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Sustainability of Chocolate Production in Ecuador:

Drivers, Barriers, and Local Factors

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ABSTRACT

The aims of this study are first, to identify the drivers of and barriers to the sustainability of chocolate production in Ecuador, one of the Andean countries in Latin America. Second, the study aims to investigate how local factors determine the approach to sustainability in this context. The analysis of two exemplary cases in this industry shows that sustainability drivers and barriers reveal the local factors that derive two approaches to sustainability in Ecuador's chocolate production: one that prioritizes the institutional, social, and cultural dimensions, and the other that focuses on the economic, cultural, and institutional dimensions.

RESUMEN

Los objetivos de este estudio son, en primer lugar, identificar los impulsores y las barreras para la sostenibilidad en la producción de chocolate en Ecuador, uno de los países andinos de América Latina. En segundo lugar, investigar cómo los factores locales determinan el enfoque de la sostenibilidad en este contexto. El análisis de dos casos ejemplares en esta industria muestra que los impulsores y barreras para la sostenibilidad despliegan los factores locales que derivan de dos abordajes sobre la sostenibilidad en la producción de chocolate en Ecuador: uno

que prioriza las dimensiones institucional, social y cultural, y el otro centrado en las dimensiones económica, cultural e institucional.

RESUMO

Os objetivos do presente trabalho são: primeiro, identificar os propulsores e as barreiras à sustentabilidade da produção de chocolate no Equador, país andino da América Latina. Em segundo lugar, pesquisar como os fatores locais determinam a abordagem à sustentabilidade neste contexto. A análise de dois casos emblemáticos deste setor mostra que os propulsores e as barreiras à sustentabilidade apontam fatores locais que determinam duas abordagens para a sustentabilidade da produção de chocolate no Equador: uma que prioriza as dimensões institucional, social e cultural, e outra que enfoca as dimensões econômica, cultural e institucional.

KEYWORDS

Sustainability; supply chain management; Latin America; Ecuador; chocolate production

Introduction

Sustainability in supply chains worldwide faces different challenges in geographical regions where systems are complex. Sustainable Supply Chain Management (SSCM) has gained attention in developing countries, and the respective research has aimed to gain an understanding of the motives behind the adoption of sustainability innovations, through new mindsets, comprehensive changes in the business model, and innovative practices in developing regions, such as Asia and Latin America (Silvestre, 2015b). Along these lines, according to Walker et al. (2008), 'sustainable procurement' refers not only to buying but also to supplying sustainably. The sustainability adopted at the producer's xx and market supply will be studied further. Specifically, we will examine SSCM in Latin America considering factors beyond the economic, environmental, and social dimensions of sustainability, according to Fritz and Silva (2018); we do so, because of the institutional and cultural particularities in the region that prevent companies from developing stronger business models and supply chains. Such particularities include the lack of infrastructure, poverty and security issues, local conditions, routines, and institutions (Blanco & Paiva, 2014; Fritz & Silva, 2018).

The traditional SSCM literature has focused on establishing strategies by proposing methods and tools for consolidated companies and supply chains in the so-called 'developed'

economies (Gold et al., 2010; Yawar & Seuring, 2018), where. In this context, generally large and/or multinational companies determine SSCM strategy and exert influence on the upstream and downstream flows to reinforce their commitment to sustainability, sometimes in tandem with a partnership or collaborative approach (Gold et al., 2010). Nonetheless, several authors have questioned the appropriateness of traditional concepts in specific contexts or industries (Ciccullo et al., 2018; Fritz & Silva, 2018; Silvestre, 2015a).

The food and beverage sector faces challenges concerning sustainability, food security, ethical sourcing of raw material, and increased demand for healthier products (FAO, 2010; Gold et al., 2013; Rodríguez et al., 2016). Firms in the sector also need to deal with issues related to sustainability or CSR, such as responsible use of natural resources, responsible energy and water consumption, labor standards, and supply chain management (Puggioni & Stefanou, 2019). The literature has noted how multinationals provided cooperation through education, technical assistance, implementation of Good Agricultural Practices (GAP), and training to conduct quality checks. Thus, it is necessary to understand sustainability in supply chains as a practice that facilitates companies to change their strategic way with inter- and intra-organizational practices (Silva & Figueiredo, 2020). These initiatives result in a combination of SSCM and BoP (bottom of pyramid) approaches, focused on the double bottom line (social and economic), and they could be transferred to other regions of the world or business fields (Gold et al., 2013).

In particular, the study of SSCM is rarely applied to Latin America, despite the region's potential for economic development (Martínez & Kalliny, 2012). The Andean region especially has scarcely been studied, although its cultural background involves traditions influenced by climate conditions, history, social interactions, and routines. Ecuador, one of the Andean states[1], is rarely encountered in sustainability research. Ecuador, and the greater Andean region, have specific characteristics in terms of the geographic and climactic requirements influencing the type of crops grown; the industrial context, populated with micro and small companies; and the cultural and historical influences in business management (Silvestre, 2015a). In this context, the food processing industry is developing as an upgrading strategy from raw material or commodity-producing and exporting to value-added processing and manufacturing, according to Ecuador's government plan (SENPLADES, 2017). Cocoa is one of the main export crops,

[1] Andean states: Colombia, Ecuador, Peru, Bolivia

and Ecuador is a top-10 producer according to FAO (2019) statistics and the Ecuadorian Institute of Statistics (INEC). Indeed, cocoa represents 39% of the national production and land use (INEC, 2019). Approximately 50 formally constituted companies in the country process cocoa into chocolate bars or semi-finished by-products (such as cocoa paste, cocoa butter), exporting up to 778 million USD in 2018 (ProEcuador, 2020).

Considering the interest and opportunity for further SSCM research in Latin America, especially in the Andean region, with its unique conditions, our study intends to contribute to SSCM theory and practice by identifying the motives and challenges of sustainability implementation in this industrial context. Additionally, this study aims to analyze local factors in the implementation of sustainability in the cocoa processing industry, thus seeking to address the following research questions:

RQ1. What are the drivers and barriers to implementing SSCM in the chocolate production industry in Ecuador?

RQ2. How do local factors determine the approach to SSCM in the chocolate production industry in Ecuador?

This research focuses on the cocoa processing and chocolate manufacturing industry, that is, chocolate production in Ecuador, studying two companies representative of this industrial sector in the country. The companies produce chocolate bars and semi-processed products in different configurations, using certified or non-certified cocoa and target different consumption markets. Our findings reveal that the adoption of sustainability in this context is motivated by the companies' inherent social and environmental concerns, pressures from stakeholders, and the potential economic benefits that sustainability could bring. Regarding the barriers, the companies are challenged mainly by implementation costs and a lack of interest in the domestic market. Therefore, their sustainability approach is determined by how different types of companies deal with various factors, especially institutional and cultural.

The paper is organized as follows: first, the conceptual background is set around the drivers of and barriers to sustainability and supply chain management, in particular, in Latin America. Next, we describe in detail the research context. The research methodology is then described, followed by the case analyses; finally, the discussion and conclusions are presented.

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Conceptual background

In this study, we analyze two main sets of constructs. The first one refers to the drivers of and barriers to SSCM in Latin America, as summarized in Table 1. The second set of constructs regards the local factors that influence how sustainability is approached in the cases under study (Table 2).

SSCM drivers and barriers

The implementation of sustainability in the supply chain responds to different motivations, according to corporate strategies and objectives. We consider the two main strategies for SSCM, which Seuring and Müller (2008) labeled "supplier management for risks and performance" and "supply chain management for sustainable products," respectively. Both require analysis in terms of the relationship withs suppliers and how incentives and barriers could hinder or promote SSCM. Moreover, Ciccullo et al. (2018) discuss the integration of the three paradigms, agile, lean, and sustainable, by integrating sustainable and traditional supply chain paradigms into a set of practices to implement.

Several authors have studied the drivers behind SSCM. Market access is one of the main drivers of the implementation of sustainability practices, along with the triple bottom line (TBL) and the adherence to specific certifications that help attain broader markets (Jia et al., 2018; Rodríguez et al., 2016; Walker et al., 2008). Additional drivers are mentioned in the literature, such as the search for increased profitability (Bloemhof et al., 2015; Ramachandran et al., 2012; Seuring et al., 2019); enhanced company reputation (Seuring et al., 2019; Walker et al., 2008; Wycherley, 1999); social and environmental concerns (Seuring et al., 2019; Walker et al., 2008); and stakeholder pressure (Gold et al., 2010; Matos & Silvestre, 2013; Perez-Aleman & Sandilands, 2008; Rebs et al., 2017; Rodríguez et al., 2016; Seuring et al., 2019; Yawar & Seuring, 2018). Regarding stakeholder pressure, according to Matos and Silvestre (2013), managers should consider the interests of the stakeholders within a supply chain and make decisions based on these interests. Therefore, legitimacy and trust are built by listening to stakeholders' voices and concerns. Moreover, the literature shows that incentives and pressure from external stakeholders, such as customers, government, or media, are the points of departure for SSCM (Matos & Silvestre, 2013; Seuring & Muller, 2008).

On the other hand, several barriers to the adoption of sustainability are also recognized in the literature, such as (a) implementation complexity and the resistance to implementing SSCM within organizations (Bloemhof et al., 2015; Jia et al., 2018; Seuring & Muller, 2008; Silvestre, 2015a; Walker et al., 2008); (b) implementation cost (Blanco & Paiva, 2014; Jia et al., 2018; Seuring & Muller, 2008); (c) sustainability requirements as a barrier of entry (Silvestre, 2015b.; Khalid et al., 2015; Jia et al., 2018); (d) limited capabilities and know-how (Jia et al., 2018; Silvestre, 2015b); (e) missing or insufficient communication in the supply chain (Khalid et al., 2015; Seuring & Muller, 2008); (f) international regulations (Jia et al., 2018; Rodríguez et al., 2016; Seuring et al., 2019; Walker et al., 2008); (g) consumer relations (Gold et al., 2013; Seuring et al., 2019; Walker et al., 2008); and (h) limitations in the local/domestic market (Jia et al., 2018; Khalid et al., 2015; Rodríguez et al., 2016; Silvestre, 2015a; Silvestre, 2015b; Walker et al., 2008).

Along these lines, Tanco et al. (2015) explained that there are many factors hindering their supply chain (SC) performance, especially in terms of government policies and workforce availability in Latin America. The authors recommend further research with a focus on developing strategic methodologies and guidelines to overcome barriers for better business performance. According to Tanco et al. (2015), barriers to sustainability are understood as difficulties or factors that significantly impact SC performance. Hence, in order to achieve SSCM, increasing motivation and reducing the conditions that create barriers are required. Many authors (Blanco & Paiva, 2014; Bloemhof et al., 2015; Jia et al., 2018; Seuring & Müller, 2008; Walker et al., 2008) have mentioned these barriers and drivers; see Table 1 for a summary.

[Table 1. HERE]

Understanding the drivers and barriers also presents an opportunity to broaden our knowledge of sustainable decision-making processes. Latin America is an important contributor to the global economy and is gaining increasing scholarly attention, not only due to its rich sources of data for research (Martínez & Kalliny, 2012). As such, the drivers and barriers in this region must be considered in relation to the specific conditions that affect the implementation of SSCM.

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SSCM in developing markets: Latin America and the Andean region

Researchers have refined and applied the base-of-the-pyramid (BoP), (an expression first coined by Prahalad and Hammond in 2002), by showing that BoP business strategies contribute to sustainable development by reaching out to external partners who are willing to generate changes with radical innovation, cost-saving opportunities, and untapped markets offering new customers. This creates a win-win scenario, where the poor would increase their welfare, and companies would increase their profit (Gold et al., 2013; Khalid et al., 2015; Rodríguez et al., 2016). For instance, Gold et al. (2013) analyzed food projects in the BoP as an option to achieve SSCM and as a path to the triple bottom line (TBL) approaches for organizations worldwide. Furthermore, sustainable supply chains in emerging economies can become challenging if the contextual factors are not completely understood. In such an environment, decision-making processes focused on sustainability run the risk of being erratic (Silvestre, 2015a).

According to Jabbour and Jabbour (2014), when it comes to addressing sustainable development, it is important to consider the region of study and the social and environmental aspects involved, to understand the possible opportunities and restrictions in management. The authors projected a wide opportunity for research in Latin America, which has similar problems to other regions in the world, such as the role of government; controlling CO2 emissions; clean energy generation; and institutional economic, social and environmental issues and changes.

Similarly, Blanco and Paiva (2014) recognized that the Latin American region is underrepresented in SCS research. Latin America is a diverse place in terms of geography, cultures, highly urbanized populations, and climates. Even though Latin America is a potential market to develop, the search for sustainable supply chain management must include businesses and academics in the region who are willing to leverage its future growth (Blanco & Paiva, 2014).

In the same vein, Silvestre (2015a) mentioned that each SC goes through a single trajectory based on collaboration and learning processes where innovation matters. This shows the impact of SC dynamics in emerging economies and urges consideration of regional characteristics, such as pressing social issues, high levels of corruption, poor infrastructure, and an 'informal' economy. Hence the need for further information in Latin America, since most of the literature on sustainability in the supply chain refers to regions in Africa, Asia, and, in South America, predominantly Brazil (Rodríguez et al., 2016; Silvestre, 2015a).

According to Fritz and Silva (2018), the main motives for the implementation of SSCM in Latin America are innovation, risk management, trust, power, working conditions, traditions, and culture. These factors are similar to developed countries, except for managing trust, power, traditions, and culture. Specifically, according to the authors, the cultural factor refers to local traditions that could influence the meaning of sustainability in the region. The institutional factor, on the other hand, implies the political environment that could foster or hinder sustainable practices in the region (Fritz & Silva, 2018). Following these arguments, studies in Latin America have the potential to help in the path to understanding SSCM.

In particular, the food industry in the Andean region of South America is characterized by local and traditional agricultural practices, land used for agricultural production, dependence on agriculture as the main source of income for economic and social development, smallholdings, sustainable management of natural resources, population growth, and access to technology, among others. These features can shape the strategies that companies deploy for growth and sustainability (FAO, 2019).

Hence, some aspects influencing the adoption of sustainability in developing countries are related to (a) cultural factors that consider traditional values and collaboration systems; and (b) institutional factors, such as the particular challenges that management faces in this type of context (Jia et al., 2018); the local market infrastructure (Blanco & Paiva, 2014; Jia et al., 2018); and specific international market requirements (FAO, 2019; Jia et al., 2018) that put pressure on local producers. Along this line, Fritz and Silva (2018) mention traditional and institutional factors that should be studied when it comes to sustainability in Latin America. According to Jia et al. (2018) and Abreu et al. (2012), such factors determine the adoption of SSCM in different national systems. In this regard, Rodríguez et al. (2016) suggest alliances between public organizations, the private sector, and NGOs in developing countries that might relieve and facilitate operations. The main cultural and institutional factors influencing sustainability adoption in developing countries are presented in Table 2.

[Table 2 HERE]

Context of the study: Chocolate production in Ecuador

This research aims to study the approach to sustainable supply chain management in Latin America, focusing on the food industry in Ecuador, particularly, chocolate processing and production. This study context provides an interesting scenario for analyzing the particular

features of SSCM, given the geographical environment of the cocoa beans production, the configuration of Ecuador's processing industry, and the market demands of a middle-income country.

The Andean Region is populated with a high proportion of indigenous communities, which are well organized and are maintain their ancestral farming rituals, developed over hundreds or thousands of years (Halloy et al., 2005). Andean agriculture is one of the "globally important agricultural heritage systems," (GIAHS) according to the Food and Agricultural Organization of the United Nations (FAO, 2020). Furthermore, "high native biodiversity, a culture of careful observation, selection and exchange" (Halloy et al., 2005) along with the tribute to mother earth (*pachamama*), lead to solidarity schemes and the development of land management strategies tightly linked to sustainable practices in the agri-food industry. They, in turn, develop the region's identity (FAO, 2020; Halloy et al., 2005).

Ecuador is said to be the largest fine or flavored cocoa producer and exporter in the world (Ecuador and chocolate, n.d.) and is a top-10 world cacao producer, according to FAO statistics (FAO, 2019). As much as 75% of cocoa production in Ecuador is allocated to fine chocolate production (Anecacao, 2015). Its geographical location and biological resources produce fine cocoa with a high level of purity and unique aroma. Nowadays, cocoa production and exports in Ecuador are worth up to 700 million dollars (Anecacao, n.d.; Ecuador and chocolate, n.d.). According to INEC (2019), cocoa production represents a traditional export crop that accounts for 39% of the total agricultural production in Ecuador.

Recent governmental policies aim to shift the agricultural business from raw material provider to finished goods producer (SENPLADES, 2017), thus evolving from cocoa beans exporter to chocolate producer and exporter. In this context, new companies are born and old ones are upgrading their business operations. In recent years, the industry is moving toward an value-added strategy, and several local brands have focused on producing 'fine or flavor' chocolate bars to export to the North American and European markets. Such exports were worth 778 million USD in 2018 (Ecuador and chocolate, n.d.; Pro Ecuador, 2020).

Ecuador is the major producer of cocoa beans in the Andean region, (FAO, 2019). The country has an annual average growth rate of 10.44% in terms of the total amount of cocoa beans and derived products, worth 778 million USD in 2018 (Pro Ecuador, 2020). Within the cocoa processing industry (chocolate production), Ecuador has approximately 50 formally constituted companies (INEC, 2019; ProEcuador, 2020), 44 of which are chocolate producers

and exporters, according to the Ecuadorian Ministry of Production, Foreign Trade, Investment and Fisheries (2020). Of these 44 companies, 8 are registered in the national fair trade association of small producers and their economic and joint resources, called the 'popular and solidarity economy' (Anecacao, 2015; ProEcuador, 2020; Seps, 2020).

Sustainable practices in the agri-food sector get special treatment from the government (ProEcuador, 2020). Moreover, such practices leverage traditional Andean organizational schemes; foster the management of natural resources in a responsible way; and create a win-win situation with increased value through alliances with local suppliers to achieve development. The increasing international demand for fine chocolate means that there is a high growth potential; thus, cocoa processing provides an alternative product for small-scale farmers threatened by food insecurity and climate change (FAO, 2018).

These characteristics make Ecuadorian chocolate production an interesting context for study that differs from other developing countries and could offer new insights for management research. In line with Fritz and Silva (2018), who identified the cultural and the institutional as two additional factors to study in sustainable supply chains in Latin America, this study aims to contribute to the investigation of such issues.

Research methodology

Being an exploratory study, case methodology is useful for investigating an underexplored context and finding the main relationships between variables (Yin, 2009). In light of the previous academic research in Latin America, Martínez and Kalliny (2012) mentioned that case study methodology represents a complementary perspective. The authors explained how case studies could address complex phenomena and provide an in-depth and inductive understanding of the region (Eisenhardt & Graebner, 2007). Two exemplar cases of chocolate production companies in Ecuador were chosen based on their sustainability-oriented mission and vision; for being part of the 'popular and solidarity economy' organization (www.seps.gob.ec); and their varied product portfolio, close relationships with suppliers, and export potential. Both companies work with cocoa processing and manufacture of chocolate bars and other semi-finished products, which are sold in the local market and exported to different continents. Company profiles are summarized in Table 3.

[Table 3 HERE]

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The data were mainly collected by direct semi-structured interviews with (a) the factory manager and (b) the communication and marketing manager, respectively. The interviews were conducted in Spanish, translated into English by the first author, then revised by the second author. The interviews lasted 60 minutes and 75 minutes, respectively. For the interviews, a research protocol (Appendix A) was designed, including three sections: (1) general company information, that is, product type, volumes, markets, supplying markets, main distribution channels; (2) the sustainability implementation in their operations and supply chain, and (3) discussion about the drivers of sustainability and barriers to implementation. It is important to point out that the first company is a consortium composed of five production plants (of different products) operated independently; hence, the chocolate factory manager is the most knowledgeable person for the interview. On the other hand, the second company's CEO asked to have the interview protocol in advance, in order to evaluate it and be able to designate the communication and marketing manager, the most appropriate person for the interview.

Additionally, secondary information was gathered from the companies' websites, industry news, the Ecuadorian Ministry of Productivity and Foreign Trade, and the National Institute of Statistics and Census (ProEcuador, 2020). The interviews were conducted in November 2018, and the data collection was extended to February 2019. This set of secondary data was key for validation and triangulation with the direct interview information, thus ensuring reliability of the study.

Once the data were collected, translated, and organized, the subsequent analysis followed an inductive/deductive approach and was performed in two steps. The first was case-internal to identify the constructs in each case. A cross-case analysis was then performed to find commonalities and differences. The first level of analysis coding included the interviewees' open statements corresponding to each section of the protocol. Next, those codes were grouped as closely as possible according to the constructs of the study, the drivers and barriers for sustainability and SSCM approaches, which included the local factors characterizing sustainability in chocolate production in Ecuador. The analysis was carried out in MS Excel worksheets for each case. If one or more statements did not correspond to the constructs, they were separated and saved for the cross-case analysis. The second phase of the analysis involved the comparison of the first level codes found per case (a) to find commonalities and differences in the drivers and barriers for SSCM (Table 4) and (b) discern the sustainability approach (Table 5). The statements that were not aligned to the constructs were also compared to find any

common aspects among the cases that are not specifically defined in literature regarding SSCM in Latin America and Ecuador in particular. These elements, such as 'attachment to the land' and 'solidarity' were included in the second level coding. In the two levels of analysis and coding, secondary data from the companies' web pages, media interviews, news, and national trade publications were also used to find the codes and validate the information. Firstly, if open statements from the interviews were broad or implied further information, the evidence in the websites needed to be completed (see examples in Table 4 for the SSCM drivers in Case 1). Secondly, in the cross-case analysis and second-level coding, if one case stated something and the other case did not, we validated whether the other case did not share the approach or was left unsaid during the interview. Thus, websites, news, and national trade organization data were useful for this validation (see examples in Table 5 a, b, c). In this way, primary and secondary data complemented each other in the data analysis.

Findings

In the following, the description of the cases along with their corresponding drivers and barriers for sustainability are presented to answer RQ1. Next, the approaches to sustainability considering local and institutional factors are analyzed to answer RQ2.

Cases description

Case 1: Chocolate manufacturer, not-for-profit corporation

This manufacturer, founded in the 70s, is part of a not-for-profit corporation that produces mainly food (but also small handicrafts). Today, the corporation, based in a small town in the central Ecuadorian Andes, is a merger of 60 cooperatives and associations. Profits are reinvested in public works such as roads, building improvements, and infrastructure. These actions have reduced the migration to larger cities or abroad and led to a more balanced social and economic growth that respects the environment.

The Case 1 corporation processes several Ecuadorian raw materials, such as cocoa, nougat, meat, and cheese. Cocoa is a small segment of their business and production and accounts for 5 to 8 percent of sales. Key activities in cocoa processing are chocolate bar manufacturing and marketing, managed by their own export center which also manages customer relationships. The distribution channels work exclusively for the national market.

Case 1 sources cocoa beans entirely from a farmers' cooperative in Esmeraldas province. The factory works mainly in a make-to-order configuration, with both national and international customers. Company 1 produces high-quality organic cocoa paste for international clients and to order. The international clients are from France and Japan, and these customers share a commitment to the fair-trade philosophy.

The production plant is organic-certified according to European standards. The company complies with all regulations and requirements of organic certification by keeping records and auditing the farms. The company's mission is also to highlight product quality and promote local Ecuadorian products. On the other hand, barriers to traceability and sustainability are the setup costs and excessive documentation associated with the organic certification that certain markets require. Moreover, when there is an order for organic products, it requires a dedicated production line, which implies stopping regular production, and long cleaning and preparation procedures. The cost of the certification itself is also expensive for the factory.

Specifically regarding sustainability, the company's commitment to social development in its supply chain is one of its main axes of action. First, upstream, the company buys cocoa beans at a price higher than the one listed in stocks in order to guarantee supply, safeguard the environment, and provide a better quality of life in the communities. Additionally, the corporation generates a positive impact in the community while supporting the local community with several initiatives, such as helping senior and handicapped citizens, collaborating with the social welfare ministry, supporting education, and providing food and housing to young students. Case 1 also works with women's associations in the handicrafts and textile industries, helping them to organize a production line. In this way, women can identify and develop their products, which provides them with an income, a way of emancipation.

Company values and the commitment of top management are crucial for the sustainability approach Case 1. On the other hand, the corporation struggles with the high costs (barrier) associated with sustainability and its complexity and effort. Indeed, the multitude of projects requires funding and the low domestic demand for certified products does not offset the costs.

Case 2: Chocolate manufacturer and coffee roaster

Case 2 was founded with the merger of two family businesses, originally specialized in chocolate manufacturing and coffee roasting, respectively. The company is based in the capital,

Quito, and is committed to high-quality Ecuadorian chocolate (*Nacional*) and specialty coffee production, all certified organic. The chocolate production supply chain involves the cocoa farmers who deliver the green beans directly from the farmers' sites to the Case 2 processing plant. The beans are then transformed into different varieties of chocolate bars. The brands are visibly growing in the local and international markets. Downstream in the chain, the company obtained organic certification for the European and US markets. On the other side, the local market is served by a single point of sale in Quito for smaller or private customers buying directly. Large local customers, such as supermarket chains, require direct delivery, for which company has its own small fleet. Online sales are the third selling channel.

The company values are grounded in sustainability and collaboration and are supported by a committed top management. Regarding the upstream chain, the company pays a premium to the government price. This is considered a strategic choice because the company needs to create strong, close, and loyal relationships with high-quality certified suppliers. This, however, entails several challenges or barriers to sustainability, such as higher costs, management complexity, work in managing numerous close supplier relationships, and efforts to motivate suppliers to get certified. This complex management situation is accompanied by low domestic demand for certified products, which is a big challenge for the company. Indeed, Case 2 exports only a few certified chocolate bars, and most of the production is sold in the local market.

To support the sustainability endeavors in Case 2, the company pays careful attention to traceability. It controls every shipment and makes sure all documentation regarding certification and origin is compliant. The document traceability system allows the company to demonstrate its "from-bean-to-bar" philosophy. Traceability for Case 2 is all the more complex because ensuring the organic origin for all the ingredients is challenging and costly. This requirement is a limitation for product innovation and new product development, because only compliant ingredients can be blended in products for export. Therefore, the promotion of company values and the potential for accessing new markets are drivers of sustainability. On the other hand, the cost of the organic certification needed for export is a barrier, because most of the time the required documentation and formalities are too costly and not worthwhile for farmers.

RQ1: Sustainability drivers and barriers in chocolate production in Ecuador

In order to answer the first research question, the analysis of the cases evidenced several elements shared between the cases referring to sustainability drivers. Regulations and stakeholder pressures, corporate social and environmental concerns (company values), green image, reputation, leadership commitment, economic benefits, and collaboration (Bloemhof et al., 2015; León-Bravo et al., 2019; Walker et al., 2008) are commonly cited in both cases. Both companies decided to deploy varied sustainability initiatives grounded in their missions and visions, in part because clients in international markets have certain requirements, such as organic certifications. Moreover, companies are motivated by export market opportunities to improve their company presence, as afforded by sustainability and organic production.

Additionally, both cases reported commonalities that hinder their adoption of sustainability, such as costly implementation or certification, difficulty to position the product in the market in the premium product tier, e.g., low domestic demand for certified products (Bloemhof et al., 2015; FAO, 2010), stringent requirements from international clients, and limited interest for sustainability or organic products in the local market.

Table 4 summarizes the drivers and barriers to sustainability identified in the cases under study.

[Table 4 HERE]

RQ2: Local factors and approach to sustainability in chocolate production in Ecuador

The next step in the analysis sought to find the commonalities and differences between the cases in regards to their approach to SSCM and identify the factors that determine sustainability implementation. The cross-case analysis detailing the sustainability areas and initiatives implemented in each case, with representative interview descriptions and quotes, is summarized in Table 5 (a, b, c).

We found that both companies are committed to sustainability and deploy several sustainability initiatives according to their corporate strategy. Specific practices are applied for sustainability and traceability, environment, community, supplier integration and growth, and improving business performance. As Table 5 (a) and (c) shows, both companies are especially connected to social and environmental sustainability, with special attention to farmer development and inclusion, community empowerment, and protection of the soil and natural resources. The data also showed that companies do not implement or design an initiative that is

specifically related to the economic sustainability perspective alone, but instead, they implement social and environmental initiatives that could consequently cover costs and potentially increase sales (Table 5 (b) and (c)).

Moreover, companies largely coincide in their approaches to sustainability, with few specific differences. The sustainability initiatives implemented in both companies are closely linked to their cultural values and patterns (Table 5 (a)). For instance, both focused on strengthening their relationships with farmers to ensure their supply with the required quality and/or certification, as well as to strengthen collaborative relationships and help them improve their economic performance. Both companies use document traceability from farm to the consumer as part of their transparency, fair trade culture, and popular and solidarity economy organization. Moreover, both companies pay higher prices to suppliers, thus establishing long-term relationships based on trust and transparency with farmers or cooperatives. Also, both companies based their work on 'fair trade culture,' buy are not necessarily interested in the seal, which is costly. Thus, doing business in a sustainable way is a matter of fairness, transparency, and mutual benefit. We note that Case 1 pays special attention to the social initiatives implemented for the community. As a part of a non-profit company, Case 1 invests the business profits in various projects or improving and renewing factory equipment (Table 5 (a) and (c)). In contrast, Case 2 works intensively on motivation and fostering sustainability in potential suppliers for its new products and is thus able to broaden the product portfolio for the local and international market (Table 5 (b) and (c)).

[Table 5 HERE]

Discussion: Sustainability and the local Andean cultural and institutional factors

Although the drivers and barriers to sustainability observed in the Ecuadorian cases are generally aligned with previous literature (Bloemhof et al., 2015; Walker et al., 2008), they also provide some insights pointing to the need for a wider consideration of chocolate production sustainability (Silvestre, 2015a; Silvestre, 2015b) in Ecuador. Drivers observed in these cases such as "export potential" delve into the need for understanding the probability of achieving business success abroad when sustainability is rooted in the companies' activities. Such probability depends on the current institutional structure, which may or may not (a) facilitate expanding operations towards a value-added manufacturing strategy; (b) facilitate access to export procedures; and (c) perceive economic gains from exporting (as Case 2 explained). On

the other hand, collaboration in our cases meant building closer relationships with suppliers, either for ensuring quality and quantity of supply or for being a part of the social and economic development movement in the cocoa-growing areas. Hence, these can be identified as the local factors, that is, institutional-infrastructure, cultural risk sharing (Table 5 (c) and (a)) factors influencing sustainability implementation, thereby enhancing the brand image in local and international markets.

Similarly, the barriers to sustainability observed in our cases, such as the cost of implementation and difficulty to comply with international regulations, are in line with the previous literature (FAO, 2010; FAO, 2018; Tanco et al., 2015; Walker et al., 2008). Nonetheless, further consideration is needed of the specific cultural, social, and geographical characteristics of chocolate production in Ecuador that accentuate such barriers for implementation of sustainability. For instance, with a small local market and the difficulties to access the international one, sustainability turns out to be costly to implement. The interviewees in both cases explained that, although the quality of Ecuadorian cocoa is internationally renowned, companies are compelled to adopt costly certifications to access markets that appreciate the effort and pay higher prices, when, in reality, companies were already acting with sustainability in mind, in a solidarity scheme, paying fairer prices, supporting the community, and practicing stewardship of the land..

Therefore, considering the sustainability drivers and barriers observed in the cases and analyzed here for RQ1, several additional factors that influence sustainability implementation emerged. From the analysis of the cases of chocolate production in Ecuador, several cultural and institutional factors were identified as elements that influence how and why companies opt for sustainability along their supply chains. The factors influencing the adoption of sustainability in the cases under study are shown in Table 5 (a, b, c).

Chocolate manufacturers Ecuador have a tight relationship with farmers that, in turn, reflects their ancestral cultural traditions with attachment to the land and the work in an associative solidary manner. Hence, the processing company integrates in the system and aligns to those needs, thus, paying higher prices to farmers that take care of the land or are developing better agricultural techniques with their peers. In this way, the processing company's sustainability mission becomes a joint endeavor with their upstream partners for ensuring high-quality soil, high-quality beans and, consequently, high-quality chocolate (Table 5 (a)). Along with the cultural factors, institutional elements in the Ecuadorian business and industry sectors

determine how willing or challenged companies can be when setting up a sustainability strategy. Case 1 exemplified that the local market infrastructure (e.g., bureaucracy, lack of funds, or economic incentives for crops production and sustainability projects) makes it impossible to invest more resources without increasing the final product price. These findings are in line with the literature; for example, Tanco et al. (2015) explained how the main barriers and difficulties that hinder small and medium companies in South America are government policies, workforce availability, the macro economy, and market instability, among others. Thus, Case 1 preferred not to subscribe to the multiple certification schemes that international markets demand. Only if the specific buyer is willing to share the cost (or totally cover it) will the company do business with such a buyer. Hence, the sustainability approach supported by a strong culture of solidarity and attachment to the land does not change; instead, the overall sustainability and supply chain management is challenged by the 'weak infrastructure, endemic poverty and safety' that still besets Latin America (Blanco & Paiva, 2014).

As described in the findings, when answering the second research question, we build on Fritz and Silva's (2018) origami framework, which identified the regional specificities in Latin America in sustainable supply chain research. The cases in our study suggest several factors that influence the adoption of different SC sustainability strategies in a wider perspective, specifically regarding cultural and institutional related factors on top of the environmental and/or social sustainability ones. Our findings highlight the tight link between the way companies are integrated into the ancestral cultural values with their sustainability approach. Thus, we demonstrate sustainability to be a more holistic practice that involves more than environmental and or social initiatives; rather, it involves problems related to infrastructure, supply chains, and the global environment. Similarly, our study identifies several institutional elements that influence sustainability adoption in the chocolate production supply chain. For instance, Case 1 prioritizes addressing social problems and faces several institutional complexities (e.g., poverty, lack of infrastructure, isolated communities) affecting the communities vis-à-vis its implementation of business strategies and sustainability activities. Consequently, with its focus on local market preferences, the company opted to engage the community by highlighting the cultural and social value of the product and thus, empowering and integrating the community. On the other hand, Case 2 prioritizes economic development and sustainability by leveraging farmers' institutional needs (e.g., lack of governmental support and incentives for sustainability) by providing a structured buying scheme that keeps prices

constant and considers bean quality. Case 2 differentiates products between national and international markets by considering consumer preferences and including local ingredients connected with national traditions. Similar to Case 1, Case 2 also promotes local development.

In brief, the initiatives and practices in sustainability implemented in these Ecuadorian cases are influenced by several cultural and institutional factors, as presented in Table 6. The table indicates that both cases have multiple factors in common. Nevertheless, some practices determine a social sustainability focus that is persistent in Case 1 (shaded in grey in Table 6), and some sustainability practices demonstrate an economic focus as predominant in Case 2 (shaded in lighter grey in Table 6).

[Table 6 HERE]

Therefore, we can establish the premise that sustainability in the Andean chocolate production supply chain is being determined by the companies' way of tackling institutional complexities, driven either by social or economic priorities. Thus, extending previous frameworks found in the literature, we find two approaches for sustainability in this particular supply chain. Thus, building on the framework of Fritz and Silva (2018), in Figure 1 we identify the areas prioritized for sustainability in the cases under study. Case 1 mainly addresses the institutional, social, and cultural angles as priorities for sustainability, while Case 2 prioritizes the economic, cultural, and institutional dimensions. It is important to note that Figure 1 highlights the priority areas that companies observe in their sustainability strategies. Social factors are identified with a dashed line and economic factors are identified with a dash-dot line. Both cases share one main circle in the middle, identified with a solid darker line, which involves cultural and institutional factors present in both chocolate manufacturers. The angles that are not marked with the dashed lines are not left out in the companies' sustainability approach but are somewhat secondary or embedded in the priority angles.

[Figure 1 HERE]

Conclusion

Sustainability studies in Latin America, specifically in the Andean region, are scarce in the literature, especially considering the analysis of specific local characteristics for business management and for implementing sustainability in the region (Blanco & Paiva, 2014; Jabbour & Jabbour, 2014; Rodríguez et al., 2016). This paper investigates sustainability in the Ecuadorian chocolate production industry to identify the main sustainability drivers and barriers

and describe how food companies in the region manage sustainability, given the particular production characteristics, challenges, and opportunities.

From the findings and analysis in this study, the contributions to the literature are twofold. First, the paper extends research related to sustainability management in developing countries, given the scarce research in the Latin America, specifically in the Andean region and Ecuador. Thus, this study provides empirical evidence of the drivers and barriers that characterize understanding and implementation of sustainability in the chocolate production industry in Ecuador. Second, this study contributes to the literature by investigating how chocolate producers in Ecuador approach sustainability, considering the local, cultural, and institutional factors that influence their activities or projects toward sustainability and, thus, the way they prioritize a combination of dimensions in their strategies (Figure 1).

Furthermore, our findings may be of interest to practitioners by helping them identify the combination of sustainability initiatives that can shape their approaches for sustainable SCM, taking into account the local factors (cultural and institutional) that most influence their strategies. As pointed out in the literature and evidenced in the cases in our study, sustainability in Latin American companies encompasses institutional and cultural factors, along with the environmental and social factors, which are still understudied. This paper attempts to provide insights that can guide managers in setting up strategies for enhancing sustainability and improving their business, first, by identifying the main drivers and barriers to sustainability implementation and, second, by individualizing the priority areas for sustainability development, including the local and institutional factors that determine the approach to sustainability in this context.

As with all research, this study has several limitations. First, the investigation focused on the chocolate manufacturer's point of view. Hence, future research in this topic could also study intermediate actors in the chain, such as traders and logistic carriers, or enlarge the sample with buyers in other geographic areas that have an established sustainability strategy, to contrast them with suppliers. Second, the companies studied worked with certified and non-certified crops indiscriminately. Thus, future research could include companies handling with non-certified cacao only. Third, although the companies selected are representative of this particular industrial sector in Ecuador, the number of cases remains limited. Further research should enlarge the sample for validating and extending the results and include other types of companies that are more integrated upstream and/or downstream in the chain. Other avenues of research

could also involve the access to technological and financial tools for developing sustainability in the region.

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Table 1. Drivers and barriers for SSCM.

Drivers of SSCM	**Definition**	**Reference**
Market access	Sustainability commitment that is demonstrated with varied practices along the triple bottom line and specific certifications facilitate business to attain new and broader markets.	Jia et al., 2018; Walker et al., 2008
Increased profitability	Positive effect on the environment brings economic benefit since environmental and economic dimensions are often considered hand in hand. Business models based on cost-and profit-sharing enhance capabilities and performance. Economic sustainability can be achieved with cost and profit-sharing supporting disadvantaged SC actors in BoP markets.	Bloemhof et al., 2015; Ramachandran et al., 2012; Seuring et al., 2019
Better company reputation	External actors take under consideration green supply management issues to evaluate companies. In turn, large organizations probably influence suppliers to achieve their environmental agenda and demonstrate commitment with sustainability.	Walker et al., 2008; Wycherley, 1999; Seuring et al., 2019
Company social and environmental concern	Waste management, reverse logistics, green manufacturing, and production are green practices that are more and more applied as a demonstration of environmental concern. Social sustainability toward local development is highlighted as a result of purchasing practices, buying from local communities or national products is recommended to sustain the job market and the economy. Third-party standards implementation helps to achieve social and environmental objectives.	Fritz & Silva, 2018; Walker et al., 2008; Seuring et al., 2019
Stakeholder pressures	Stakeholder expectations directly or indirectly result from SSCM, e.g., government, NGOs, employees, or local communities. Stakeholder engagement triggers commitment to support the development of local SMEs via learning processes, technological diffusion, and access to technical standards. Pressure from consumers for more sustainable products. External legislation and regulations	Perez-Aleman & Sandilands, 2008; Rebs et al., 2017; Fritz & Silva, 2018; Seuring et al., 2019; Gold et al., 2010; Yawar and Seuring, 2018
Barriers to SSCM	**Definition**	**Reference**
Implementation complexity-understanding	Coordination effort and complexity are factors that hinder sustainability implementation, requiring immense amounts of resources and capabilities. The resistance to adopting sustainable supply chain management resides within organizations. The incompatibility of logistic network structure, issues with policies, and bureaucracy are some of the main external barriers.	Walker et al., 2008; Seuring & Muller, 2008; Bloemhof et al., 2015; Jia et al., 2018; Silvestre, 2015a
Implementation cost	High cost is one out of the three most-mentioned barriers to implementing SSCM. In Latin America, problems of infrastructure and safety are some of the challenges that companies face and must be prioritized over sustainability certifications.	Blanco & Paiva, 2014; Seuring & Muller, 2008; Jia et al. 2018

	High certification costs are considered a major obstacle to farmers.	
Barrier to entry	Industry regulations limiting industry actions. SC in emerging and developing economies face barriers to collaboration, integration, sustainability, and innovation, as well as exclusion from global chains.	Silvestre, 2015a.; Khalid et al., 2015; Jia et al., 2018
Limited capabilities/ know-how	Supply chain members gradually learn about their partner behaviors and how to collaborate, become more integrated, and manage upstream and downstream relationships in their SC. The limited know-how and capabilities hinder learning sustainability and cause resistance to SSCM adoption.	Silvestre, 2015b; Fritz & Silva, 2018; Jia et al., 2018
Missing or insufficient communication in the supply chain	Communication along the supply chains tends to be fragmented, and the need for traceability tools arises when buyers or consumers require specific origin, quality, and fair-trade information. Information is crucial for evaluation, monitoring, sanctions, and reporting. Developing long-term relationships is one barrier when it comes to different supply chain actors.	Seuring & Muller, 2008; Khalid et al., 2015.
International regulations	The requirement to demonstrate the adoption of international standards had been perceived as a threat to SSCM. Multiple requirements from different markets.	Walker et al. 2008; Jia et al., 2018; Seuring et al., 2019; Rodríguez et al., 2016
Communication to consumer	Enhanced communication is one of the main barriers identified in BoP research. Communication and coordination with suppliers can create win-win situations but is difficult to develop.	Walker et al., 2008; Seuring et al., 2019; Gold et al., 2013; Khalid et al. 2015
Limitations in the local/domestic markets	Lack of consumer awareness about sustainability in developing countries. Local contextual factors in SSC in emerging economies need to be fully understood for the sustainability decision-making process accuracy.	Walker et al., 2008; Khalid et al., 2015; Jia et al. 2018; Silvestre, 2015; Silvestre, 2015b.

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Table 2. Factors influencing sustainability adoption in developing countries.

Cultural	**Traditional values**	According to Jia et al. (2018) citing Abreu et al. (2012), several factors in different national systems determine the adoption of SSCM: political, financial, education, labor, and culture. Similarly, Fritz and Silva (2018), mentioned cultural elements that should be analyzed in Latin America beyond the TBL.
	Collaboration	Gold et al. (2010), mentioned that SSCM is closely linked to partnership or collaborative approaches. According to Silvestre (2015b), economic benefits among actors in SC could be achieved through collaboration. Changes in the social and environmental dimension via inter- and intra-organizational practices to achieve sustainability. (Silva et al., 2018).
Institutional	**Management issues**	Jia et al. (2018) mentioned how different language, education, values, organizational culture, and adverse business practices shape SSCM adoption.
	Local market	Latin America as a region is modernizing supply chain practices and is now a large potential market (Blanco & Paiva, 2014). However, consumers in developing countries lack awareness about sustainability, and there is limited demand for sustainable products (Jia et al., 2018).
	International Market	FAO (2019) mentions the huge existing potential in agricultural practices in Latin America, especially in the processing of raw materials, such as cocoa beans, into certified and non-certified chocolate bars. Buyers demand producers comply with and adopt international standards and third-party certifications, which can also be seen as trade barriers (Jia et al., 2018).

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Table 3. General characteristics of the cases studied.

Characteristics	Case 1	Case 2
Year of creation	1992	2008
Interviewee	Factory manager	Communication and Marketing manager
Main product lines	Chocolate bars and candies Cocoa paste Cocoa butter Cocoa powder Cocoa nibs	Chocolate bars Filled chocolate bars Cocoa butter Cocoa nibs
Production volume*	3,500 Kg/month (chocolate bars and candies)	18,000 units/month (chocolate bars) 20,000 units/month (filled chocolate bars) *Approx. 1,900 Kg/month (based on a standard 50 gram bar)*
Organic production	Yes: for specific customers No: for the main product lines	Yes: for specific bars No: for most chocolate bars
Export	Yes: for specific customers, organic cocoa paste	Yes: organic chocolate bars
Relationship with suppliers	Direct purchase from farmers Support farmers on administrative procedures for export	Direct purchase from farmers Long-term contract based on premium prices Encourage farmers to adopt organic production

*Data: Ecuador Certified Offer (2018)

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Table 4. Drivers and barriers for sustainability in the cases under study.

	Operationalization	**Codes from cases**	**Case 1**	**Case 2**
Drivers of SSCM	Company environmental concern	Company mission and vision	We want to show the possibility of a new development model: […] keeping beautiful paramo landscapes down to the subtropical areas bathed with the sun […] (Case 1 website)	*We are founded on the sustainability philosophy; our operations are grounded in this philosophy…* *our tradition, our values, are related to sustainability and traceability*
	Company social concern	Company mission and vision	[Case 1] organization and agro-industrial model has kept the population, avoided migration to urban centers and improved the community's quality of life (Case 1 website)	
	Economic benefit (e.g., cost reduction, higher profits)	High export potential	*In those regions, people are more aware and pay attention to product labels, […] not only regarding nutritional and health—that is important of course—but also the type of production, provenance*	*International markets can differentiate the every-day and fine products […] they tend to read labels more attentively and pay more for fine chocolate*
		International customers willing to pay for sustainable products		
		Organic certification as export enabler		
	Company image and reputation	Potential for brand positioning and recognition		*Our added-value (competitive difference) was to produce organic chocolate.* We wanted to focus on something that differentiates Ecuador, because of its temperature, sunshine [..] (Case 2, CEO presentation video) With an entire image renovation, our product seeks to provide the consumer with a new experience. Case 2 is ready to fly. (Case 2, introduction video)
	Stakeholder pressures for certifications	International markets require different certifications (organic)	*Yes, I am sure of that [interest in certified products]. In those regions [Europe, Asia] people are more aware and pay attention to product labels. We are still not there yet.*	*certification per se is considered more like market pressure to export our products*
Barriers for SSCM	Implementation Cost	Certifications are costly	*[another sustainability certification] wouldn't be feasible for us. It is too costly.*	*We are a brand committed to producing Ecuadorian chocolate with Ecuadorian ingredients, but the certification is a limitation*

		Negotiation needed to share the certification costs	*Unless the customer would pay all the certification costs…* *for next year we have two possibilities: 1. Talk to our client about increasing prices because we need to afford the certification costs by ourselves, and 2., look for another, cheaper, certifier …*	
		Long set up times for organic product	*having just one production line is costly to change over every time someone wants a different type of product from organic to conventional and from conventional to organic*	
		Make organic product only if volumes justify the cost		
	International regulations	International markets require different certifications (organic)	*our plant does have organic certification, specifically for the European and North American markets. Japan does not require it, but Europe does. […] If Japan did, it would be very difficult and costly to obtain*	
		Compliance with documentation is a barrier for NPD		*[…] the certification is a limitation; we do have wonderful ingredients here [Ecuador] but we are not capable of certifying them all or getting the suppliers certified. For instance, chocolate with "achotillo" (rambutan/ Nephelium lappaceum), would be a great product, but we cannot do it.*
	Domestic market	Domestic market not interested in sustainability or certifications	*The [production] plant is not taking advantage of the organic production capacity because the largest target market here in Ecuador is not interested in that kind of product.*	*Certification is not a requirement that adds value in the national market [...],it is not a 'must-have' yet*
		Local consumer not willing to pay higher prices for sustainability		*The price difference is substantial, as is the quality. We [Ecuadorians] are not used to fine chocolate products when you can pay very little for regular chocolate*
	Access to consumers	Communication is a challenge	*[…] our story is real and has impacted so many people positively, but we haven't been able to take advantage as much as we should. They [competitors] have huge commercial and advertising campaigns. Instead, if we compare the social balance, if we look at the figures here, I*	*[On the website] We care about our image. We describe our operations and our philosophy; we concentrate on that.* *Globalization and technology are opening the doors for us. we need to keep our information current*

			could say our impact on the communities could be even larger and broader.	
		Competitors advertise more and better	*[…] our story is real and have impacted positively on so many people, and we haven't been able to take advantage as we should have. They [competitors] have huge commercial and advertising campaigns. Instead, if we compare the social balance, if we look at the figures here, I could say our impact on the communities could be even larger and broader.*	

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Table 5. Cross-case analysis: local factors and approach to sustainability — (a) cultural factors.

		Cultural factors		
		Traditional values		
Approach to SSCM		***Company mission***	***Attachment to the land, solidarity***	***Collaboration for economic risk sharing***
In the company strategy	Sustainability mission	Case 1: not-for-profit company devoted to improving local development with cooperativism Case 2: The mission of [Case 2] is to produce the best Ecuadorian chocolate of the Ecuadorian *Arriba Nacional Fino de Aroma* cocoa in its country of origin and to connect the cocoa producer with the consumer through total traceability. We promote the culture of bean-to-bar chocolate whilst improving the cacao producers' quality of life. (Case 2 website) The objective is not to be the biggest but to be the best, in the most demanding markets (Case 2 introduction video)		
	Fairtrade culture, prioritized over certified labeling	*Case 1: "the international [customers] share the fair-trade values but they are not part of the FT organizations, they are private companies"* The concept was clear from the beginning: get out of poverty together, not for the sake of money, but to have a better life, *sumak kawsay* [in Quichua language] (Case 1 Television news video) Case 2: company committed to Fairtrade values rather than the label because of the high certification costs		People [farmers] must want to cultivate good cocoa because they earn money. They have to be happy, and thus we will be happy with the product and enhance the business together (Case 2 history video)
Sustainability and traceability	Commitment to transparency throughout the SC	The processing factory is four hours away from the farm where the product is grown, and that's the wonderful thing about working in Ecuador. We can guarantee the exact origin of the cocoa we are using. (Case 2 introduction video)		Case 1: company ensures transparency, thanks to direct procurement Case 2: We promote the culture of bean-to-bar chocolate whilst improving the cacao producers' quality of life (Case 2 website)
For the environment	Attention to soil care	*Case 1: "we buy cocoa at a higher price than the stocks, in order to guarantee supply and safeguard the environment"* It's interesting how everything starts with conservation: planting trees, the tree of gods (Theobroma). (Case 2, CEO presentation video)		
	Collaboration with NGOs for species conservation	Case 2: company collaborates with NGOs for species conservation and promoting animal welfare (WWF)		
For the community	Use extra margin for social projects			

	Women's empowerment project Support for educational activities Support for Senior citizens	The central axis was to implement the solidarity economy, work well done, product diversification, focus on the middle to high class consumer. It was a dream of a solidarity economy. (Case 1 Television news video) *Case 1: "given that we are non-profit, all the earnings from chocolate sales are reinvested in social projects or directly into the production line"*	
Attention to suppliers	Pay higher prices to farmers	Based on our philosophy, the best we can do for the farmer is to give them the conditions to produce better, and the motives, that is the price (Case 2 history video)	Case 1: Company pays higher prices to suppliers for helping local development (Case 1 website) *Case 2: "We pay higher prices than the official government price. It is not a matter of beating our competitors; it is a matter of loyalty and trust."*
	Collaboration with suppliers Commit to long-term relationships with suppliers Establish relationships based on trust	*Case 1: "company fosters local development creating valuable long-term relationships with family farmers"* In this associative model, they [farmers] can be workers, managers, sellers. They make their own decisions. There is a high sense of belonging, commitment and responsibility. This is how this project is sustainable, adding value to our raw materials. Ecuador needs this to progress. (Case 1 television news video) *Case 2: "We need to cultivate a fair relationship with them [suppliers], otherwise we'll lose our benefits as a brand. We need to build long-term loyalty"* Business is not buying and selling. Business is the relationship with farmers that guarantees success or failure of the business (Case 2 history video)	
For improving the business	Continuous investment in the factory	Case 1 profits are reinvested in the plant for increasing capacity, replacing machinery, and for maintenance	

Table 5. Cross-case analysis: local factors and approach to sustainability — (b) institutional factors (management).

		Institutional: Management issues	
Approach to SSCM		*Environmental and social projects are costly*	*Address potential for business positioning*
Sustainability and traceability	Commitment to transparency along the SC		Case 1: company ensures transparency thanks to direct procurement Case 2: company demonstrates product origin 'from bean to bar' with direct procurement (Case 2 website, media interview)

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			The quality is in the bean. We bring quality from tree to mouth, to the consumers taste (Case 2 history video)
	Keep documental traceability system	Case 1: Keep documental traceability system Case 2: "*traceability is part of the value in our product. We control and document the origin for all ingredients.*"	
Attention to suppliers	Pay higher prices to farmers	Case 1: Company pays higher prices to suppliers for helping local development Case 2: *"We pay higher prices than the price stated by the government. It is not a matter of beating our competitors; it's a matter of loyalty and trust."*	Based on our philosophy, the best we can do for the farmer is to give them the conditions to produce better by paying them more (Case 2 history video)
	Periodic audits to suppliers to ensure contractual terms are met (quality, organic, etc.)	Case 1: "We trust the origin and quality of our suppliers, […] We visit them periodically, too." Case 2: Periodic audits of suppliers to ensure contractual terms are met (quality, organic, etc.) (Case 2 media interview)	
	Motivate suppliers to adopt sustainability and certifications	Case 2: *"We do motivate them [farmers]. We raise the benefits of certification for them, but there are several requirements in terms of attention to crops, industrial safety, and so on, that are totally up to them."*	
	Search certified suppliers for other ingredients	Case 2: *"They [customers] are different, and not all suppliers have the requirements to comply with both. And if we wanted to export to both markets, we must also use ingredients with both certifications."*	
	Farmer's concern about the market interest in sustainable/organic beans	Case 2: *"Farmers are not keen to produce certified crops because when they sell they do not necessarily get paid as certified."*	
For improving the business	Increase promotion of the value and experience in the market	Case 1: *"We have worked so long here with the community and our brand, which is recognized and appreciated here. [We] have impacted so many people, […] and we haven't been able to take advantage as much as we should "*	
	Continuous investment in the factory		Case 1 profits are reinvested in the plant for increasing capacity, replacing machinery, and maintenance

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Table 5. Cross-case analysis: local factors and approach to sustainability —(c) institutional factors (local and international market).

		Institutional					
		Local market			**International Market**		
Approach to SSCM		*Domestic market not interested/ willing to buy sustainable products*	*Infrastructure: bureaucracy, compliance with distinct certifications*	Infrastructure: lack of services/budget/ incentives for organic products	*Certifications enable access to international markets (exports)*	*International customers willing to pay for sustainable products*	*International markets require different certifications*
In the company strategy	Fairtrade culture, not label		Case 1: *"The international [customers] share Fairtrade values, but are not part of the FT organizations. They are private companies*" In this associative model, they [farmers] can be workers, managers, sellers. They make their own decisions; there is a high sense of belonging, commitment and responsibility. This is how this project is sustainable, by adding value to our raw materials. Ecuador needs this to progress. (Case 1 television news video Case 2: Company is committed to Fairtrade values and not the label because of the high certification costs				
	Deal with governments policies		Case 2: *"It is not only the producer's issue; it is a governmental issue because to produce organic cocoa is much more expensive than conventional cocoa*"				
Sustainability and traceability	Commitment to transparency along the SC				Case 1: company ensures transparency thanks to direct procurement Case 2: company demonstrates product origin 'from bean to bar' with direct procurement		
	Keep documental traceability system			Case 2: *"Traceability is part of the value in our product. We do control and provide proof of origin with the corresponding documentation for all ingredients."*			
For the environment	Attention to soil care			Case 1: "W*e buy cocoa at a higher price than*			

				the government price in order to guarantee supply and safeguard the environment."			
For the community	Use extra margin for social projects			*Case 1: "Given that we are non-profit, all the earnings from chocolate sales are reinvested in social projects or directly into the production line."*			
	Women's empowerment project						
	Schooling activities support						
	Senior citizens support service						
Attention to suppliers	Collaboration with suppliers		The central axis was to implement the solidarity economy, work well done, product diversification, focus on middle and high class consumers. It was an economic dream as a solidarity economy. (Case 1 Television news video) Case 2: *"We need to cultivate a fair relationship with them, otherwise we'll lose our benefits as a brand. We need to build long term loyalty."*				
	Periodic audits to suppliers to ensure contractual terms are met (quality, organic, etc.)		Case 1: "*We trust the origin and quality of our suppliers. […] We visit them directly periodically too."*		Case 1: "*We trust the origin and quality of our suppliers. […] We visit them directly periodically too."*		Case 1: "*We trust the origin and quality of our suppliers. […] We visit them directly periodically too."*

	Motivate suppliers to adopt sustainability and certifications				Case 2: "*We do motivate them [farmers]. We raise the benefits of the certification for them but there are several requirements in terms of attention to crops, industrial safety, and so on, that are totally up to them*"		
	Search certified suppliers for other ingredients	Case 2: *"They [customers] are different and not all suppliers have the requirements to comply with both. If we wanted to export to both markets, we must have the ingredients also with both certifications"*				Case 2: "*They [customers] are different and not all suppliers have the requirements to satisfy both, and if we wanted to export to both markets, we would have to use ingredients with both certifications."*	
	Farmer's concern about the market interest in sustainable/organic beans	Case 2: *"Farmers are not incentivized to grow certified crops because when they sell they do not necessarily get paid as such"*		Case 2: *"Farmers are not incentivized to grow certified crops because when they sell they do not necessarily get paid as such"*			
For improving the business	Increase promotion of the value and experience in the market	Case 1: "*We have worked so long here with the community. Our brand is recognized and appreciated here. [We] have impacted so many people, […] and we haven't been able to take advantage as much as we should.*"		Case 1: "*We have worked so long here with the community. Our brand is recognized and appreciated here. [We] have impacted so many people, […] and we haven't been able to take advantage as much as we should.*"		Case 1: "*We have worked so long here with the community. Our brand is recognized and appreciated here. [We] have impacted so many people, […] and we haven't been able to take advantage as much as we should.*"	
	Continuous investment in the factory			Case 1 profits are reinvested in the plant to increase capacity, replace machinery, and for maintenance			

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Table 6. Summary of cultural and institutional factors influencing sustainability adoption.

			Approach to SSCM	
Local factors			**Case 1**	**Case 2**
Cultural	Traditional Values	Company sustainability mission	Sustainability mission Attention to soil care Commitment to transparency Commit to long term relationships with suppliers Relationships based on trust	Sustainability mission Attention to soil care Commitment to transparency Collaboration with NGOs for species conservation Pay higher prices to farmers Commit to long-term relationships with suppliers Relationships based on trust
		Attachment to the land, Solidarity	Fairtrade culture rather than labelling Commitment to transparency Attention to soil care Continuous investment in the factory Women's empowerment Senior citizens support Schooling activities	Fairtrade culture rather than labelling Commitment to transparency Attention to soil care Collaboration with NGOs for species conservation
	Collaboration	Risk sharing	Fairtrade culture rather than labelling Pay higher prices to farmers Commit to long term relationships with suppliers Relationships based on trust	Fairtrade culture rather than labelling Pay higher prices to farmers Commit to long term relationships with suppliers Relationships based on trust
Institutional	Management	Environmental and social projects are costly	Documental traceability Pay higher prices to farmers Periodic audits to ensure contractual terms are met Increase promotion of product value Commitment to transparency Documental traceability	Documental traceability Pay higher prices to farmers Periodic audits to ensure contractual terms are met Motivate suppliers to adopt sustainability and certifications Search certified suppliers for other ingredients Concern about the market interest in sustainable/organic beans Commitment to transparency Documental traceability
		Potential business for positioning in the market	Increase promotion of product value Continuous investment in the factory	Pay higher prices to farmers Motivate suppliers to adopt sustainability and certifications Search certified suppliers for other ingredients
	Local market	Domestic market not interested/willing in sustainable products	Increase promotion of the product value	Search certified suppliers for other ingredients Concern about the market interest on sustainable/organic beans
		Infrastructure: bureaucracy, compliance	Collaboration with suppliers Periodic audits to ensure contractual terms are met	Fairtrade culture rather than labeling Deal with government policies Collaboration with suppliers

				Search certified suppliers for other ingredients
			Attention to soil care	Fairtrade culture rather than labeling
			Continuous investment in the factory	Deal with government policies
		Infrastructure: lack of services/ funding/ incentives	Collaboration with suppliers	Collaboration with suppliers
			Increase promotion of product value	Documental traceability
			Women's empowerment	Search certified suppliers for other ingredients
			Senior citizens support	Concern about the market interest in sustainable/organic beans
			Schooling activities	
	International market	Certifications enable access to market	Commitment to transparency	Commitment to transparency
			Documental traceability	Documental traceability
			Periodic audits to ensure contractual terms are met	Motivate suppliers to adopt sustainability and certifications
		Customers willing to pay	Commitment to transparency	Commitment to transparency
			Increase promotion of product value	Documental traceability
				Motivate suppliers to adopt sustainability and certifications
				Search certified suppliers for other ingredients
		Market require different certifications	Commitment to transparency	Commitment to transparency
			Periodic audits to ensure contractual terms are met	Documental traceability
				Motivate suppliers to adopt sustainability and certifications
				Search certified suppliers for other ingredients
			Practices for social sustainability	***Practices for economic sustainability***

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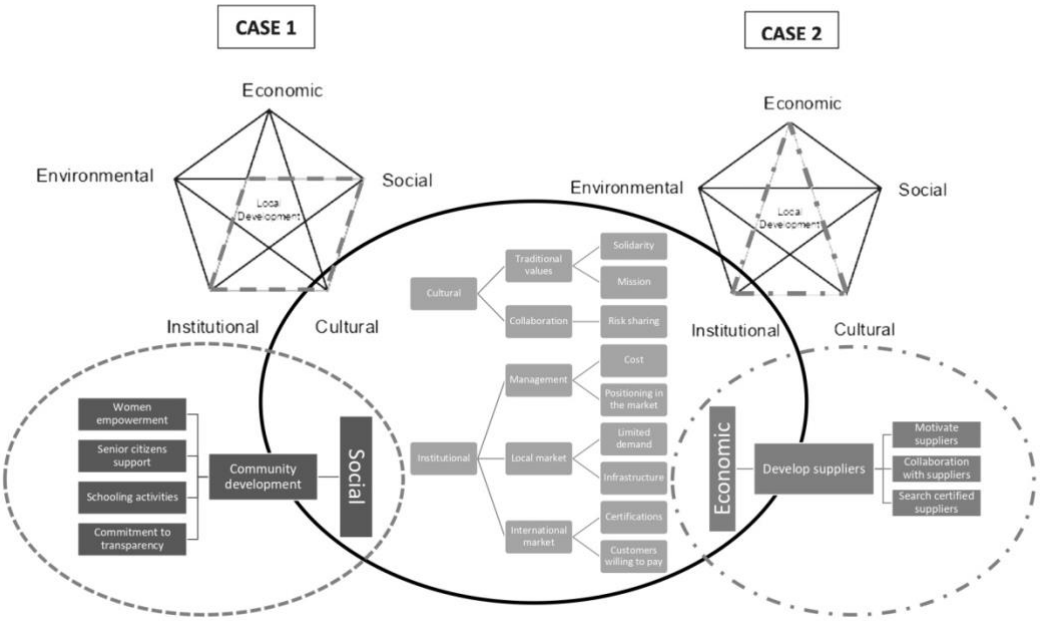

Figure 1. **Sustainability priorities in two Ecuadorian chocolate manufacturers.**
Source: Authors, built upon Fritz and Silva (2018).

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Appendix A

Research protocol

1. General info: description of the actors' activity, key figures of their activity (e.g., production, export, number of cooperative members), supply chain relationships upstream and downstream

2. Drivers and barriers: identify the main motivations or reasons (drivers) triggering the decisions when the company opts for a sustainability initiative [economic gains, mission, vision, reputation]. What are the conditions, challenges, or issues (barriers) faced when the company opts to apply such sustainability initiatives? [cost, understanding or communication, external requirements]

3. Sustainability initiatives and local factors: What sustainability initiatives are implemented? Do they adhere to certifications? Do they use traceability systems? If yes, (a) What type of traceability systems are currently in place? How do they sustain supply chain collaboration? [Underline/deep-dive on the traditional or ancestral practices or references to culture, institutions, and infrastructure]