traceability, visibility and sustainability, create a base for the SCT model by being linked to, and influencing on each other with three levels of intensity, which are namely low, medium and high intensity levels. The level of SCT and its different aspects and intensity are thus evaluated by the SCT variables. Notably, all the variables influence on each other in perfect SCT and because of this, SCT does not exist without all the variables being embedded in the business. These variables were identified based on the existing SCT literature and were applied to the case, which included in total three certified and five conventional businesses.

The most obvious finding to emerge from this study is that no full transparency exists on certified and conventional supply chains. The evidence from this study suggests that certified businesses are more organized by their business activities compared to conventional businesses and they differ greatly in higher grades of sustainability. The environmental aspects of the sustainability variable is the only aspect of sustainability that is clearly impacted positively as a result of obtaining a certification. Conventional businesses did not only have less SCT comparing to certified ones but they also had lower, or no knowledge, regarding the different variables and their own industry, but most importantly, the lack of mutual traceability between the actors in supply chain created premises for the lack of SCT. As the results of the study show, without traceability, no accessible and visible information can exist, and without both: traceability and visibility, economic, environmental and social sustainability cannot be built on SCT. This study thereby recognises traceability and visibility to be interconnected as part of SCT. Lastly, the SCT model is found applicable to all businesses due to the generalisability of
the variables and therefore this study contributes to the academic literature about certified and conventional businesses SCT.

7.2. Managerial implications

There is an existing gap between the academic and the managerial literature as this study earlier implied. The findings of this study bridge the gap between the academic and managerial literature and the theoretical knowledge of SCT can therefore be applied in practice. Additionally, three different SCT variables and their specific influences were identified: variables that can be utilised for investigating SCT of any type of business as the empirical evidence from this study shows, the SCT variables are not only applicable to conventional, but also to certified businesses.

7.3. Limitations

Regarding the limitations of this study, parts of the analysis are subjective to the authors’ opinions and the sample size might be insufficient in reaching the point of measurement, as larger samples and a greater number of certified businesses would have resulted in more in-depth information and variation regarding findings. Furthermore, the analyses of the research concentrate only on two type of businesses in Colombia. Another limitation is the lack of previous research about the explicit research regarding the specific topic of this study. However, this is seen as an opportunity to contribute to new theory. The interviews were held in the respondents’ native language, Spanish and chances for there to be misunderstandings regarding different questions is somewhat possible. As only one of the authors speaks fluent Spanish, a minor disadvantages might occur when the data was gathered. Because of the given research circumstances, namely the geographical and financial limitations, some of the interviews were held via Skype video call. Thus, this prevented the authors to carry out direct field observations with all interviewees. The fact that this study does not contribute to the the technical side of the traceability and SCT is also considered as a limitation of the study, but this is something that could be investigated in future research.

7.4. Future research

Future research is first most recommended for confirming the applicability of the conceptual model of this study. SCT variables could be tested again but in a long term with more in-depth data about businesses. It would be interesting to find out if and how beneficial this conceptual model is for other type of businesses as well as in other industries. Also, other regions in Colombia and other countries than Colombia are welcome to be investigated for measuring if SCT variables are applicable to other geographical areas as well. It is in interest of authors to know how traceability and visibility are actually ensured when there is lack of technology because certified businesses’ products are argued to be traceable and their businesses to be more transparent by many organisations and scholars: This study suggests the opposite. Lastly, the
empirical data of this study showed that all the businesses examined in this research were SMEs and this is something that could be developed within the area of SCT in the future research.
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Appendices

Appendix A: Interview protocol - English

Interview guide

1. Who are you?
2. What do you do?
3. Where do you work?
4. Can you describe your career and education?
5. Do you export coffee?
6. Do you run other businesses besides the coffee business?
7. Are you self-employed?
8. What is the number of your employees?

Fair trade:

9. What is fairtrade for you?
10. What do you think that fair trade means for the (other) colombians?
11. What kind of working conditions do your employees have?
12. Do you think that there is a big difference between your employees and their different tasks, considering their working conditions, salary and unequal payments?
13. Who are your employees and what kind of background do they have (age, gender etc.)?
14. Do children help their families with work in the farm (do your children go to school (if any) and do children, in general go to school in Colombia? How about your employees’ children?
15. What do you consider as good working conditions?
16. What do you consider to be bad working conditions?
17. How are the working conditions in the coffee industry in Colombia in general?
18. Do you think that your employees have good working conditions?
19. Is it important for you that your employees have good working conditions?
20. What are the core values of your business?
21. Do you think that the children that help their families out are having the possibility to attend to school?
22. What kind of education do you require from your employees?
23. What, in your opinion, could improve locals opportunities in Colombia?
24. What, in your opinion, is not fair or ethical within the process when producing coffee (including the whole process from planting the seeds to selling it in the stores, cafeterias in Colombia or in cases when the coffee goes outside of Colombia (exports)?)
25. Does somebody benefit more than others in this process?
26. What do you do when you have a bad coffee harvest?
27. Could you describe a regular day at your work?
28. When do you start working daily?
29. When do you end your working day?
30. How many employees do you have including the pickers?
31. Do you get help from anyone else in your family? If you have kids how old are them?
32. Do they attend to a school nearby?
33. (Can you explain the export process of your coffee, if you export?)

**Environmental concerns:**
34. Do you know what impact your coffee has for the environment? If yes, what are these impacts (positive/negative) including the whole coffee process from the beginning of coffee growing process to once your coffee is sold forward?

**Traceability:**
35. Do you know what traceability stands for?
36. Is your coffee traceable?
37. If yes, how? If not, why?
38. Could the lack of traceability in your personal experience have influence on e.g. product quality? On any other things like that? Has it ever had influence in such things, like (quality, health of consumers etc)?

**Anti corruption:**
39. Is there corruption in Colombia in general? How does it show?
40. Is the coffee industry in Colombia influenced by corruption and what is its influence to locals?
41. Is your business influenced by corruption directly or indirectly?

**Insights to general business ethics:**
42. Can you name anything particular right or wrong in the Colombian coffee industry?
43. Division of workload? Effort of different members in the supply chain (does it differ between the members)?
44. Is there anything right and wrong having foreigners being involved in the coffee industry in Colombia? What is government's role in this in your opinion? (what Colombians think vs. others)?
45. Could you name some of the laws and regulations specific to the coffee industry in Colombia set by the government?
46. Have any of the latter issues changed to better or worse over time? Have the market (marketplace) changed anyhow? Society? What, how, who has influenced?
47. What type of relationships exist in your supply chain between different members? (positive and negative things regarding the relationships. Is there anything to be improved concerning the relationships? What is the length of the relationships?

48. Are there differences between these relationships? Have these relationships changed over time?

49. Are all the members in the supply chain equal to each other? If yes/ no, how does that show.

50. What is business ethics to you? How would you define business ethics and how does it show or does not show in your own business? How would you like it to show?

51. Does business ethics show in some different way in others’ businesses (in your opinion)?

Questions to farms with certification

52. What is Fair trade for you?
53. What are the requirements that are needed in order to get a certificate?
54. What are the biggest differences between traditional businesses and the certified ones?
55. Why did you choose to become certified?
56. What are the benefits of becoming a certified coffee grower?
57. Are there any disadvantages of becoming a certified coffee grower? If yes, what are these disadvantages?
58. Can anyone become a certified coffee grower?
59. Can you come up with any reasons why some farmers would not like to become certified coffee growers?
Appendix B: Interview protocol - Spanish

1. Quién eres?
2. A qué te dedicas o cuál es tu profesión?
3. Dónde realizas tu trabajo?
4. Cúal es tu carrera en la industria de café? Ó en que desempeñas en esta industria?
5. Exportas café?
6. Realizas otros negocios aparte del café?
7. Eres independiente?
8. Cuántos empleados tienes a tu cargo?

Fair trade:
9. Que es para ti el comercio justo?
10. Qué crees que significa para los colombianos?
11. Cual son las condiciones que tienen los empleados en tu finca?
12. Crees que existen diferencias en los diferentes cargos en tu finca?
13. Que clase de empleados tienes en tu empresa o finca con respecto al género, edades?
14. Si tienes menores de edad, tienen ellos acceso a la educación?
15. Que son buenas condiciones de trabajo para ti?
16. Que son malas condiciones de trabajo para ti?
17. Como son la condiciones de trabajo en la industria del café en Colombia?
18. En tu opinion a ti te parece que tus empleados tienen buenas condiciones de trabajo?
19. Es importante para ti que tus empleados tengan buenas condiciones de trabajo?
20. Cuales son los importantes valores de tu finca?
21. Crees que en Colombia los niños que ayudan a las familias trabajando tienen la posibilidad de asistir al colegio?
22. Que nivel de educación requieren tus empleados para un determinado cargo en tu empresa o finca?
23. En tu opinión cómo se podrían mejorar las oportunidades de trabajo para los colombianos?
24. En tu opinión qué crees que podría entenderse como un proceso poco ético o injusto en los procesos de la producción del café (incluida el proceso desde cuando se planta la semilla)
25. En tu opinión, quienes se benefician más en este proceso?
26. Siempre sale buena cosecha de café o en algún momento esta se pierde?
27. Cómo es un día en tu trabajo?
28. A qué hora inician?
29. A qué hora termina tu jornada de trabajo?
30. Cuántos empleados tienes a tu cargo incluyendo los recolectores?
31. Alguien más en tu familia te ayuda? Si tienes hijos qué edades tienen?
32. Tienen los niños el colegio cerca?
33. (Podrías explicarnos el proceso desde el inicio hasta el final cuando este es exportado en caso de que sea así?)

**Environmental concerns**
34. Qué impacto crees que tu producción de café tiene para el medio ambiente? Sabes los impactos?

**Traceability**
35. Tu sabes que es trazabilidad? Localizar el producto
36. Tu sabes que es lo que pasa con tu café cuando lo vendes? Quien es el consumente?
   Puedes localizar el café?
37. Sí: Como? No: Porque?
38. Tu crees que la falta de poder localizar tu producto puede influenciar la calidad del producto, la condiciones y salud de los empleados?

**Anti-Corruption?**
39. Te parece que hay corrupción en la industria del café de Colombia? Corruption que afecta a la gente local, tus vecinos por ejemplo?
40. Te parece que la corrupción afecta tus negocios?
41. En general te parece que el país tiene corruption?

**Insights to “general ethics”:**
42. En forma éticas que está bien y qué está mal en los ojos de los colombianos? Qué es correcto o incorrecto con respecto a diferentes aspectos en la industria del café?
43. Te parece que hay diferencia en la división de trabajo en los diferentes procesos del café?
   Por ejemplo, sembrar, collectar, vender etc.
44. Qué es tu opinión de la involucración de empresas extranjeras en la industria del café?
45. Hay leyes y regulación especiales para la industria del café?
46. Han habido cambios en el mercado del café? Cambios en la sociedad?
   Si tu respuesta es Sí → Que ha cambiado, como y quien o que ha influido estos cambios?
47. Cual es tus diferentes relaciones con los otros distribuidores en tu cadena del café? Te parece que hay algo que funciona bien o algo que se puede mejorar? Y cuánto tiempo ha tenido estas relaciones
48. Hay diferencias en esta relaciones, han cambiado sobre el tiempo?
49. Como es el rol de los diferentes miembros en la cadena de tu café?
50. Que son negocios éticos para ti? Te parece que tu finca tiene negocios éticos? Te hubiera gustado tener mejor éticos de negocio en tu finca?
51. Tienes un ejemplo de un negocio que tiene un negocios éticos?

**Questions to farms with certification**

52. Que es para ti el comercio justo?

53. Qué procesos y requerimientos se necesita para obtener y mantener el certificado de comercio justo?

54. Cuál cree usted que es la diferencia entre las fincas que lo tienen a las que no?

55. Por qué decidiste certificar tu finca?

56. Qué ventajas tiene obtener el certificado? What are the benefits from getting a certification?

57. Existe alguna desventaja?

58. Puede cualquiera obtener este certificado?

59. Por qué crees que la gente no quiere obtener el certificado siendo éste posible de adquirir?
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