

# Developing global supplier competences for supply chain sustainability: The effects of institutional pressures on certification adoption

## Abstract

Due to institutional pressures faced by companies in their business environment, this paper investigates how sustainability certification adoption affects global suppliers' competences. Using multiple case studies, managers of 20 export-oriented firms were interviewed and secondary data were collected and analysed through inductive content analysis. Findings show normative and mimetic pressures as central for sustainability implementation by coffee suppliers. Additionally, we found that as a result of suppliers' sustainability improvement in their own operations, during the certification adoption, new competences emerged going beyond the Triple Bottom Line dimensions, including, for instance, improvements in aspects of institutional dimension of sustainability. In contrast to previous research in supply chain sustainability that emphasises coercive pressures, this paper demonstrates the role of normative and mimetic institutional pressures in developing new supplier competences. In doing so, we draw on the role of certification adoption in influencing global suppliers and hence sustainability throughout the supply chain.

**Keywords:** Supply chain sustainability; competence; certification; supplier country context; institutional pressures; emerging economy

## 1. Introduction

Given the many challenges associated with global supply chain (SC) management (e.g. due to different cultures, legislation and operational contexts in different countries), sustainability has emerged as an important issue to minimize risks throughout the SC (Awasthi et al. 2018; Morais and Silvestre, 2018). In addressing these challenges, buyers of global companies usually require sustainability-related certification adoption as a governance mechanism to improve trust and strengthen relationships (Alvarez et al., 2010; Hajjar et al., 2019). However, in many cases, buyers do not fully understand the singularities of emerging economy suppliers, such as their strong focus on operational activities (i.e., extraction and production; Jia et al., 2018; Li et al., 2018; Mani et al., 2018), and specific needs, resources and competences (Leon-Bravo et al., 2022). Therefore, given that suppliers operate in different contexts, framed by various types of turbulence (e.g., institutional voids, social inequalities and lack of qualified workers; Silvestre, 2015), we investigate the emergence of competences as part of sustainability certification adoption in response to institutional pressures.

Certification adoption has increasingly been valued in the international market as consumers and legislation in developed countries have become progressively stricter (Lambin et al., 2018; Silvestre et al., 2020). These changing goal posts act as an additional pressure alongside the frequent buyer requests for emerging economy suppliers to adopt certifications, as a prerequisite to participate in global SCs. However, it is unclear why some emerging economy suppliers effectively adopt sustainability in their operations and have positive outcomes while others do not (Hajjar et al., 2019; Liu et al., 2019; Jia et al., 2018). One interpretation for this is the role of institutional pressures (DiMaggio and Powell, 1983; Huq and Stevensson, 2020; Sayed et al., 2017) in adopting certifications.

For instance, Daddi et al. (2016) found that institutional pressures can lead to sustainability certifications and consequently to improved levels of company's innovation. However, in this context, Huq and Stevansson (2020) call for further understanding on the effectiveness of pressures placed on suppliers. The prior literature has focused on how institutional pressures involve the coercive imposition of buyers (Harjoto et al., 2019; Koster et al., 2019; Montiel et al., 2016). For instance, Firkru (2014) found that there is a higher probability of certification being implemented due to coercive pressure. Similar evidence of this type of pressure has been reported by Ponte et al. (2022) in the cashew SC in Brazil, by Atupola and Gunarathne (2022) in the tea industry in Sri Lanka and by Glasbergen (2018) in the coffee and palm oil Indonesian small producers' context, all of which are emerging economy global suppliers. However, insufficient studies have considered how other institutional pressures may also act (Bustos and Moors, 2018; Hajjar et al., 2019) to improve supplier sustainability competences. Therefore, this paper contributes to this research gap by exploring how suppliers' competences are developed during sustainability certification.

For this study, competences refer to a set of abilities developed to better conduct an activity; they emerge through experiences that lead to individual, organisational and SC benefits (Le Deist and Winterton, 2005; Mills et al., 2002). They are developed over time and can emerge as being sustainability-oriented thereby enabling individuals, organizations and SCs to manage complex situations effectively resulting in a competitive differential for companies, which allows learning and expansion of internal resources (Kuzma et al., 2017). To understand what led suppliers to sustainability certification adoption and the impact of certifications on their competences with effects upon the entire SC sustainability, we study Brazilian coffee global suppliers. We have selected Brazilian suppliers because of their importance in the global market, since Brazil is the largest coffee producer in the world supplying around 32% of the total coffee consumed (Conab, 2021). Thus, two research questions are posed, to first investigate which institutional pressures have motivated suppliers' sustainability certifications and second to explore how these certifications have affected development of supplier sustainability-oriented competences. The research questions are as follows:

*RQ1: Which institutional pressures have pushed emerging economy suppliers to sustainability-related certification adoption?*

*RQ2: How does certification adoption affect the development of emerging economy supplier sustainability-oriented competences in an export-oriented industry?*

By providing new empirical evidence on how global SC sustainability improves due to the development of emerging economy suppliers' competences, this paper makes two main theoretical contributions. *First*, we found that since emerging economy suppliers operate in turbulent environments (Silvestre, 2015), sustainability-related certification adoption that leads to successful competence development relies on inter-organisational cooperation and collaboration between suppliers. *Second*, our findings explain that, beyond coercive pressures, normative and mimetic institutional pressures are crucial in motivating sustainability-related competence development. Both of these insights contribute to the need for further research to understand competences (Bustos and Moors, 2018; Mani et al., 2018). We thereby reinforce the role of certifications as a key source of knowledge and skills for building competences that enable sustainability improvement for the entire SC. These findings emphasise the crucial need to better understand and manage suppliers' sustainability given its impact on global SCs.

The rest of this paper is organised as follows. Section 2 presents the theoretical arguments regarding institutional pressures in supply chains and, consequently, how suppliers' competences emerge for sustainability. Section 3 then provides details about the research method. Next, while Section 4 summarises the findings, Section 5 sheds light on the discussion of the main contributions to theory. Finally, Section 6 provides conclusions, and recommendations for future studies.

## **2. Theoretical Background**

The extant literature includes discussion on ways to improve global suppliers' sustainability. These include: collaboration with other SC members (Bustos and Moors, 2018), research centres, universities and NGOs (Bustos and Moors, 2018; Hajjar et al., 2019) and cooperation among suppliers (Bustos and Moors, 2018; Fontana and Egels-Zanden, 2019). This is usually enabled by certification adoption as this is a source of sustainability learning, competence and competitiveness (Hajjar et al., 2019; Pereira et al., 2021; Silva et al., 2021). However, there are rare studies on how sustainability-oriented competences are connected with positive outcomes, if they are strategically managed (Borland et al., 2016; Galleli and Hourneaux Junior, 2019). This section brings together strands of the prior literature to explore how institutional pressures and competences are related to sustainability certification adoption.

### *2.1. Institutional pressures influencing supplier certification in global supply chains*

As global SCs integrate organisations from different countries, including many from emerging countries, mainly as suppliers (Morais and Silvestre, 2018; Muñoz-Torres et al., 2018), understanding their role in global SC sustainability is important. Often supplier' sustainability initiatives are linked with buyer requirements and SC strategy (Azimifard et al., 2018). In this context, there is evidence that certifications and other standards (e.g., codes of conduct, accreditation programmes) can be a source of competitive advantage to companies particularly if they are in line with the business strategy (Pagell and Wu, 2009; Ponte et al., 2022; Srivastava, 2007). This occurs due to sustainability certifications potential to: improve company reputation, increase employee well-being, generate continuous improvement in practices and reduce costs and environmental impacts (Granly and Welo, 2014; Harjoto et al., 2019; He et al., 2022; Liute and De Giacomo, 2022); to increase productivity and organizational learning (Hajjar et al., 2019; Pereira et al., 2021); and to enhance resilience by preparing suppliers to overcome a crisis (Silva et al., 2022). Hence, certifications have an important role in SC sustainability (i.e., they can improve suppliers' evaluations and lead them to act according to buyers' sustainability standards; Seuring and Müller, 2008). Particularly in a global SC context, previous studies have indicated that emerging economy suppliers have been certified to:

- (i) be assessed and accredited by their international buyers (Bustos and Moors, 2018; Glasbergen, 2018; Mook and Overdeest, 2021);
- (ii) follow their own sustainability strategic orientation (Köksal et al., 2018; Mani and Gunasekaran, 2018; Ponte et al., 2022);
- (iii) learn, and hence improve their process management and competitiveness (Hajjar et al., 2019; Silva et al., 2021); and
- (iv) conform to local government regulations (Fontana and Egels-Zanden, 2019; Köksal et al., 2018; Mani et al., 2018; Nayak et al., 2019).

Certifications are described as a key governance mechanism for international buyers to assess suppliers and increase trust in the context of inter-organisational relationships (Bustos and Moors, 2018; Hajjar et al., 2019; Leon-Bravo et al., 2022). Therefore, the certification adoption varies according to institutional environments and pressures (Fikru, 2014). It is important to understand how institutional pressures operate in emerging economies (Huq and Stevenson, 2020) and their influence on certification adoption (Daddi et al., 2016). Analysed through the institutional isomorphism framework (DiMaggio and Powell, 1983), institutional pressures include three main forces: (i) coercive pressures as related to external influences; (ii) normative pressures linked to a desire for professionalism; and (iii) mimetic pressures which arise as a result of benchmarking among members of the same organisational field (DiMaggio and Powell, 1983). As such, to understand these pressures, we assume the SC as an organisational field as argued by Sayed et al. (2017).

Institutional theory has been frequently used in SC sustainability studies (Fritz et al., 2021). For instance, Glover et al. (2014) identified that sustainability occurs in the UK dairy supply chain primarily due to the coercive influence of the market. Harjoto et al., (2019) also found evidence of coercive pressure motivating companies in the US to obtain sustainability certifications. In addition, Sayed et al. (2017) demonstrated that institutional pressures are guiding sustainability implementation in different ways for each supply chain tier in the UK food industry; whilst Fritz et al. (2021) suggest that all three pressures exist in the context of different industries for family businesses in France, however coercive pressures remain the most dominant. Although some studies have identified different pressures, there is as yet more focus on coercive elements. Therefore, prior studies have concluded that coercive pressures are more evident in motivating sustainability in supply chains in a developed country context (Fritz et al., 2021; Glover et al., 2014; Harjoto et al., 2019).

Within a global supply chain context, there are also some studies that argue that coercive pressures are leading to certification adoption by suppliers in emerging economy countries (Fikru, 2014; Glasbergen, 2018; Hajjar et al., 2019). These studies suggest that within global buyer-supplier relationships, coercion is a key pressure. However, it is argued here that there may be reasons why the emerging economy supplier context may be different and hence other pressures might also apply. For example, in contrast to the buyer context in developed economies with stricter legislation and law enforcement, the emerging economy supplier context has additional complexities (i.e., a lack of infrastructure, low levels of education, corruption, etc.; Silvestre 2015; Silvestre et al., 2020) and weak environmental regulatory systems and enforcement mechanisms (Fikru, 2014). Such complexity suggests the need for further research to explore the role of other institutional pressures because suppliers in emerging economies need to respond to other pressures that are not limited to buyers requests (Léon-Bravo et al., 2022). Thus, despite the important contributions in the prior literature, there are still research gaps to be studied. In particular, there is a need for a clearer reflection on how a multitude of different pressures affect global supplier daily operations in terms of sustainability.

## *2.2. Supplier competences for supply chain sustainability*

Competences can strengthen sustainability in the entire SC given that they can lead to opportunities for companies to access and incorporate resources and abilities from other SC actors through interaction (Gold et al., 2010). In this context, according to Michigan State University Global Logistics Research Team (MSUGLRT, 1995), competences are companies' superior ability to react rapidly to market changes. As

defined by the same team, there is a need to monitor operational performance, select and plan operations, improve internal operations and external SC relationships, all of which are linked to strategic plans. Thus, competences are a set of abilities developed to better conduct an activity; they emerge through multiple experiences (Le Deist and Winterton, 2005; Mills et al., 2002). Competences arise at multiples levels (Spekman et al., 2002); however, they are more commonly studied at the individual level.

The initial studies on competences were introduced by McClelland (1973) and over time have been linked to many management research disciplines (Barnes and Liao, 2012). For example, from a strategic perspective, Prahalad and Hamel (1990) have emphasised the role of competences in the development of organisational strategies and practices. From a supply chain perspective, it has been argued that competences emerge from the integration and collaboration between SC members (Chen et al., 2009; Gold et al., 2010), thereby enabling knowledge sharing, operations improvement, cost reduction (Ellinger et al., 2011), fulfilment of market requirements (Esper et al., 2010) and buyer-supplier trust improvement (Stank et al., 2003). This suggests that competences related to SCs are a key source of competitive advantage (Ellinger et al., 2011; Gold et al., 2010). However, there is a lack of research demonstrating how they emerge at an organisational level and affect the SC in terms of sustainability.

Currently, there is a comprehension that competitive advantages resulting from organisational competences have a positive impact on companies' sustainability. In particular, it has been shown that this results from knowledge building/sharing and improvements in interorganisational relationships (Borland et al., 2016; Gold et al., 2010; Murthy, 2012). Some studies have demonstrated that sustainability strategies require specific competences (Galleli and Hourneaux Jr, 2019; Osagie et al, 2016) and that competences management affects the companies' sustainability (DuBois and Dubois, 2012; Wiek et al., 2011). Thus, to implement SC sustainability strategies, it is necessary to have commitment, awareness and specific knowledge to be sustainably innovative (Osagie et al, 2016). These competences will represent what companies do well and how they deliver value (Le Deist and Winterton, 2005; Ulrich and Dulebohn, 2015), particularly if they are aligned with sustainability strategies.

In this sense, organisational competences are not just a combination of individual competences (Berényi, 2012), but are a set of abilities in line with strategies (Boyatzis, 2009; Prahalad and Hamel, 1990), knowledge building and organisational culture (Flöthmann et al, 2018; Scully-Russ, 2012). As they involve more than cognitive ability (i.e., related to process management and operational activities) and also include skills and attitudes, competences can support companies in their challenges regarding sustainability to enable benefits from sustainability practices (Galleli et al., 2019). To achieve sustainability, they need to be embedded into the company's culture (Scully-Russ, 2012; Vithessonthi, 2009) which requires the development of a vision of sustainability and strategies that change the nature of work, processes and behaviours (Galleli and Hourneaux Jr, 2019). These concepts and values when used to support solutions for environmental and social problems are therefore related to the cultural dimension of sustainability (Fritz and Silva, 2018; Soini and Birkeland, 2014) which includes established traditions and local shared values (León-Bravo et al., 2022).

Competences related to sustainability are often linked to positive outcomes within emerging economy suppliers (Köksal et al., 2018; Hajjar et al., 2019). Specifically, in terms of the economic dimension, sustainability initiatives have enabled cost reduction and competitiveness (Hajjar et al., 2019); whilst in relation to the social dimension, the outcomes have been related to employees' greater well-being such as a reduction of employees' absenteeism and resignation (Tencati et al., 2008), as well as employees'

engagement in sustainability strategies (Diabat et al., 2014) and labour retention (Huq et al., 2014). Environmental aspects are mainly related to reducing unnecessary use of natural resources (Bustos and Moors, 2018; Ras and Vermeulen, 2009). In addition, increases in sustainability learning and awareness have been found to be outcomes of sustainability certifications (Glasbergen, 2018). Despite these results, the literature still does not recognise whether these outcomes are related to individual or organisational competences. Even less clarity exists concerning how such competences affect the SC level (Flöthmann and Hoberg, 2017), although they have been argued to be central for implementing SC sustainability (Gold et al., 2010).

To address these research gaps, this paper examines organisational competences from a suppliers' perspective. Specifically, we investigate supplier experience of certification adoption to promote their sustainability internally and, consequently, in their SC. As certification adoption promotes new sustainability knowledge and improves management tools for competitiveness (Glasbergen, 2018), we study its effects on the development of competences. In addition, we investigate the institutional pressures that impact certification adoption in this context, focusing on the pressures that arise given the environmental turbulences faced by suppliers in emerging economies. Thus, we conceptualise which and how these pressures affect the daily operations of coffee producers located in Brazil.

### **3. Research Method**

This study adopted an exploratory approach with a multiple case study strategy (Ketokivi and Choi, 2014; Yin, 2017) aiming to identify how global coffee suppliers have managed sustainability-related certification adoption and the outcomes from this process regarding competences. This method was chosen due to its potential to allow the obtention of rich data (Eisenhardt and Graebner, 2007) and it can be particularly appropriate and is consequently often employed in SC studies (Seuring, 2008). Thus, in-depth data collection was carried out in order to understand the global supplier's perspective in terms of certification impacts on their competences.

#### *3.1 Case selection criteria*

The Brazilian coffee producer participants were located in the Cerrado Mineiro Region, in the Minas Gerais state, which is an important region in terms of production and export quantities. Producers in this region supply important global SCs, with the coffee certified according to its origin (Coffee from the Cerrado Mineiro Region), and also have a tradition of being innovative and sustainable. This region has around 4500 producers (Região do Cerrado Mineiro, 2020), supplying global SCs for companies such as Nespresso and Illy (Sakkis, 2018).

The participants were selected based on three criteria: (i) being export-oriented, (ii) being a medium or large coffee producer, as they are more involved with sustainability (De Marchi et al., 2012), and (iii) have adopted one or more sustainability-related certification (e.g. UTZ, Rainforest Alliance, ISO 14001). The companies' size is related to hectares planted with the crop as this criterion is based on legislation regarding the Tax on Rural Territorial Property (ITR) and its classification of rural properties. All participants had at least four modules - the minimum size for a rural property to be classified as medium-sized. Each module, in this classification, equals to 40 hectares – corresponding to 160 hectares of coffee plantation area.

### *3.2 Data collection*

For data collection, a total of 33 semi-structured interviews were undertaken with managers. To contact the participants, the “snowball” technique was adopted (Teddlie and Yu, 2007) and the sample therefore was established through this process. Initial interactions were made by calling some managers known by one of the researchers, and from their acceptance and suggestions, further producers were added to the sample. Thus, 20 coffee producer companies were studied in this research. The set of interviews were conducted either face-to-face or by phone, according to the availability of the participant. Table 1 presents participant information as well as the interview lengths. The data gathering occurred at two points in time, November 2019 and October 2020, with the aim to better understand the sustainability initiatives and certification program adoption by coffee producers in Brazil. The data collection had a specific script of questions for each round of interviews and a sample of these questions is presented in the Appendix.

#### *-- Table 1 --*

The interviews were conducted in Portuguese, and recorded and transcribed verbatim, producing a total of 233 pages of interview data. Selected quotations were translated to English to present results. In addition, secondary data was collected between 2019 and 2022 to triangulate the interview information with other sources (Table 2), including: news websites, participants’ online newsletter, websites of participant organisations, cooperatives, Federation of Cerrado Coffee Farmers and of certifiers; all of them related to certification programs adopted by coffee producers in the Cerrado Mineiro region. In total 19 documents were analysed.

#### *-- Table 2 --*

### *3.3 Data analysis and rigour*

Content analysis was carried out to understand the information gathered, as it has been argued to be an appropriate technique to analyse case study data (Mayring, 2004; Seuring, 2008). This procedure was used to understand the empirical findings and their relation to the research questions. To develop the analysis, open coding was carried out centred on identifying which institutional pressures led to certification adoption and the supplier competences built through that process. This first step was essential to generate the initial codes (Strauss and Corbin, 1990). Next, axial coding was conducted by means of a cross-case analysis to identify the final categories of analysis (Strauss and Corbin, 1990). To this end, we used the recursive data analysis approach, suggested by Eisenhardt and Graebner (2007), in which the results were constantly compared with the extant literature. In this final analysis step, the institutional pressures (i.e., coercive, normative and mimetic) following the definitions of DiMaggio and Powell (1983) and the competences were classified using the TBL+ dimensions (i.e., economic, social, environmental, cultural and institutional; Fritz and Silva, 2018).

To ensure research rigour, we applied four trustworthiness criteria: credibility, transferability, dependability, and confirmability (Lincoln and Guba, 1985). The first criterion is often related to reliability and was ensured through using a pre-determined set of interview questions and triangulation of multiple sources (between interviews and

secondary data; Seuring, 2008; Yin, 2017). Additional, credibility was possible using two rounds of interviews to compare managers' viewpoint in two timeframes (see Table 1). Transferability was pursued following two main techniques: cross-case analysis and description of characteristics of the research context. Both criteria are key for case studies (Yin, 2017). In terms of dependability, two members of our research team interpreted our data to ensure consistency of analysis. This approach is closely connected with confirmability in which to avoid bias the interpretation process was completed separately and a cross-check then developed to provide consistency. Therefore, these criteria impacted both the data collection and analysis stages, ensuring research rigour throughout the whole research process.

## 4. Findings

### 4.1. Institutional pressures for certification adoption by suppliers

To investigate suppliers' competences for sustainability, first we highlight key institutional pressures for sustainability implementation by coffee suppliers. In addition to existing coercive pressures such as through buyers and legislation requirements, the *normative* and *mimetic* pressures played significant roles on certification adoption (see evidence from our data presented in the form of sample quotations in Table 3). The normative pressures are related to suppliers' relationships with other suppliers through cooperatives, but also relationships with research institutions and universities. The mimetic pressures link to suppliers' sustainability orientation and goals to improve processes management. All companies adopted at least one sustainability certification—Rainforest or UTZ – and, with the exception of P9, all have the designation of origin (i.e., Coffee of Cerrado Mineiro Region), which is also relevant in terms of sustainability and traceability improvement. Compared with coercive buyer requirements, these two pressures were found to be more central in influencing supplier certification adoption and improvement toward sustainability.

Due to the *normative pressures*, most of the participants achieved and maintained certifications supported by cooperatives. Managers highlighted the existence of “group certification” organised in associations or cooperatives. This option has been crucial for the exchange of experiences and information – such as updates on certification program rules, international market trends and training, thereby enabling suppliers to acquire knowledge. This cooperative environment demonstrates the relevance of cooperation and collaboration in the certification process, in which the organisational exchange of ideas is key, as stated by P12: “*The way is always to talk to someone, exchange ideas, know how the other company does it, how it worked. [...] It is necessary to relate to other producers, have this connection, this exchange of experiences*”. Beyond collaboration and cooperation, they invested in research and innovation (i.e., R&D) to respond to sustainability challenges following certification requirements, which was enabled by partnerships with research institutions (e.g., universities/research centres/NGOs).

The *mimetic pressures* are linked to supplier sustainability orientation and goals to improve processes management. Parallel to the pressure to cooperate from a normative viewpoint, the mimetic behaviour shows the relevance of being part of cooperatives, which was also highlighted by P2: “*Through the experiences exchange with other producers, I could see how their farms and production became more organized. So, I became interested in certifications too*”. This participation in cooperatives led them to horizontal collaboration and knowledge exchange. Thus, mimetic pressures result in benchmarking/relationships among members of the same organisational field, i.e., the SC



(DiMaggio and Powell, 1983). In terms of strategic orientation within the region and improved processes management, the aims to produce sustainably and improve continually were clear in the evidence: “*I want to produce something better for the people who are having our coffee. It is good to know that the thing we are doing here, someone is evaluating and honouring us. So, we want to do better and better. Opening new markets also motivates us*” (P4); “*The certification makes the producer specialized in collecting data to create a history of his crops*” (P6).

**-- Table 3 --**

As shown in Table 3, eight different institutional pressures were identified, with only two of those pressures being coercive. Thus the findings explain that mimetic and normative pressures were more relevant, although coercive pressures can also be identified. These pressures are vital to understand the global supplier sustainability competences, as presented in the following section.

#### *4.2. Supplier sustainability competences*

Beyond analysing supplier certification adoption from a management viewpoint, it is necessary to identify which competences were developed during this process. In this study eight competences were evidenced related to sustainability certifications. Table 4 shows each competence according to the TBL+ sustainability dimensions, as follow:

- *Economic dimension*: the competence of better financial management was strengthened. Managers mainly highlighted how they can now better analyse their companies’ data and reduce costs. They mentioned the relevance of this for organizations and SCs, as they are now able to reduce losses, use of pesticides and the production costs.
- *Environmental dimension*: they developed competence to better manage environmental resources in terms of reducing the negative impacts of their operation. Managers recognised the relevance of such a reduction of harm, which went beyond awareness and turned into new abilities.
- *Social dimension*: the competences built within this dimension involved better human resources management as linked to employees’ retention and increasing worker motivation. As the employees became more connected and felt more ownership of the company activities, they became more engaged with studies and courses related to their work. Consequently, they became better qualified. Managers indicated that this has benefits within the SC as when buyers visit companies and see employees/teams more motivated, this promotes trust between them and the entire SC.
- *Cultural dimension*: competence developed here was an improvement in the sustainability culture management related to the sustainable behaviour of workers in these companies which also positively affects buyer trust. This cultural competence demonstrates how companies became able to change sustainability mindsets/ behaviours.
- *Institutional dimension*: several competences fit within this dimension and are related to sustainability knowledge, which involved the strengthening of the sustainability strategic orientation and improvement of management in: processes, negotiation, inter-organisational relationships, organisational learning and continuous improvement management. Their sustainability

orientation was consolidated as managers recognised continuous ability development and positive outcomes from operating in this way.

For each competence listed, the related pressures for certification are also presented in Table 4, thereby demonstrating the effects of those pressures on supplier competence development. For example, the adoption of sustainability certification highlights the ‘need for improved processes management’ (identified in section 4.1 as a mimetic pressure), which led to the “financial management” competence by many suppliers. Another example is the emergence of the competence “continuous improvement” as a result of the normative pressure of ‘group certification monitored by cooperatives’ (Table 3). The evidence thus suggests that, without all the components of the certification processes, managers would not be incentivised to gain new abilities such as the financial management and continuous improvement abilities. This indicates that in one way or another certification adoption emerged as a source of competence in the findings.

**-- Table 4 --**

Table 4 summarises how mimetic pressures are key to sustainability certification adoption in the coffee SC in analysis, mainly because of the cooperative elements that exist locally. One interpretation for this result is the need for further collaboration for sustainability among SC members within a cooperative SC configuration (Silva et al., 2021). Additionally, we note that the highlighted competences are related to daily operational activities which engage both the individual and organisational levels in changes that will affect SC sustainability performance. Therefore, the findings indicate that managers recognise certification programs as guides for companies’ sustainability management, as well as individual actions/behaviours and as tools that have given them many competitive advantages. For example, P9 argued that: *“Certifications operationalise the culture of sustainability. They enable values to transform into practices”*.

Finally, we highlight our evidence of supplier recognition of competitive advantage gained due to certification adoption and competence development. For instance, P1, P5 and P9 stated that: *“We’ve won on both sides, with sales and with better internal organization. So, we only have gains. I do not see anything negative about certification”* (P1). *“We believe that this is the way to go ahead and we do not intend going back. This is the way. This is a matter of order. Whoever is not more and more sustainable will be out and I want to continue. It has to be more and more sustainable”* (P5). *“I only see positive outcomes and we only are here because we chose to be sustainable from the outset”* (P9). In addition, Table 4 provides further evidence of the competitive advantage obtained from certifications: *“UTZ certification is a recognition of the improvement we have made and a means to ensure that our coffee is more competitive in international markets, opening doors for us to win new customers”* (Document 15, Online news, 2021). Overall, our findings reinforce the effects of institutional pressures on developing sustainability competences for these suppliers. The findings show, therefore, that participants perceive that their resultant competences from certification implementation enable and prepare them to perform better in the international market.

## 5. Discussion

Through the study of supplier competences for sustainability, this paper analysed the influence of institutional pressures on sustainability certification adoption in the Brazilian coffee production context. Our findings show that despite producer sustainability certification adoption being influenced by all three institutional pressures, the *mimetic* and *normative* pressures were the most highlighted. As shown in Table 3, while *mimetic* pressures were found to be related to their sustainability strategic orientation within the region and goal to improve company general management (e.g., they have DO - Designation of Origin – associated with the Cerrado Mineiro Region which indicates that they produce differentiated coffees with increasingly sustainable practices), the central *normative* pressures are related to collaborations and knowledge exchange (e.g., they are certified in groups of producers and cooperatives have been essential to this horizontal collaboration). Unlike previous literature that has emphasised the importance of coercive pressures as the most relevant for SC sustainability either in the buyer context (Glover et al., 2014; Harjoto et al., 2019; Sayed et al., 2017; Fritz et al., 2021) or the supplier context (Fikru, 2014; Atupola and Gunarathne, 2022), our findings show that competences result primarily from other institutional pressures. This is because emerging economy suppliers face additional complexities to operate sustainably due to their institutional environment as discussed in section 2.1 above; and consequently, it is other institutional pressures that lead them to adopt certifications, which go beyond the buyers' requests (León-Bravo et al., 2022). Following this perspective, suppliers learn new competences to manage their sustainability. Therefore, our findings corroborate the literature understanding on how emerging economy global suppliers' sustainability is attributed to certifications (Hajjar et al., 2019) and add to this literature by demonstrating that the pressures perceived by the suppliers themselves are not the same as those assumed by their buyers. Thus, the first proposition is:

*P1: From an emerging economy suppliers' perspective, mimetic and normative pressures are the main influencers on certification adoption, due to additional complexities to operate sustainably in their institutional environment.*

Further this analysis highlights the relevance of inter-organisational relationships in an emerging country context. As illustrated in Table 3, Brazilian coffee producers have embraced group certification monitored by cooperatives and have also established partnerships to exchange sustainability knowledge/learning. Despite the negative viewpoint of certification programs highlighted in the literature (Hajjar et al., 2019; Koster et al., 2019; Montiel et al., 2016), in the studied context, managers recognise only positive sustainability-related effects from this standardisation as a result of the inter-organisational relationships to which they belong. As suppliers obtained more visibility due to certifications, they gained legitimacy and reliability improving relationships and negotiation power (Hajjar et al., 2019; Köksal et al., 2018), as well as sustainability knowledge and abilities (Glasbergen, 2018; Huq et al., 2014; Koster et al., 2019; Pereira et al., 2021). Our findings add to this prior literature by demonstrating that all of these positive outcomes have strengthened their sustainability competence development. In addition, we found evidence of a virtuous circle of sustainability learning given that the participants referred to their certifications as a source of constant learning (see Table 3). For example, certifications have generated financial management competences which facilitate effective future cost scenario planning. Also, certifications have stimulated collaboration with partners to learn further environmental management competences. We

therefore found that certifications improve performance because they enable positive feedback, which leads to further development of inter-organisational relationships as well as company sustainability competences. Thus the virtuous circle of sustainability learning is rooted in: (1) the shared experiences with other suppliers through cooperatives and; in (2) having partnerships with research centres that has provided constant sustainability learning to support their skills development towards certification-related achievements and maintenance as well as to better manage their companies. Given these perceived benefits, they are keen to maintain their engagement in these inter-organisational relationships. Thus, the second proposition is:

*P2: The benefits obtained from certification program adoption strengthen emerging economy suppliers' inter-organisational relationships towards a virtuous circle of sustainability learning.*

These findings also reveal new nuances associated with emerging economy suppliers' certification adoption. In particular, the findings illustrate how sustainability has been developing throughout global SCs, given that the evidence is broadly linked to SC competence development. This is achieved by firstly demonstrating the building of supplier competences as a result of sustainability certifications; and secondly providing evidence to reinforce the literature regarding how competences can affect positively the entire SC (Barnes and Liao, 2012; Flöthmann and Hoberg, 2017; Gold et al., 2010); as well as thirdly improving understanding on the role of emerging economy suppliers in this context (Jia et al., 2018; Leon-Bravo et al., 2022). In this sense, this research strengthens the argument that successful implementation of sustainability strategies requires the development of specific competences (Galleli and Hourneaux Junior, 2019; Osagie et al, 2016) to improve SC sustainability.

The identified competences have been developed through certification adoption and have improved the supplier performance outcomes in the context of certification adoption, given that suppliers have thereby attained the necessary abilities and knowledge. These developed competences are linked to all TBL+ aspects, however, they experienced a particularly strong improvement in the institutional elements. The competences built seem to be largely related to cooperation and collaboration adoption - a special source of knowledge through sharing of experience (Hargadon and Sutton, 1997) - as the studied companies look to use these mechanisms as the main means to achieve certifications as well as to overcome barriers in their sustainability-related performance improvement trajectory. These competences, therefore, can improve global SC sustainability and enable emerging economy suppliers to be better prepared to respond to international market demands regarding sustainability. This leads to the SC becoming better-structured as the competences enable: the reduction of environmental damage; improvements in social and labour conditions; information sharing throughout the SC (Hajjar et al., 2019); and improvement of trust among SC partners (Bustos and Moors, 2018). These findings therefore lead to a third proposition, as follows:

*P3: Certification adoption by emerging economy suppliers builds their competences, thereby improving their ability to attain sustainability goals for the entire SC.*

In summary, this study provides evidence that emerging economy global suppliers have benefited from certification program adoption, adding novel evidence to studies of Bloom (2015), Hajjar et al. (2019) and Köksal et al. (2018) who also found that certified companies had positive effects on their sustainability. Thus, certification programs have

acted in this context as sources of knowledge guiding suppliers' sustainability-related learning and leading them to develop competences and be motivated to engage in more strategies. Figure 1 illustrates this summary of the findings showing how institutional pressures influence global suppliers to adopt sustainability certification and that this adoption process in turn affects suppliers' competences.

-- Figure 1 --

As shown in Figure 1, institutional pressures, mainly mimetic and normative, influence inter-organisational relationships, especially those involving cooperatives, NGOs, research centres and universities. In this context, a virtuous circle of sustainability learning emerges from certification adoption which has a direct influence on sustainability competences (i.e. financial management, management of environmental impacts, human resource management, implementation and management of sustainability culture, strengthening of sustainability strategic orientation, processes management, negotiation and continuous improvement). Overall, therefore, we conclude that global supplier competence development relies primarily on mimetic and normative institutional pressures to adopt sustainability certification, with coercive pressures playing a more minor role.

## **6. Conclusions and further studies**

This paper investigates the institutional pressures that have led emerging economy global suppliers to adopt sustainability certification and how these certifications have then affected these suppliers in terms of competence building. The findings demonstrate that these certification programs arise mostly as a result of mimetic and normative institutional pressures. It can therefore be concluded that these standardizations have positively affected Brazilian coffee producers in terms of sustainability and competence development. Thus, this research contributes to the literature regarding global SC sustainability since the findings provide evidence of positive supplier perceptions regarding certification programs, as they highlighted the resultant benefits in terms of knowledge attained and sources of competitive advantage. The findings also evidenced supplier intention to secure their certifications by further improving aspects of their management abilities and competitiveness. This paper therefore advances the studies regarding emerging economy supplier competences and their influence on global SCs sustainability as well as the role of certification programs in this specific context.

*Theoretical implications* emerged during this research. Firstly, a better understanding arises on which institutional pressures motivate the adoption of certification programs by emerging economy global suppliers. Thus, these suppliers strengthen inter-organizational relationships to assist them in achieving the necessary knowledge to be certified, with this collaboration being a key strategic mechanism for sustainability competence building. Secondly, the benefits obtained as a result of this certification adoption have been shown to relate to all TBL+ sustainability dimensions, leading to positive feedback loops motivating further improvements in their strategic orientation and continued engagement with these certifications which also strengthens the institutional pressures towards certification. This indicates therefore that certification adoption has improved their sustainability culture (i.e., they have implemented and have maintained a sustainability culture) as well as having been a source of competitive advantage (e.g., improvement in their management skills and reputation). Thus this study demonstrates positive outcomes from certification programs acting as new drivers for

emerging economy global suppliers' sustainability, which in turn benefits the sustainability of the entire SC. Thirdly, the findings reveal that the role of certification programs goes beyond being a tool for buyers to assess suppliers, by also acting as a rich source of knowledge and competence building for organizations and consequently for SCs.

*Managerial implications* relate to certification program relevance in an emerging economy supplier context, mainly as linked to sustainability competences development. The findings suggest that collaboration among suppliers has been relevant to strengthen their skills and knowledge to be certified and consequently build competences to surpass barriers as well as to increase their sustainability and reputation in global SCs. Thus sustainability certification seems here as a key factor to suppliers learning. Managers should, therefore, explore such a collaboration to retain competences internally and across cooperative members. This would be possible by sharing knowledge and experiences about the emerging competences, as they can learn with each other. This research also has both *policy and social implications*. In terms of *policy implications*, this study highlighted the importance of policies to invest in research and educational institutions which have supported companies sustainability knowledge development and sharing. In terms of *social implications*, this study highlights the relevance of certifications in building companies sustainability competences which impact positively on employee health and safety as well as improvements in their sustainability awareness.

The main limitation of this study is that only managers' perspectives were analysed, while other SC member (e.g., employee, buyer) viewpoints were not considered. As this study focused on certified coffee producers, it would be interesting to conduct a further study with non-certified producers to analyse differences/ similarities between their knowledge, processes, trust, culture and the consequent approaches for building competences related to SC sustainability. In particular, it would be important to understand the institutional pressures that have influenced their decision not to adopt certifications. This would enable companies and SCs to reflect on the value add of certification programs compared with alternative means of attempting to improve sustainability. Further research should also consider different global SC stakeholders, including buyers, certifiers, employees, partners (e.g., research institutions, NGOs and consultancy companies) to obtain other perspectives on how certification programs adopted by suppliers have been implemented/maintained, as well as the outcomes for these stakeholders. More broadly, in regard to emerging economy global suppliers' competences and their relation to SC sustainability, further studies should be conducted with other global SC participants to better understand the effect of certifications on the development of competences at the SC level as well as on actors in different SC tiers.

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## **Appendix - Interviews Scripts**

### **Script of the first round of interviews**

1. Do you believe that your company operates sustainably? If yes, how do your actions achieve this?
2. How has sustainability been managed within the organization?
3. Do you have any sustainability certification? Which ones?
4. What were the reasons that led you to adopt this (those) certification program(s)?
5. Do you think that your buyers/focal company influence your sustainability performance/initiatives?
6. How do the buyers/focal company assess/monitor its sustainable performance?
7. What do you think most encourages your company to operate sustainably? What are the main incentives for this?
8. Do you think that being part of a global supply chain is relevant for your company to operate more sustainably?
9. Do you think that partnerships or cooperation (with other members of the supply chain or with other producers, research centres, universities) affect your company to act more sustainably? Could you give examples?]
10. Have you obtained positive or negative results from sustainability initiatives and adoption of certification programs? Could you give examples?
11. Do you think you obtained knowledge/skills or particularly created competences by adopting certification programs? Could you give examples?

### **Script of the second round of interviews**

1. Could you explain the reasons why the sustainability certifications were implemented?
2. Did you face any difficulties during the certification process? Could you give examples?
3. Has your company been certified in groups? If so, how do you believe that this is significant?
4. In the certifications' trajectory, what was (and what continues to be) the most important factor to obtain/maintain certifications?
5. Do you think your company has been improved/developed and learned from the process of obtaining/maintaining certifications?
6. Considering the entire supply chain, do you think that certifications also benefit the other actors/tiers? How? Could you give examples?

**Table 1** – Information of companies, participants and their certification programs adopted

Participant	Production size (hectares)	Time as company manager	Sustainability certification programs and designation of origin	Interview November 2019	Interview October 2020
P1	Medium	07 years	Rainforest, DO	30 min	43 min
P2	Medium	05 years	UTZ, Rainforest, DO	43 min	29 min
P3	Medium	18 years	UTZ, Rainforest, DO	54 min	48 min
P4	Large	04 years	Rainforest, DO	27 min	-
P5	Large	33 years	UTZ, Rainforest, DO	25 min	28 min
P6	Medium	06 years	UTZ, DO	72 min	44 min
P7	Large	35 years	UTZ, Rainforest, DO	33 min	-
P8	Large	32 years	UTZ, Rainforest, DO	27 min	-
P9	Large	16 years	UTZ, Rainforest, ISO 14001, Certified B, Organic	33 min	41 min
P10	Large	15 years	Rainforest, ISO 14001, DO	67 min	-
P11	Large	06 years	UTZ, Rainforest, DO	34 min	-
P12	Large	02 years	Rainforest, DO	23 min	31 min
P13	Large	10 years	UTZ, DO	39 min	44 min
P14	Medium	28 years	UTZ, DO	25 min	31 min
P15	Large	40 years	Rainforest, DO	33 min	-
P16	Medium	02 years	UTZ, DO	27 min	29 min
P17	Medium	43 years	Rainforest, DO	31 min	-
P18	Medium	09 years	Rainforest, DO	33 min	38 min
P19	Medium	17 years	UTZ, DO	39 min	33 min
P20	Medium	08 years	Rainforest, DO	22 min	34 min
Total:	-	-	-	717 min	473 min

DO: Designation of origin certification (Coffee of Cerrado Mineiro Region); Medium: between 4 and 15 modules; Large: more than 15 modules. Each module, in the Cerrado Mineiro Region, is equivalent to 40 hectares.

**Table 2** – Secondary data sources

Document	Source	Year	Description
1	Online news	2017	This press article highlighted how coffee producers operated sustainably and the associated benefits obtained.
2	Online newsletter	2019	This newsletter explains the culture of sustainability in coffee production in the Cerrado Mineiro region.
3	Online news	2019	In this press article, the certifier presents the benefits obtained by coffee producers by adoption of its certification.
4	Online news	2019	This press article explains how certified coffees have a better reputation in the global market.
5	Technical document	2019	In this document a cooperative of coffee producers presents the benefits of certifications they have obtained.
6	Online news	2019	This press article presents the most sustainable coffee producers and explains how they have achieved this sustainability.
7	Online news	2020	This press article describes the sustainability initiatives of coffee producers and their impact on competitive advantages.
8	Online news	2020	This press article explains the sustainability initiatives of coffee producers and their connection with certification adoption.

9	Online news	2020	This press article explains the relevance of sustainability certification for coffee exportation.
10	Online news	2020	This press article explains how coffee producers have achieved high scores in sustainability certifications and the associated benefits.
11	Online news	2021	In this press article a national research centre presents environmental benefits from certification adoption by coffee producers.
12	Online news	2021	This press article presents coffee producer viewpoints of sustainability certification adoption and maintenance.
13	Online news	2021	In this press article an organization of coffee producers explains how certifications have been managed and the associated positive outcomes.
14	Scientific paper	2021	This paper presents a study on the relevance of co-operatives and certification within the coffee culture.
15	Online news	2021	In this press article a national sustainability institution explains how coffee producers have obtained competitive advantage from their sustainability initiatives.
16	Online news	2021	In this press article a national sustainability institution presents the R&D investments by coffee producers and how they have contributed to sustainability in this field.
17	Online news	2022	This press article presents farms that produced coffee through regenerative agriculture processes.
18	Online news	2022	This press article presents discussion on the relevance of regenerative agriculture and certifications for sustainability in coffee production.
19	Online news	2022	This press article presents farms that produced coffee through regenerative agriculture processes and the relevance of cooperatives and certifications in this context.

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**Table 3** – Institutional pressures for sustainability certification adoption by suppliers

<b>PRESSURE</b>	<b>TYPE</b>	<b>SAMPLE QUOTES FROM THE EVIDENCE</b>	<b>CASE SOURCES</b>
Coercive	Buyers requirements	<p>[...] it is a market requirement and the consumer too, right? So, whoever does not have this idea, this attitude of being more sustainable and more transparent in everything he does on the farm every day, he will be the last to have preference by buyers. (P5)</p> <p>Companies buy our coffee only if we have UTZ or Rainforest certification. These are the main two. (P8)</p> <p>They are looking if we have any certification. Having certification, it is already a guarantee for them. The international market is more worried about sustainability aspects. (P12)</p> <p>Coffee buyers also encourage this multi-certification, as for commercialization in the foreign market, different certifications can open new markets. (Document 5, Technical document, 2019)</p> <p>One of the incentives to get certified was when I sold my coffee to a company in France and they asked me if I had anything aimed at regenerative agriculture. The replacement of chemical fertilizers and pesticides with organic ones, among other sustainable practices, was already a reality on my farm and, with the customer's question, I decided to seek an internationally recognized certification that confirmed what we were already doing this in practice. (Document 17, Online news, 2022)</p>	P1, P2, P4, P5, P7, P8, P10, P11, P12
	Local legislation requirements	<p>Here in Brazil, the laws are very strict. Here in Brazil the laws are very heavy in relation to other coffee producer countries. They check a lot. The Ministry of Labour also carries out very heavy inspections. Certification requirements are compatible with the law because the law is already very heavy. (P5)</p> <p>They follow forest legislation and certification rules [...]. Coffee cultivation is avoided in permanent preservation areas but requires ecological compensation areas and management alternative. (Document 7, Online News, 2020)</p>	P1, P2, P3, P5, P6, P7, P8
Mimetic	Strategic orientation within the region	<p>In the Cerrado Mineiro Region we have as part of our purpose produced differentiated coffees, with increasingly sustainable practices. It is essential that our products aim at the recognition of our producers and the development of the region. The certification of origin supports this strategy. (Document 2, Online newsletter, 2019)</p> <p>It was not difficult to obtain certification. Since sustainable practices are present in the production of coffee growers in the Cerrado Mineiro. [...] I did not have many difficulties in obtaining certification, because for the coffee growers in this region, the transition to responsible coffee production has been happening naturally for some years. (Document 19, Online news, 2022)</p>	P1, P2, P4, P5, P6, P9, P10, P12, P15, P17
	Relevance of cooperatives	<p>It is very important to participate in the cooperative. From this interaction with other producers, I can learn from their experience and we have the orientation to improve our certifications scores. (P8)</p> <p>The cooperative is essential. There we have guidance and can share with others the barriers we need to surpass as well as the experience we had with certifications. (P13)</p> <p>I always talk to someone. It is important to know how the other producer does things, how things worked well. [...] This dialogue with other producers is very important. We have a connection. This exchange of experiences on certifications is important as well. (P17)</p> <p>The cooperative's work with coffee growers also includes environmental and social aspects, such as care for fauna and flora, water resources, soil quality, level of management, rational use of inputs, pesticides and gas emissions from each farm. [...] All these aspects are evaluated within the scope of the Rainforest Alliance socio-environmental certification that the cooperative has - issued and periodically evaluated by Imaflora. (Document 12, Online news, 2021)</p> <p>Cooperatives played a central role in the search for recognition by geographic attributes of the products and, also, in the coordination of the achievement of certification in this region. (Document 1, Online news, 2017)</p>	P2, P4, P7, P8, P10, P11, P13, P17
	Need for improved	<p>It is good to have someone guiding you, asking you, for we have not yet become accomplished. (P4).</p> <p>Sustainability in agricultural production, especially in the coffee segment, aims to adopt good practices, at all levels, in order to generate environmental, social and economic preservation and quality for all involved. (Document 17, Online news, 2022)</p>	P1, P4, P6, P7, P8, P9, P11, P13, P18, P19



	processes management	This certification aims to improve the quality of coffee produced in the state, encouraging properties to adopt good agricultural practices at all stages of production, meeting environmental and labour standards, which guarantees the end consumer a differentiated coffee. (Document 14, Scientific paper, 2021)	
Normative	Group certifications monitored by cooperatives	<p>I have been certified together with other producers. This partnership with the cooperative is essential, they guide us on certifications and often help us to train employees. (P2)</p> <p>We have a group in the cooperative coordinated by it. An environment for exchanging experiences. This is very good. Positive. (P6)</p> <p>Cooperatives have essential roles for certifications. They support the certified producers - individually or in groups - on certifications achievement, maintenance, and improvement. (Document 7, Online News, 2020)</p> <p>Cooperatives help to make contracts for the supply of Café do Cerrado directly with customers, without having to go through intermediaries. (Document 6, Online news, 2019)</p>	P1, P2, P3, P4, P5, P6, P7, P8, P10, P12, P15, P16, P17, P19
	Partnership with universities, research centres and NGOs	<p>We have partnership with UFV [Federal University of Viçosa], we do a lot of research together. (P1)</p> <p>We participate in environmental projects with the NGO CONSUB, which works directly with environmental education issues in the Region of Cerrado. (P3)</p> <p>We have research laboratories and we also work in partnership with universities. (P9)</p> <p>We value and care for these partnerships. Without collaboration, it would be much more difficult to manage the company. We need each other. (P12)</p> <p>Sebrae/MG [public institution] supports the processes of certification of properties and geoprocessing. About 250 producers in the Cerrado region of Minas Gerais are directly assisted with technical and management consultancy from the Educampo Project. Producers receive training, implement controls and procedures to guarantee quality production and are made aware that they manage a rural company. The objective is to make the activity more competitive. (Document 3, Online news, 2019)</p>	P1, P3, P4, P5, P7, P9, P10, P12, P15, P16, P20
	Research and innovation (i.e., R&D)	<p>We have a research laboratory on biological solutions against pests. (P3)</p> <p>We have research on electromagnetic water to see if we can reduce the use of water in irrigation. [...] We are also doing a study on nematode varieties in partnership with Epamig, in search of existing varieties and to be able to publicize for other producers too, not only for the farm, but also for a regional effect [...] all of this is precisely to rationalize the use of both water and chemical pesticides. We also have a micro factory of biological materials, where we use many bacteria and fungi on the farm, in a natural way, to reduce the pesticides use. (P5)</p> <p>We have many partners such as Embrapa and universities to conduct experiments and research to respond to many questions related to our sustainability issues. (Document 16, Online news, 2021)</p>	P3, P5, P9, P10, P11, P14, P15, P16, P18

**Table 4 – Supplier competences developed through certification programs adoption**

<b>Competence</b>	<b>Sample of key quotations</b>	<b>Evidence</b>	<b>Sustainability Dimension</b>	<b>Certification related pressures</b>
<b>Financial management</b>	<p>We manage our resources well. Certification guides the farm to carry out its practices more sustainably and well organized. This better organization improves the management of costs. (P1)</p> <p>Certifications made me into an expert [i.e., to have the competence] in collecting and organizing data about our coffee. So it is now possible to better manage processes and the financial part. This benefits the entire chain. (P6)</p> <p>I learned a lot about management from the certification process. Today, I can predict better scenarios, manage my costs better. (P17)</p> <p>Financial control was highlighted as relevant for 75% of producers as they improved company's accounting of their property through the adoption of certification programs. (Document 6, Online news, 2019)</p>	P1, P2, P3, P4, P5, P6, P9, P12, P17, P18, P19, P20	Economic	Need for improved processes Management (Mimetic pressure)
<b>Management of environmental impacts</b>	<p>We can manage to use less water for irrigation and recycle all the produced waste. (P5)</p> <p>Today we use less chemicals. Biological solutions help a lot. [...] the partnerships with research centres and universities helps us a lot, mainly to respond to questions related to reducing environmental impacts. (P9)</p> <p>We have been using less and less herbicides. (P15)</p> <p>We reduced the use of chemical pesticides to enable the regeneration of the biological life of the soil and plants on the farm. (Document 17, Online news, 2022)</p> <p>This certification validates the sustainable practices we have carried out on the farmer's property for more than three years, with a focus on increasing soil health, stimulating biodiversity, controlling greenhouse gas emissions and carbon sequestration. (Document 19, Online news, 2022)</p>	P1, P2, P3, P4, P5, P6, P7, P9, P10, P12, P15, P18, P19	Environmental	Local legislation requirements (Coercive pressure)  Partnership with universities, research centres and NGOs (Normative pressure)
<b>Human resources management</b>	<p>We have heard from the people who work with us that here is one of the best places to work. So, we were glad about this feedback. (P3)</p> <p>With certification, management is improved with a close look at labour legislation and focus on team awareness on hygiene, health and the environment. (Document 10, Online news, 2020)</p>	P1, P3, P4, P5, P7, P8, P9, P10, P11, P12, P13, P16, P17, P20	Social	Strategic orientation within the region (Mimetic pressure)
<b>Implementation and management of sustainability culture</b>	<p>Some of them [workers] say that what they learn about sustainability here, they also practice in their daily lives. (P9)</p> <p>In all our meetings we discuss how actions/plans can be more sustainable and motivate our buyers to do the same. [...] For example, we are motivating the non-certified buyers to certify as well as to reduce their carbon footprint. (P10)</p> <p>Sustainability is part of our daily routine now. [...] We try to consider sustainability in all of our decisions. (P12)</p> <p>We changed behaviours here through certification implementation. They actually reveal we are working well now and our buyers can see this. (P17)</p>	P1, P2, P3, P5, P6, P9, P10, P12, P15, P16, P17, P19	Cultural	Strategic orientation within the region (Mimetic pressure)  Need for improved processes management (Mimetic pressure)

<b>Strengthening of sustainability strategic orientation</b>	<p>As we become more aware and act more in line with certification requirements, I think we are improving sustainability for the entire chain. (P5)</p> <p>Certifications help me a lot. I can see sustainability principles increasingly in our actions. (P10)</p> <p>There has to be a continuation. We produce sustainably and now we all understand that we will produce for many years without harming the environment and people. (P11)</p> <p>We know that the company is growing through sustainability, that the business will only improve if it is sustainable. It is the present and it is the future. (P12)</p> <p>It is a path of no return. Sustainability and quality, I learned that it is a path of no return. (P15)</p> <p>A new world of coffee is emerging [...] new ways of thinking and acting, of producing and doing business, to conquer appreciation and recognition. We believe that the Cerrado Mineiro Region has this potential, and we are preparing ourselves for this challenge: making the Cerrado Mineiro Region a reference of “attitude” to the new world of coffee, in terms of producers, region and products. (Document 15, Online news, 2021)</p>	<p>P2, P5, P8, P9, P10, P11, P12, P13, P14, P15, P18, P19</p>	<p>Institutional</p>	<p>Strategic orientation within the region (Mimetic pressure)</p>
<b>Processes management</b>	<p>The certifications help me a lot to better manage the processes. (P3)</p> <p>Something very important that certification brought to the work environment is the improvement on organization, cleanliness, organization of processes. (P6)</p> <p>The certifications helped us to turn our principles into actions, helped us to organize our processes in a sustainable way. It operationalized our principles. (P9)</p> <p>Certification helps us a lot because everything is very detailed and I am more organized and detailed. (P19)</p> <p>Certifications have brought positive effects on practices of property management, the final quality of the product, on the productivity and also adoption of technologies in coffee properties in Cerrado Mineiro (Document 1, Online news, 2022)</p> <p>From certification adoption, the business has a more professional administration. (Document 19, Online news, 2022)</p>	<p>P1, P3, P4, P5, P6, P7, P9, P10, P11, P12, P13, P14, P15, P19, P20</p>	<p>Institutional</p>	<p>Improve processes management (Mimetic pressure)</p>
<b>Negotiation</b>	<p>Today we have a name in the market. We are recognized as a responsible company, a company that has the preference of buyers. We have credibility to negotiate future sales up to 3 years ahead. All of this makes it easier to provide both good social conditions for our employees and good environmental conditions. (P5)</p> <p>[...] if our company had none of the sustainability certifications, our customers would still believe in us because they come here and see it. We have heard a lot like this: I do not care about the certification you have, because I have already seen what you do. What you do, for me, is truer than certification says. The relationship is informal and based on trust. They come, visit the farm and draw their own conclusions. (P9)</p> <p>Today our farm is booming. We did not have that before. With certifications and specialty coffees, customers look for us. They want to know the origin of the coffee, meet the producers and it is really cool. I think it is an acknowledgment due to certifications as well. They have led it. (P12)</p> <p>UTZ certification is a recognition of the improvement we have made and a means to ensure that our coffee is more competitive in international markets, opening doors for us to win new customers. (Document 15, Online news, 2021)</p>	<p>P1, P3, P4, P5, P9, P10, P11, P12, P17, P19, P20</p>	<p>Institutional</p>	<p>Strategic orientation within the region (Mimetic pressure)</p> <p>Need for improved processes management (Mimetic pressure)</p>

<b>Continuous improvement</b>	<p>We have a continuous improvement attitude towards sustainability. We achieve one thing and we are already thinking about another and we are going on this upward exponential curve. (P9)</p> <p>We are on a path of continuous improvement. (P11)</p> <p>We are going the right way, learning, reaping the rewards and moving on. [...] the group certification leads us to improve constantly our managerial and sustainability abilities through the interactions between producers. (P12)</p>	<p>P1, P4, P5, P7, P9, P11, P12, P15, P16, P17, P18, P20</p>	<p>Institutional</p>	<p>Partnership with universities, research centres and NGOs (Normative pressure)</p> <p>Group Certification monitored by cooperatives (Normative pressure)</p>
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