

Contributions of social capital to supply chain sustainability practices: Conceptual framework and propositions

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ABSTRACT

The integration of sustainability dimensions as part of supply chain management represents a constant challenge for companies. This happens because to address supply chain sustainability (SCS), companies need to know how collective behaviours are present in their supply chain practices (e.g. cooperation, coordination, collaboration). However, this is easier said than done. Therefore, through the lens of social capital theory (SCT), this paper elaborates on how SCS practices among supply chain members can enhance sustainability outcomes. Through an iterative theory-building process, we explored the integration between SCT and SCS in this conceptual paper. The argumentation shows that beyond direct causality relations employed, social capital can strengthen SCS practices to create value among supply chain members. This becomes possible through a combination of collaboration initiatives and supply chain learning. This paper contributes to the theory by offering a conceptual framework and a set of propositions for an alternative way to understand SCS practice. Additionally, this paper provides practical contributions by showing how managers can integrate sustainability into their daily operations.

1. Introduction

Amidst the growing relevance of sustainability research in supply chain management (SCM) studies, a need to rethink companies' priorities beyond economic interest exists (Gold and Schleper, 2017). To do so, after 20 years, the triple bottom line (TBL) has been questioned by Elkington himself, as TBL and its subsequent variants cannot emphasise only profit and loss (Elkington, 2018). Hence, the complexity surrounding supply chains and the planetary boundaries requires the consideration of other elements beyond TBL (Matthews et al., 2016; Montabon et al., 2016), such as cultural and institutional that comprise the TBL+ (Fritz and Silva, 2018). Therefore, we offer in this conceptual paper new insights into how TBL + integration must occur in the management of activities and the flow and control of material and information from supplier to consumer (Ansari and Kant, 2017a; Beske and Seuring, 2014). To explore such a perspective, we theorise on the contributions of social capital theory (SCT) to supply chain sustainability (SCS) practices.

The SCS literature has grown in recent years, and there is still much research to be explored (Ansari and Kant, 2017a; Carter et al., 2019). As observed, sustainability emerges by using supply chain members' collective practices (Chen et al., 2017; Dias et al., 2023). Therefore, the depth and quality of relationships among supply chain members are facilitated when commitment exist and sustainable practices are developed related to SCS (Simões-Coelho and Figueira, 2021; Touboulic and Walker, 2015a). The literature provides several collective practices towards SCS, such as: cooperation (Bastas and Liyanage, 2018; Gold et al., 2010), coordination (Gulati et al., 2012), collaboration (Bastas and Liyanage, 2018; Beske and Seuring, 2014; Touboulic and Walker, 2015b), information sharing (Ansari and Kant, 2017b; Bastas and Liyanage, 2018; Pagell and Wu, 2009) and resource exchange (Hong et al., 2018). However, these practices have been treated separately and deserve further attention as SCT may support interconnections among SCS practices that were not mapped yet.

Within these practices, collaboration rises as a core practice used to introduce SCS (Beske and Seuring, 2014; Chen et al., 2017; Gold et al.,

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2010; Touboulic and Walker, 2015a). This happens because collaboration is essential to enhancing company's competitive advantage (Beske and Seuring, 2014; Gold et al., 2010) and the engagement of supply chain members (Touboulic and Walker, 2015a). Despite that, majority of studies about collaboration are centred in stakeholder theory and resourced-based view (Chen et al., 2017; Dias and Silva, 2022), which opens the door to explore other theories such as SCT, which remains underexplored (Ansari and Kant, 2017a; Martins and Pato, 2019; Touboulic and Walker, 2015b). For instance, in a literature review covering the period of 1985–2022, Vurro et al. (2023) pointed out the importance of relational elements to improve sustainability, which includes various practices like collaboration. SCT has a strong contribution to build relationships and to form collective engagement (Dias and Silva, 2022), but it has been not properly considered in relation to the configuration of sustainability practices.

Since SCT relates to how human value is used to develop social value (Coleman, 1990), a better understanding of sustainability practices (Silva and Figueiredo, 2020) based on creating social capital among supply chain members can provide new opportunities for SCS. For this end, this study proposes a theoretical reflection by showing how such supply chain practices that emerge from social capital can enhance sustainable practices. The SCM literature shows that collective relationships generate social practices designed to reach organisational outcomes such as strategic performance (Gelderman et al., 2016; Shin et al., 2019), innovation (Shin et al., 2019), operational performance (Awais et al., 2018; Fan and Stevenson, 2018; Kilubi and Rogers, 2018), sustainability (Lu et al., 2018; Silva et al., 2023) and environmental performance (Gölgeci et al., 2019). However, little is known about how structural, cognitive and relational capital contributes to social engagement with sustainability (Dias and Silva, 2022; Tsai and Ghoshal, 1998).

Based on these arguments, three research gaps were identified in the extant literature. *First*, SCM studies focused on variations of social capital dimensions and performance only for buyer–supplier relationships (e.g. Alghababsheh and Gallea, 2020; Carey et al., 2011b; Matthews and Marzec, 2011; Villena et al., 2020). This bilateral evaluation makes it difficult to develop a general comprehension of sustainability outcomes. *Second*, there is unclear understanding on how to create and develop sustainable practices from the social engagement of the supply chain members (Dias et al., 2023). Since literature has a focus on singular dimensions causing direct performance, we need to uncover nuances of SCT linked to TBL + elements. And *third*, there is room to better explain how SCS practice emerge from firm to supply chain level. Therefore, our conceptual framework was developed aligned to these knowledge gaps by answering the following question: *how does SCT contribute to enhance SCS practices among supply chain members?*

To address this research question, Section 2 refers to the theoretical background section concerning the main argument on SCS, SCT, and the interaction between the two to clarify existing relationships among selected constructs. In addition, while section 3 presents our methodological insights, Section 4 focuses on elaborating a conceptual frame supported by a set of propositions. In doing so, we clearly differentiate our theoretical contribution from others previously presented. Section 5 comprises our contributions, but also to illustrate how the proposed framework can be used by managers. Finally, Section 6 provides our conclusions and recommendations for future studies.

2. Theoretical background

This section provides the main concepts used to develop our theoretical framework and to support the presentation of propositions. First, the concepts of SCS and SCT are presented to better position this article. Finally, initial links between both concepts emerge to support Section 4.

2.1. Supply chain sustainability (SCS)

In the past few years, the search for an SCM aligned with sustainability has been highlighted in the literature to integrate TBL into the management of the process, flow and control of materials from the supplier to the ultimate consumer (Ansari and Kant, 2017a; Bastas and Liyanage, 2018; Carter et al., 2019; Seuring and Müller, 2008a). Although the integration of sustainability dimensions is the main source of the SCS, indeed, this does not occur as requested in the theory. According to Carter et al. (2019), the environmental dimension continues to lead SCS studies over the last decades, with a focus on actions such as waste reduction, energy reduction, design, and environmental standards (Gölgeci et al., 2019; Rashid et al., 2019; Sun et al., 2020). The economic dimension has been incorporated broadly related to the economic/financial results of this integration (Carter et al., 2019). Finally, the social dimension is related to attendance of social issues such as human rights, child labour, and gender diversity, among others (Bubicz et al., 2019; Das, 2017; Govindan et al., 2021).

Despite such a focus on the TBL dimensions (Gold and Schleper, 2017; Matthews et al., 2016; Montabon et al., 2016), it became essential to broaden the literature discussion around the TBL + frame, especially regarding institutional and cultural dimensions (Fritz and Silva, 2018). This happens because companies should move far from an instrumental approach (Montabon et al., 2016). Thus, while institutional dimension is related to managing issues such as stakeholder engagement, trust, and power among supply chain members, the cultural dimension refers to traditions, routines and local cultures (Fritz and Silva, 2018). For instance, in the agri-food supply chain, institutional relationships allow engagement across supply chain members and support technical and financial assistance in the field. In comparison, cultural elements either improve supply chain orientation or generate opportunistic behaviour among supply chain members (Marshall et al., 2015; Silva et al., 2023). Although the introduction of TBL + emerges as a primary orientation to SCS, it is not clear how this integration occurs in practice.

The starting point of SCS is the company's sustainability awareness and proactivity in its supply chain orientation (Beske and Seuring, 2014; Pagell and Wu, 2009). This orientation is essential to maintain SCS because sustainability within supply chains needs to be a daily commitment among all supply chain members (Pagell and Wu, 2009). Making a supply chain sustainable goes beyond any altruism on the part of the businesses involved. The motivation to make a company or processes sustainable may arise from internal intentions, but in most cases, this results from pressures of government, customers and NGOs, among other stakeholders (Gold et al., 2010; Seuring and Müller, 2008a). Based on this perspective, true sustainability will ensure businesses' continued financial profitability without harming natural or social systems (Pagell and Shevchenko, 2014).

Supply chain practices for sustainability can link stakeholders' requirements and strategic sustainability (Gold et al., 2010; Silva et al., 2022). Therefore, supply chain practices are represented by collective behaviours to implement sustainable activities. Among the main practices discussed within SCS studies we have: coordination, cooperation, collaboration, resource exchange and information sharing (Gold et al., 2010; Touboulic and Walker, 2015a). These practices profoundly influence sustainability outcomes (Bastas and Liyanage, 2018) and represent 'the deliberate and orderly alignment or adjustment of partners' actions to achieve jointly determined goals' (Gulati et al., 2012, p. 537). For instance, collaboration is a critical practice to improve sustainability performance (Seuring and Müller, 2008b; Touboulic and Walker, 2015a; Wu et al., 2014), which has as main features both information sharing (Gold et al., 2010), and tangible and intangible resource exchange among supply chain members (Min et al., 2008).

As supply chain practices for sustainability (hereafter: SCS practices) are collective practices directly linked to social engagement by supply chain members, they are presented in the literature as essential to SCS. However, a successful approach to SCS 'depends on the ability of the

supply chain parties to understand the relational specificities of their relationships and capitalise on complementary abilities' (Touboullic and Walker, 2015a, p. 188). Based on these reflections, despite the strong relationship between SCS and the relational approach of supply chain members, the use of SCT still deserves further attention as it contributes to the development of SCS relationships through relational, cognitive, and structural dimensions and, therefore, represents a means of explaining this research gap in the SCS literature. Indeed, a better understanding of SCT becomes necessary.

2.2. Social capital theory

The rise of social capital occurs when relations among persons face changes, which facilitates action (Coleman, 1990). In other words, social capital is a value generated by social relations used for personal, community, public and organisational benefit. In turn, social relations are social engagement represented by familiar groups, civic communities and social organisations, among others (Putnam, 2000). In social capital, social relationships can occur in two forms and three levels. Social relationship forms are represented by bridging and bonding. On one hand, bonding is a social structure characterised by dense networks and a high level of reciprocity and solidarity (Putnam, 2000). It is a horizontal structure represented by individuals from the same social groups (i.e. local communities, cooperatives and NGOs, among others) (Granovetter, 2000; Putnam, 2000). On the other hand, bridging is formed by social groups with different social levels and divisions typical in the vertical structure (i.e. religious organisations and businesses, among others) (Granovetter, 2000; Putnam, 2000). According to Putnam (2000), bonding links to people like you and brings links to people unlike you.

Following this perspective, social relationships are divided into micro (relative to individual relationships), meso (group or organisation relationships) and macro (community or national relationships) levels (Burt, 2004; Putnam, 2000). In organisations, social capital is established from micro relationships based on the individual social activities of workers and meso relationships relative to the individuals' social engagement in the organisation. As this article is interested in firms relationships, we provide more insights into the meso level, in which organisations/companies interact with each other towards a common interest. The supply chain relationships are influenced by broader pressures, as previously mentioned, which demonstrate its relationship with the macro level.

SCT is formed by different dimensions that explain these levels separately or influence each other. Therefore, the three dimensions of social capital and their activities are summarised in Fig. 1. As can be observed in Fig. 1, the social capital dimensions are formed by (1) structural capital represented by internal and external supply chain networks; (2) relational capital, by trust and social norms among supply chain members; and (3) cognitive capital through sharing codes, language and narratives produced from supply chain relationships. For the SCT, social engagement occurs from supply chain relationships based on trust, commitment, norms and network (Tsai and Ghoshal, 1998).

To better understand Fig. 1, structural capital represents the bridge created from networks formed by workers and companies (Burt, 2004). In other words, social structures are social networks linked by information bridges. According to Lin (1999), the interaction between social ties can be facilitated by the influence of organisational agents, workers' access to resources, and the acknowledgement of work by superiors beyond access to information. Dense interactions and multiple connections between internal (intra-company) and external (inter-company) networks (related here to the supply chain) broaden the diversity of information and make social structures more efficient (Burt, 2004; Granovetter, 2000; Lin, 1999). Proximity to social ties facilitates the flow of information and encourages engagement on the part of an organisation's members.

The relational dimension is represented by norms and trust, which

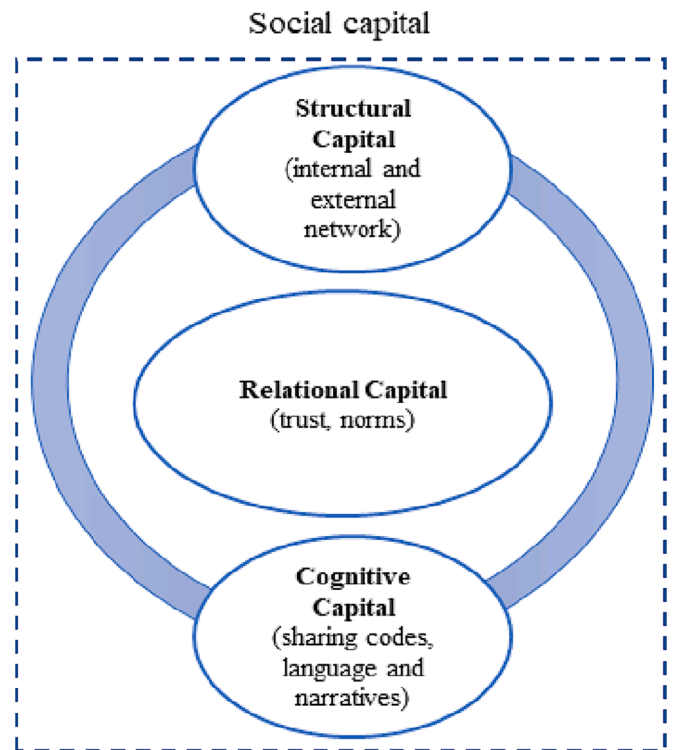


Fig. 1. The three dimensions of social capital. Source: Own creation.

are the main values needed to transform human capital into social capital (Coleman, 1990; Putnam, 2000), even among supply chain members. In doing so, it is common to use the relational dimension as a synonym for social capital. Norms, as relational capital, prohibit members of a society from acting in their own self-interest, obliging them to comply with the norms set by the community. As mentioned in SCT, 'persons behave in accordance with social norms' (Coleman, 1990, p. 241); therefore, the existence of norms also shapes supply chain relationships. For example, norms prevent social groups from hurting one another because this is seen as being socially wrong. Another important element is trust, which refers to the assurance that one party in a (supply chain) relationship will not harm the other. Trust and trustworthiness behaviours are vital lubricants of the social system (Granovetter, 2017; Putnam, 2000), and a lack of trust weakens relationships between social members.

Finally, cognitive capital in a social organisation is manifested through the comprehension and sharing of codes, languages, culture, narratives and value within that organisation or among supply chain members (Inkpen and Tsang, 2005; Tsai and Ghoshal, 1998). This sharing relates to the collective goals and aspirations of supply chain members as well as support for the building of corporate identity and the proximity of social groups. Such a perspective leads to long-term commitment (Paluri and Mishal, 2020), which turns into cognitive capital, as the commitment between social members leads to a deep understanding of why relationships exist and how they contribute to compatible collective goals within supply chain relationships (Villena et al., 2011). This dimension represents the learning ability of individuals and organisations toward a better SCM.

In all dimensions of social capital (i.e. cognitive, structural and relational), trust, reliability and norms are essential to developing relationships. These values facilitate social engagement and cooperative behaviour within social communities (Uzzi, 1996; Woolcock, 2007). However, a lack of trust is a barrier to collaboration in a social organisation (Walker et al., 2008). According to Putnam (2000), social networks and the norms of reciprocity facilitate cooperative behaviour on the part of individuals. Based on this understanding, SCT can be used to

explain SCS practices because it (1) explains cooperative behaviours practised by supply chain members and (2) represents a crucial social theory producing values from relational interactions related to the capacity to build knowledge and networks. Therefore, SCT explains managerial components of the supply chain structure.

2.3. Social capital theory within supply chain sustainability

Two main studies represent the landmark in the use of social capital theory in operations management (OM), which generates the starting debate toward SCS. First, Nahapiet and Ghoshal (1998) explained the connections between the three dimensions of social capital (i.e. structural, cognitive and relational), intellectual capital and building a business' organisational advantage. Then, Tsai and Ghoshal (1998) empirically tested three dimensions of social capital with resource exchange, value creation and innovation performance in multi-company sites in North America, Europe, and Asia. These studies represented how to use social capital in other operational analyses. However, in the beginning studies, the three SCT dimensions were viewed in a linear configuration (disregarding the relationship between cognitive and structural capital) as it allowed individuals to analyse these dimensions based on traditional SCM practices and performance.

In studies on OM literature, social capital has been used to improve supply chain performance (Carey et al., 2011b; Gelderman et al., 2016;

Matthews and Marzec, 2011; Tsai and Ghoshal, 1998). However, such a performance is not only related to economic/financial outcomes once sustainability/environmental performance becomes part of SCM. Table 1 summarises the SCS practices identified in the literature and related supply chain performance improved. As can be observed, in practice, the use of SCT is restricted to analyses of buyer–supplier relationships (Gelderman et al., 2016; Matthews and Marzec, 2011), which are more commonly used in SCM (Matthews and Marzec, 2011) than SCS (Chen et al., 2017).

As observed in the SCS literature, recent studies have explored the relationship between SCT and SCS. For instance, while Lu et al. (2018) pointed out that social networks, as an element of structural capital, are directly related to SCS, Gölgeci et al. (2019) stated that collaboration between SC members directly impacts environmental performance. Silva et al. (2022) found that social capital can strengthen the social sustainability performance of micro and small enterprise supply chains. Recently, Silva et al. (2023) demonstrated that cultural elements can foster opportunistic behaviours along the supply chain, which affects the relationship between individuals and structure. Based on these articles, we can understand that the integration between SCT and SCS would produce similar SCS practices and processes as in traditional SCM research. Therefore, SCS practices are good strategic and operational choices for businesses seeking to achieve sustainability. According to Dias et al. (2023), the relationship between SCT and SCS must be seen

Table 1

An overview of the use of SCT in supply chain relationship studies.

Article	Social Capital Dimensions	Main Contribution	Practice	SCM Performance
Villena, Revilla and Choi (2011)	Structural, cognitive and relational capital	Social capital in a collaborative BSR positively affects buyer performance, resulting in reduced opportunistic behaviour on the part of suppliers.	Collaboration	Organisational performance
Carey, Lawson and Krause (2011a)	Structural, cognitive and relational capital	Legal bonds moderate the relationship between relational capital and performance outcomes. The buyer–supplier exchange occurs through cooperation and collaboration.	Cooperation and collaboration	Organisational performance
Li, Ye and Sheu (2014)	Structural, cognitive and relational capital	Relational and cognitive capital have a positive influence on information sharing. Structural capital has an indirect effect on information sharing through relational and cognitive capital.	Information Sharing	Organisational performance
Lee (2015)	Structural and relational capital	The use of accumulated social capital in green supply chain management contributes to environmental and operational performance in the supply chain.	Collaboration	Environmental and operational performance
Whipple, Wiedmer and Boyer (2015)	Structural, cognitive and relational capital	The internal collaborative process without external social capital is insufficient to develop operational performance on relationships. The internal and external social capital develops operational performance for the relationship.	Collaboration	Operational performance
Lu et al. (2018)	Structural capital	Networks increase the flow of supply chain capital and trust between SC members, thus facilitating the implementation of sustainable SCM.	Trust and collaboration	Sustainability outcomes
Handoko, Bresnen and Nugroho (2018)	Relational capital	Social capital based on the integration between businesses influences the exchange of knowledge in supply chain.	Resource exchange	Organisational performance
Kilubi and Rogers (2018)	Structural, cognitive and relational capital	Five capabilities (organisational, technological and innovative, learning and exploitation, complementary and network and partnership capabilities) positively impact organisational performance (i.e. flexibility responsiveness).	Collaboration	Organisational performance
Gölgeci et al. (2019)	Relational capital	Relational capital and environmental collaboration contribute to the development of social capital and environmental performance.	Collaboration	Environmental performance
Chowdhury, Lau and Pittayachawan (2019)	Structural, cognitive and relational capital	The three dimensions of social capital reduce operational supply risk management.	Collaboration, resource exchange and information sharing	Operational performance
Aghababsheh and Galllear (2021)	Structural, cognitive and relational capital	Relational and cognitive capital improve the positive impact of collaboration practices in buyer –supplier social relationships.	Collaboration	Organisational performance
Ayesha Wadood et al. (2022)	Structural Capital	The Network size moderates positively the social sustainability.	Network	Sustainability outcomes
Silva et al.(2023)	Structural, cognitive and relational capital	The cognitive and relational capital are related to experience and agency elements, and structural capital and opportunistic behaviours.	Collaboration, resource exchange and information sharing	Sustainability outcomes
Dias et al. (2023)	Structural, cognitive and relational capital	Microfoundations of social capital operationalise SCS practices to improve Sustainability outcomes.	Cooperation, Coordination, Collaboration, resource exchange and information sharing	Sustainability outcomes

Source: Own creation based on cited references.

from microfoundations. This perspective allows a better comprehension of social capital but still lacks an explanation on how to link SCT and SCS practices.

Practices represent a direct relationship to values of social capital, including those related to cooperation (Carey et al., 2011a; Cheng et al., 2012; Fan and Stevenson, 2018; Johnston et al., 2004), information sharing (Li et al., 2014; Min et al., 2008) and resource exchange (Min et al., 2008). For example, the structural dimension is likely to improve the exchange of resources (Min et al., 2008; Roy et al., 2018), and the cognitive dimension can improve information sharing (Li et al., 2014) towards SCS. Thus, these SCS practices can be improved regarding any of three dimensions of social capital and centrally related to their interconnection. As already mentioned, collaboration is the core practice of SCS and can be improved by three dimensions of social capital (e.g. Kilubi and Rogers, 2018; Villena et al., 2011). Collaboration supports the improvement of supply chain performance, such as operational performance (Min et al., 2008; Shin et al., 2019), strategic performance (Shin et al., 2019) and sustainability performance (Lu et al., 2018). Although our focus is on TBL + sustainability outcome (i.e. economic, social, environmental, cultural, and institutional), the relationship between SCS practices and performance should consider the social engagement generated by SCT.

The relationship between SCT dimensions and SCM is frequently analysed by mathematical modelling through a direct correlation between these variables (Matthews and Marzec, 2011). However, when focused on SCS practices, other associations must be done. Table 2 shows the relationship between SCT and SCS practices, which is underdeveloped and somewhat incoherent once it is not possible to know how the relations among dimensions occurred and which social values are presented among them.

The constant focus on a linear configuration of social capital (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998) and the predominant use of quantitative analyses (Matthews and Marzec, 2011), for example, hinders a better comprehension of how SCS practices are built from social capital or how social capital corroborates toward such SCS practices. The relationship between SCT and SCM is thus barely presented in the literature through consistent connections between dimensions. For similarity, the relationship between SCT and SCS practices (i.e. cooperation, coordination, collaboration, information sharing and resource exchange) presents solid and positive performance results. Although it is not clear by literature the role of each practice,

Table 2
The relationship between SCT and SCS practices.

Social capital dimensions	SCS practices	References
Relational capital	Cooperation	Carey, Lawson and Krause (2011b); Cheng, Yip and Yeung (2012); Fan and Stevenson (2018); Johnston et al. (2004); Dias et al. (2023).
	Collaboration	Carey, Lawson and Krause (2011b); Gölgeci et al. (2019); Kilubi and Rogers (2018); Whipple, Wiedmer and Boyer (2015); Alghababsheh and Galleal (2021); Silva et al.(2023); Dias et al.(2023).
	Information Sharing	Li, Ye and Sheu (2014); Min, Kim and Chen (2008); Dias et al.(2023).
Structural capital	Collaboration	Bernardes (2010); Lu et al. (2018); Alghababsheh and Galleal (2021); Silva et al.(2023); Dias et al.(2023)
	Resource Exchange	Min, Kim and Chen (2008); Roy, Schoenherr and Charan (2018); Dias et al. (2023).
Cognitive capital	Collaboration	Fan and Stevenson (2018); Alghababsheh and Galleal (2021); Silva et al.(2023); Dias et al.(2023).
	Information Sharing	Li, Ye and Sheu (2014); Dias et al.(2023).

Source: Own creation based on cited references.

cooperation and collaboration can promote better engagement of the supply chain members. Resource exchange and information sharing are practices that are promoted by collaboration (Gölgeci et al., 2019). Coordination is a practice little studied by literature. However, this practice represents the alignment and adjustment of the social member for action (Gulati et al., 2012). Thus, knowing that sustainability is a supply chain commitment, these practices represent a way for performance and social engagement among supply chain members.

According to Hughes and Perrons (2011), social capital should not be developed linearly as portrayed in prior investigations in this area but instead must be formed through a series of complex interactions among the three dimensions of social capital. Li et al. (2014) held the same position, demonstrating a positive relation between social interaction (structural capital) and shared view (cognitive capital).

Complementarily, regarding the linear relationship between SCT and SCS. For example, it is not possible to discern how SCS practices are ordered in social engagement once collaboration and cooperation are treated as equivalents in the traditional SCM literature. Therefore, as collaboration and cooperation are manifested at the same level of SCS practice, the supply chain relationship does not reflect the relationships between different coordination instances among other SCS practices. Uncovering confusion in the literature is essential to comprehend how supply chain relationships emerge according to SCT. The deepening of SCT is necessary for a better comprehension of the relationship between SCT and SCS as much as it is for evading any direct relationship between conceptual approaches. Based on the clarification of the existing literature, the next section develops a conceptual framework to clarify the contributions of social capital to SCS practices.

3. Methodological insights

This paper is essentially theoretical. Using an iterative process, it is focused on theory-building (Meredith, 2004) based on acts of 'disciplined imagination' (Weick, 1999). The iterative process is designed to build an understanding of the descriptions (interactions) of the parts of the model developed (Meredith, 2004). The theory building is naturally synthesised from previous research, and the validity occurs from recognising the intuitive process (Meredith, 2004). In doing this, the quality of the checking any previous research appropriate permits the reliability of the text (Aguinis and Solarino, 2019) and their replicability from deductive tests and replication (Aguinis and Solarino, 2019; Pratt et al., 2020). To develop our conceptual study, we followed the suggestions of Skilton (2011), who argues that more theory is needed for SCM based on three categories (i.e. clarification, differentiation and illustration). First, we pursued clarification. Our conceptual framework is grounded in the extant literature to explore previous insights and build a theory on how SCT can contribute to SCS practices. We, therefore followed Skilton's (2011) recommendation to conduct differentiation and illustration. The following sections are responsible to demonstrate our theorisation process.

4. Reviewing the role of social capital to SCS practices

The role of social capital in supply chain relationships can be represented by multiple values (e.g. commitment, trust, reciprocity, and network), which generates improved SCS practices and, consequently, enhanced SCS outcomes. Fig. 2 illustrates (1) *what* SCS practices (i.e. coordination, cooperation, information sharing, resources exchange and collaboration) affect SCS outcomes, (2) *why* SCS orientation becomes central to shaping SCS relationships, and (3) *how* social capital values across these SCS practices are guiding supply chain members. To this end, we proposed a set of propositions that support a comprehensive understanding of our main arguments.

As depicted in Fig. 2, although social capital values occur in a shift from the meso level (i.e. firms) to the macro level (i.e. supply chain), each individual brings personal characteristics (i.e. micro level;

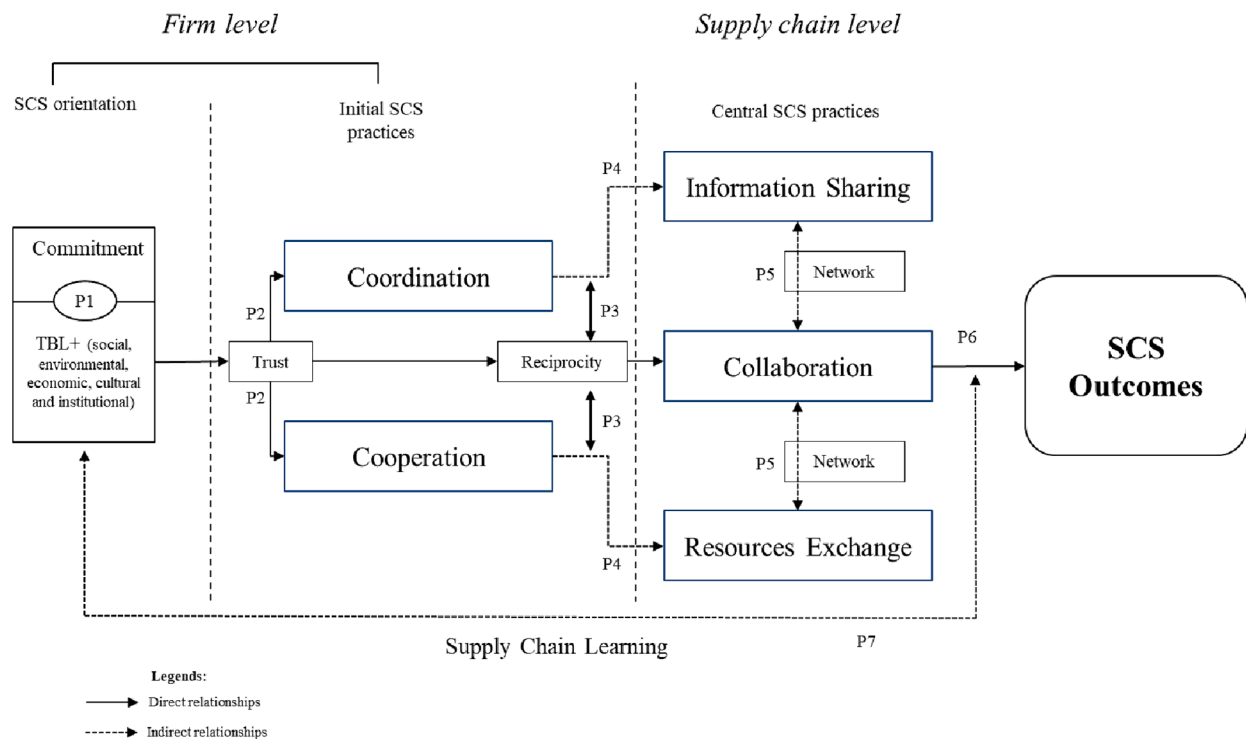


Fig. 2. An Integrative approach of social Capital and SCS Practices. Source: Own creation based on theory building.

Coleman, 1990). Based on this shift, one reason to link SCT and SCS is that social and cultural elements can shape the society's (here related to supply chain) vision and adaptability capacity (Putnam, 2000). Overall, the Fig. 2 clarifies existing literature, as it focuses on direct relations between social capital dimensions and supply chain performance (e.g., relational capital generates better supply chain outcomes; Fan and Stevenson (2018)). In this study, we argue that SCT dimensions have a different role for SCS. Indeed, our theoretical argumentation shows that social capital values complementarily support supply chain members to better SCS outcomes.

In this context, the starting point of our proposal relies on SCS orientation. Often, the literature addresses such an orientation in terms of TBL and SCM (e.g., Beske and Seuring, 2014), because SCS orientation can shape supply chain relationships (Pagell and Wu, 2009). We corroborate Pagell and Wu (2009) concerning the importance of commitment for SCS orientation; however, we argue that commitment is a stronger value than simply connected with top management interest for sustainability. In this study, commitment is defined as a social capital value in which firms should mobilise their cognitive capital for sustainability. The cognitive capital is represented here by sharing codes, language and narratives linked with sustainability. Therefore, we argue that TBL+ (i.e. social, economic, environmental, institutional and cultural dimensions of sustainability) becomes central to SCS orientation because it does not focus on general outcomes but includes, for example, local traditions as part of the commitment to SCS (see Fritz and Silva, 2018).

As noted in Fig. 2, commitment intensifies supply chain relationships and prompts actions between individuals/firms (Lin, 2001; Putnam, 2000). Therefore, a firm's commitment to sustainability in terms of TBL+ can lead to trust, another social capital value. This occurs because commitment is aligned with "[firm's] culture and goals within [its] relationships" (Villena et al., 2011, p. 563). Based on these argumentations, the following is proposed:

P1. Firm's commitment to sustainability (i.e. TBL+) in supply chains is likely to trigger trust and, consequently, stronger engagement for SCS practices.

The existence of commitment for SCS orientation exists in a strategic purpose for firms (Beske and Seuring, 2014). Therefore, this commitment supports initial SCS practices on sharing codes, languages and narratives oriented to sustainability. We understand that cognitive capital can help firms to develop trust between individuals/firms, which promotes social cohesion (Lin, 2001). Because commitment represents the motivation to cooperate (Lin, 2001) and facilitates coordination among supply chain members (Shin et al., 2019), Fig. 2 shows that SCS orientation shapes SCS practices. The framework explains that trust, as a social capital value, has an important role towards coordination and cooperation. This occurs because trust and posteriorly reciprocity are key components in building supply chain relationships over time (Granovetter, 1983; Tsai and Ghoshal, 1998; Villena et al., 2011). According to SCT, cooperation and coordination result from trust (Putnam, 2000) and are therefore practised through relational capital. Based on this, the following is proposed:

P2. Coordination and cooperation practices rely on the existing level of trust among supply chain members for SCS.

We argue that trust is not limited to the firm level, as it also has an influence on how the networks are built. SCM literature points out coordination and cooperation practices related to firm level, as they rely on trust and orientation. Moreover, these SCS practices have connections with other practices. While Gulati et al. (2012) argue cooperation and coordination support collaboration, Beske and Seuring (2014) define them as precondition of collaboration. However, we claim that cooperation and coordination also connect, even indirectly, with information sharing and resource exchange practices. Despite this understanding, we define coordination and cooperation as initial practices for sustainability, as they are shown in the firm-level support. The high social engagement based on trust and reciprocity among firm members promotes more coordination and cooperation for sustainability. The reciprocity among members promotes information sharing and resource exchange. At the supply chain level, the network supports interaction among firms, and reciprocity promotes better engagement among them. Additionally, information sharing and resource exchange reduce bridges

(distance) between networks (Burt, 2004; Lin, 2001). Following this rationale, we propose:

P3. The reciprocity value of social capital associated with coordination and cooperation practices for SCS is vital to generating collaboration, information sharing and resource exchange.

P4. Coordination and cooperation practices are likely to generate information sharing and resource exchange for SCS.

Information sharing, resource exchange and collaboration are central practices for SCS outcomes as they occur at the supply chain level (see Fig. 2). These SCS practices arise among independent firms (Min et al., 2005; Stank et al., 2001) but are influenced by reciprocity as a social capital value. Therefore, reciprocity is considered a social norm. Social norms are the principles that people acknowledge or admit, follow (or not) and are appropriate (Granovetter, 2017). In this context, reciprocity norms are represented by values such as solidarity, mutuality, honesty and flexibility (Putnam, 2000). Collaboration is established by trust and reciprocity among members of networks; thus, it is impossible to collaborate without trust and reciprocity. Collaboration promotes engagement, while information sharing and resource exchange promote the changes among supply chain members, but they cannot be dissociated from each other due to relational capital. The more SCS practices are developed, the stronger the collaboration among supply chain members because it relates to information sharing and resource exchange (Lu et al., 2018). Following this rationale, we propose:

P5. The existence of a network among supply chain members owing to information sharing and resource exchange will boost collaboration as a SCS practice.

The strengthening of collaboration interconnected with information sharing and resource exchange promotes enhanced SCS outcomes. Gölgeci et al. (2019) stated that collaboration is more significant and more efficient when members of a supply chain form close relationships. As shown in Fig. 2, collaboration is represented as the main SCS practice that influences the outcomes. For SCS literature, collaboration has a special significance because it promotes social engagement at the supply chain level. Once the collaboration represents a central construct establishment by information sharing and resource exchange. Although information sharing and resource exchange can be considered practices, the collaboration summarising the exchange's action on the supply chain level. Based on these arguments, we propose:

P6. The combination of different SCS practices generating collaboration will enhance SCS outcomes due to the high level of social capital among supply chain members.

Once SCS orientation leads to different SCS practices, tacit and explicit knowledge are acquired and distributed over time, this occurs owing to the strong social capital among supply chain members generating supply chain learning (Leana and Buren, 2015; Vachon and Klassen, 2008). Towards enhanced SCS practices, collaboration for SCS promotes continuous and mutual learning across firms and supply chains. As shown in Fig. 2, supply chain learning is a result of learning loops (Silvestre, 2015) between SCS orientation and collaboration. In this context, knowledge is constantly shared from new languages, codes, and narratives, that is reinforcing the commitment value. Supply chain learning refers to the capacity of organisations across the same inter-organisational relationship to learn from knowledge practice (Kraatz, 1998; Pereira et al., 2021). Thus, knowledge is transferred to supply chain members, generating new commitments through sharing new codes, languages and narratives relating to cognitive social capital (Kraatz, 1998). For instance, sustainability knowledge can be produced in the supplier context and crosses the firm-level boundaries to ensure SCS among supply chain members (Pereira et al., 2021). Thus, the relationship between SCT and SCS is a cyclic system underpinned by learning. Therefore, the following propositions are raised:

P7. Supply chain learning is essential to cognitive, relational, and structural capital leading social capital build and supporting SCS practices.

Overall, Fig. 2 illustrates the social capital role of SCS, which goes beyond simple direct relationships by combining social capital values and SCS practices. The existence of cognitive, relational, and structural capital across SCS practices demonstrates that indeed, SCS orientation is the starting point due to its capacity to influence on SCS outcomes. Social capital is continuous and needs to be strengthened to produce the best SCS practices, which rely on supply chain learning. In this framework, all SCS practices are represented by constructs, while social capital values are the needed variables. This differs from the literature demonstrating our originality and contribution. This paper announced opening the black box of the relationship between SCT and SCS.

Based on these propositions, applying SCT to SCS is possible due to an existing closed system based on commitment, trust, reciprocity, and networks. The dimensions of social capital are interrelated to improve SCS. The cyclic system of SCT and SCS is corroborated by the findings of Hughes and Perrons (2011) and Li et al. (2014). Although cyclic, the propositions presented show that the SCS is related directly to the social engagement of supply chain members. By offering this conceptual model and a set of propositions, this paper provides insights to scholars and practitioners on what is the role of social capital in SCS practice.

5. Discussions

This study elaborates theory on how SCT contributes to enhancing SCS practices among supply chain members. We address several knowledge gaps and provide a conceptual framework (see Fig. 2) to clarify our understanding of how a sequence of SCS practices can be developed from social capital. The framework proposes that sustainability is achieved initially by a commitment between TBL + and SCM, generating the so-called orientation toward sustainability. This supply chain orientation is achieved by sharing codes, languages, and narratives in cognitive, social capital. Relationships of trust and reciprocity (i.e. social norms) give rise to cooperation and coordination and, consequently, to collaboration in an effort to achieve sustainability outcomes among supply chain members. Strong relationships based on trust and a business's capacity to form networks improve collaboration, information sharing and resource exchange, which are necessary elements to improve SCS outcomes. Therefore, theoretical, and practical implications were identified with this conceptual paper.

5.1. Theoretical implications

This study showed how leading SCS practices (i.e. cooperation, coordination, collaboration, resource exchange and information sharing) are formed from supply chain members' relationships. This led us to the first theoretical contribution. Although SCS practices have broadly approached buyer-supplier relationships, we provide a set of propositions that will support further studies to use SCT to study SCS using supply chain and network perspectives. Through our paper, we show insights for multiple types of research, which differ from existing studies that have presented such a relationship quantitatively, using correlations between SCM and SCT (e.g. Carey and Lawson, 2011; Johnson et al., 2013; Roden and Lawson, 2014; Whipple et al., 2015). Identifying that sustainability outcome cannot be reached from a direct relationship between SCM and SCT, this study provides its first contribution.

The second theoretical contribution relates to the lack of understanding of how SCS practices could be developed. Through our conceptual framework, we demonstrate that these practices occur systematically due to SCT values such as commitment, trust, social norms, and networks. Throughout Section 4, this paper shows that, unlike extant literature, there is a cyclic system connecting the mobilised constructs. Such a cyclic system is interconnected by supply chain learning among supply chain members. Therefore, increasing social

capital produces better sustainability outcomes in different dimensions, which connects to TBL+ (Fritz and Silva, 2018). For instance, Fig. 2 makes a significant conceptual contribution because we better understand how SCS practices are formed and interrelated to improve SCS outcomes. In doing so, we argued that different from what is often claimed, cooperation and collaboration are not similar practices but complementary ones.

Finally, this paper showed that SCS practices are built deliberately, not randomly, through social values formed from relationships between individuals and companies. We demonstrate the shift from firm to supply chain level, which is underdeveloped. Our theory building reveals insights on how SCS practices come after the development of collective engagement of supply chain members. Unlike what exists in the literature, we show that a direct relationship between trust and collaboration is not possible (i.e. Carey et al., 2011a; Cheng et al., 2012; Fan and Stevenson, 2018; Johnston et al., 2004), as it involves cognitive elements such as language, codes and narratives, that is, the communicative element of the interpersonal relationship. Having a strong commitment and orientation supports that networks can emerge to trigger supply chain learning.

5.2. Managerial implications

To provide the final category suggested by Skilton (2011), we propose managerial contributions as part of our illustration of how our conceptual framework can help SCM. Therefore, the identification of SCS practices from social capital permits, for example, the diagnosis of potential failures by shedding light on how it happened. For example, collaboration for sustainability among businesses can emerge from low commitment, poor trust, and little capacity to generate networks between supply chain members. Businesses can reinforce their commitment to sustainability and improve the development of collaboration to strengthen trust by means such as better organisational communication, contracts, and commercial agreements. To strengthen relationships among supply chain members, businesses can designate more meeting spaces and promote workshops with their commercial partners. The practical applicability of the framework previously presented goes beyond the buyer–supplier relationship to show not just the correlations among variables but also to explain how these practices can be formed from social capital. Therefore, managers can better identify how their firms are connected to SCS practices.

6. Conclusions

Throughout this conceptual paper, we were able to demonstrate how SCT contributes to SCS practice. Our original theoretical framework shows that SCM practices are developed from the social capital formed with a focus on SCS. We showed that orientation for sustainability occurs by sharing of codes, languages, and narratives on cognitive social capital dimensions. Additionally, we noted that trust and reciprocity are developed through cooperation, coordination and collaboration for sustainability among supply chain members. Based on these elements, we address the research questions by showing that social capital is essential to understand both social engagement among supply chain members and its contribution to SCS performance.

As a limitation of this research, we highlight that the leadership practices and the supply chain members' empowerment were not considered due to our focus on SCT. Future research can consider the inclusion of these elements. Identifying the activities developed in the supply chain that facilitate the improvement of the SCS practices represents other practical applications of the framework. A comparative study of at least two focal companies can explore different social activities that would improve SCS practices among businesses. Another limitation of this paper is that the framework takes an optimistic view of social capital and its benefits; however, it is possible that a relationship based on strong trust can also give rise to conflict and enable

opportunistic behaviours on the part of individuals. Future research should examine this darker side of the link between SCT and SCS.

Based on this, new studies can apply our set of propositions to learn about SCS practices under the lens of social capital. Additionally, to identify the main elements of building SCS practices and the factors that cause the misconduct of this practice, the proposed framework is useful. Furthermore, we understand that the dimensions of social capital and SCS practices can suffer from the influence of cultural differences. Thus, new studies can investigate the effect of the cultural aspects on the social capital dimensions and SCS practices. In the end, practical studies that improve solutions toward more social engagement need to be considered within supply chain relationships. A learning perspective can also be developed to better engage SCT with different parts of supply chains.

CRedit authorship contribution statement

Gustavo Picanço Dias: Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Investigation, Methodology. **Minelle E. Silva:** Funding acquisition, Methodology, Resources, Supervision, Validation, Visualization. **Fernando Luiz Emerenciano Viana:** Formal analysis, Supervision, Visualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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