Theorising circular economy and sustainable operations & supply chain management: A sustainability-dominant logic

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Abstract

Purpose – This paper introduces initial foundations of a sustainability-dominant logic theory intersecting the sustainable operations and supply chain management (SOSCM) discipline with the circular economy (CE) field of knowledge.

Design/methodology/approach – The paper applies propositional forms of theorising to derive the formulation of propositions and interconnections that interrelate SOSCM and CE principles, concepts and practices which provide a reinforcing theoretical basis underlying the proposed sustainability-dominant logic theory.

Findings – Key findings are represented by elaborated theoretical propositions for a sustainability-dominant logic linking SOSCM and CE principles, concepts, and well-established practical assumptions. The initial set of propositions offers useful insights for a sustainability-dominant logic at three managerial levels: product, firm, and supply chain level.

Original/value – The paper offers an original theoretical common ground based on a sustainability-dominant logic linking key SOSCM with CE tenets, this way developing SOSCM theory anchored in the CE paradigm and, conversely, developing CE theory supported by SOSCM principles and praxis. The initial set of propositions introduced in the paper provides a new pathway for future research and debate by OM scholars engaged with SOSCM and CE developments.

Keywords: Sustainability-dominant logic; Sustainable operations and supply chain management; Circular economy; Theory development; Sustainability-oriented products; Sustainability-oriented value creation

1. Introduction

Over the last decade, climate change pressures associated with critical dependencies on the supply of fossil fuels and non-renewable resources have fostered the development of circular economy (CE) solutions in the industry (Nunes et al., 2022), as it provides a pivotal economic paradigm for the establishment of sustainable production and consumption systems.

The shift from a linear economy, which is characterised by non-cyclical flows of production and consumption, to a circular economy predicated on restorative and regenerative cyclical modes of

production and consumption is gradually gaining momentum. Firms across different industries have been embracing circular economy principles and approaches to minimise waste generation and maximise resource utility and recovery (Stahel, 2016) as the chief sustainability model for their operations and supply chain management.

Adding to the industry initiatives, many governments worldwide are promoting transitions to the circular economy at local, national and transnational levels, as evidenced by a number of circular city transition cases (Prendeville et al., 2018), sectoral agreements toward the circular economy (Guarnieri et al., 2020), the Chinese Circular Economy Promotion Law (McDowall et al., 2017), the European Circular Economy Action Plan (EU Commission, 2020), and so forth.

The development of circular economy has been therefore mainly led by practitioners, with the academic community engaging with its progress in a later stage (Velenturf & Purnell, 2021). Yet, much of the practitioners debate still emphasizes a recycling-based narrative (De Lima, 2022). Nowadays, substantial CE-related literature has been produced by the academia and a growing mass of scholars are addressing circular economy from a multitude of disciplines.

The increasing number of studies referring to circular economy tenets, frameworks and practices seems to be shaping the new norm for sustainable operations and supply chain management. However, while appreciated within the boundaries of specific spheres of knowledge, the myriad of theoretical lenses being applied to explain and postulate CE developments do not necessarily converge into a cohesive theoretical logic to support the so-called circular economy paradigm. As Velenturf and Purnell (2021) point out, the circular economy is still a contested concept open to multiple interpretations, allowing the emergence of 'pseudo-circular' practices which are not necessarily advocated by CE principles.

Indeed, a number of SOSCM studies use 'circular economy' as an umbrella term loosely applied to characterise the sustainability of production systems and related supply chains (Batista et al., 2018). The constellation of disparate CE perspectives resulted in many contested claims about its theoretical underpinnings (Korhonen et al., 2018), leading to conceptual tensions and unclear rationale linking SOSCM and the circular economy.

This paper deals with the issues above mentioned by elaborating fundamental theoretical propositions that amalgamate core principles, concepts and approaches applied in the SOSCM and CE fields of knowledge. In doing so, we provide a theoretical basis which associates key CE principles with sustainability-oriented practices in the operations and supply chain management area and, conversely, underpins a CE paradigm corroborated by SOSCM principles. A central question guiding the theorising process in this study is: What are the fundamental premises of a sustainability-dominant logic supported by reinforcing CE and SOSCM principles?

By elaborating sustainability-oriented principles derived from plausible linkages between key SOSCM and CE principles, we put forward the foundations of a sustainability-dominant logic theory supported by core sustainability premisses of SOSCM and CE. To this end, we apply explanatory forms of theorising (Cornelissen et al., 2021) to derive the formulation of propositions that establish fundamental interconnections between SOSCM and CE principles, concepts and practices underlying a sustainability-dominant logic theory.

The theoretical propositions introduced in this paper are not intended to replace established SOSCM and CE tenets. Rather, the paper starts the characterisation of a sustainability-dominant logic which amalgamates key SOSCM and CE principles into a cohesive set of fundaments to support a

sustainability-centred mindset and provide the foundational lenses through which theoretically rich CE-based research can be developed in the operations and supply chain management field. By doing so, a clearer sustainability foundation for the CE paradigm is also being developed.

2. Theorising a sustainability-dominant logic for SOSCM and CE

Theory is central to academic research, as it is a key element necessary to provide scientific legitimacy and rationality to a knowledge area. Its philosophical and conceptual nature has an intrinsic relationship with practice. That is, by providing a set of assertions about generic behaviours assumed to hold across a range of specific instances, theory leads to practice and, by its turn, practice is the source of further theoretical developments (Oliva, 2019). Overall, the set of assertions provided by a theory represent a coherent group of concepts and interrelated propositions used as principles of understanding, explanation and paradigmatic references (Meredith, 1993).

To develop the initial set of assertions for a sustainability-dominant logic, we apply the propositional form of theorising as described by Cornelissen et al. (2021). This is an explanatory form of theorising aimed at identifying and establishing fundamental concepts and processes that underlie and therefore explain a given topic. In this process, researchers draw from other theories, frameworks and concepts to elaborate key theoretical propositions that underpin the propositional reasoning of a knowledge area.

This theorising process corresponds to two theory building approaches adopted in operations and supply chain management studies based on literature reviews, as presented by Seuring et al. (2021): 1. Theory building, which involves inductive exploration of the literature and development of meaningful propositions that broaden the understanding of a subject area; and 2. Theory extension, which borrows theory from other areas to develop, enrich and extend theoretical propositions. The propositions formulated represent connections and patterns in what was before a series of not clearly interconnected studies and related theories (Meredith, 1993).

Arguably, the current literature addressing SOSCM and CE research presents fragmented perspectives of theory from a number of studies that do not clearly interconnect their theoretical principles and assumptions. In the following sections, we draw key concepts and practices from the SOSCM and CE literature, borrowing from each other's tenets to elaborate on converging points and make plausible connections between their sustainability-oriented principles. We formulate such connections in form of theoretical propositions that underpin the sustainability-dominant logic introduced in this paper. Following a logical structuration for presenting the proposed propositions from a narrower to a wider perspective of SOSCM, we derive sustainability-dominant logic propositions at three managerial levels: 1. product level – *Sustainability-oriented product*, 2. firm level – *Sustainability-oriented value creation*, and 3. supply chain level – *Sustainability-oriented supply chain*.

Although these three levels represent a nested perspective of operations and supply chain management, in the sense that products are part of firms and firms are part of supply chains, they are distinct in terms of managerial domains, with each level having substantial literature of its own, to the extent that they can be fairly considered as having mutually exclusive knowledge fields, where each level provides distinct theoretical and managerial lenses to the OM discipline. When taken together, they are collectively exhaustive, providing a comprehensive body of literature from which we can draw from a wide range of well-established SOSCM principles, approaches, and conceptual frameworks, which provide a relevant theoretical basis for a sustainability-dominant logic.

2.1. Sustainability-oriented product

The design of products has been widely recognised as a key activity with significant influence on firms' sustainability. For many years, OM scholars have been researching the sustainability implications of product design. In this context, concepts such as DfE (Design for Environment), where environmental targets are incorporated in the design and redesign of products, processes, and production systems, have been associated with ERM (Environmentally Responsible Manufacturing) practices in integrated approaches to reducing and eliminating waste streams in the production, utilisation and disposal of products and related materials (Sroufe et al., 2000).

Increasing sustainability concerns motivated the emergence of Extended Producer Responsibility (EPR, aka product stewardship) policies compelling manufacturers to be responsible for dealing with after end-of-life stages of their products' life cycles. Initially seen as an extra managerial burden with additional costs brought by placing waste management responsibilities in the core of a product's life cycle, manufacturing firms started to redesign their products and design new ones with an aim toward using less materials, improving durability, and facilitating 'take-back' initiatives based on product reuse, repairing, remanufacturing or recycling, as illustrated by Gupt and Sahay (2015). Additionally, producers started to realise that EPR, product life extension, and related take-back initiatives offered valuable prospects for improving their economic, social and environmental sustainability in general (Cai & Choi, 2021), as they create opportunities for new income streams and can be associated with socially responsible and environmentally friendly practices encouraged for the circular economy (Kunz et al., 2018).

The SOSCM practices and concepts above mentioned are consonant with key premisses advocated by the circular economy. For instance, one of the principal CE assumptions is that the sustainability value of material resources must be preserved for as long as possible (EMF, 2015). This can be achieved by designing out wasteful utilisation of resources through prolonging the life-span of the products for which the materials are sourced and through looping products, and related materials, back into the economy for utilisation in further consumption and production systems (Ekins et al., 2019; den Hollander et al., 2017).

Bocken et al. (2016) translated those key CE premisses into a range of strategic circular product design approaches specifically aimed at extending the life span of products (e.g., design for durability, repairability, and disassembly to facilitate product reuse, maintenance and remanufacturing). Other product design strategies are particularly aimed at enabling the recovery of products' materials through recycling (e.g., design for recyclability).

Based on the corroborative points considered above, we derive the following theoretical propositions supporting a sustainability-dominant logic emerging from central SOSCM and CE premises, concepts and practices concerning sustainable product design:

Proposition 1. **From a sustainability-dominant logic perspective, product design entails an eco-design process where sustainability factors are considered in the early conceptual stages of designing, which takes into account end-of-life recoverability features of the product and related composite materials.**

Proposition 2. **From a sustainability-dominant logic perspective, the design of a product aims to maximise the sustainability value of the product and its related composite materials in terms of prolonged utility and increased recoverability enabled by durability, repairability,**

recyclability, and disassembly capabilities.

The propositions above might seem obvious for SOSCM and CE scholars and practitioners. However, their formal statement has two essential functions. First, they acknowledge the fundamental importance of the stated aims, purposes, and directions, positioning them as critical premises of the sustainability-dominant logic theory here introduced. Second, they set clear paradigmatic references for product design initiatives oriented by sustainability-dominant logic imperatives integrating key OSCM and CE assumptions.

In practice, propositions P1 and P2 can be related to important managerial opportunities and challenges to be considered by firms. For example, in the design process, including environmental factors in the bill of materials (BOM) of a product and related composition structure can be linked to useful data about product durability estimation and recyclability properties. This creates a valuable opportunity for businesses to feed product longevity and recoverability parameters into the generation of Digital Product Passports (DPP), which is a concept that has been gradually becoming a regulatory policy for a climate neutral and circular economy (Götz et al., 2022), requiring companies to collect and share product-related information along a product's lifecycle (Jansen et al., 2022).

Product longevity however posits potential challenges for manufacturers, as longer life span of products slows their throughput, i.e., products are replaced less frequently, which might consequently reduce sales revenue (Cooper, 2016). Companies are addressing this challenge by incorporating value-adding services into their product offers, through the design of product service systems (PSS) that focus on selling service and performance instead of just selling the tangible goods (Kjaer et al., 2019).

2.2. Sustainability-oriented value creation

The growing concern with the climate change and rising pollution levels has brought sustainability to the forefront of organisations' strategic priorities for improvement and innovation (Golgeci et al., 2022). Although the environmental dimension of sustainability tends to draw most of the attention of academics and practitioners, increasing pressure from diverse stakeholders is compelling organisations to also improve their social sustainability performance (Lim et al., 2022).

The social agenda is no less important than the green agenda. In fact, over the years organisations have been showing an increasing interest in developing corporate social responsibility (CSR) programmes as part of their SOSCM initiatives (M. F. Nunes et al., 2020). Together with the economic dimension of sustainability, the environmental and social dimensions form the triple bottom line agenda for sustainable OM (Operations Management), which is defined by Walker et al. (2014, p.2) as "*the pursuit of social, economic and environmental objectives – the triple bottom line [TBL] – within operations of a specific firm and operational linkages that extend beyond the firm to include the supply chain and communities*".

The call for businesses to create sustainability value to their communities is also considered by Porter and Kramer (2011), when they put forward the CSV (Creating Shared Value) concept as an evolution of CSR practices. Although some CSR scholars dispute the claim that CSV is an evolution of CSR (Crane et al., 2014), there is a consensus on this debate that products and services only create sustainable value when they benefit the communities they serve.

Taking into account wider OSCM perspectives for strategic business improvement, the concept of shared value focuses on the simultaneous progress of society and the economy, where the operating

practices that enhance the economic conditions of businesses should also advance the social conditions of the communities in which they operate (Menghwar & Daood, 2021). According to Porter and Kramer (2019), CSV can be implemented, inter alia, by reconceiving products and value chains to enhance the wellbeing of customers. For example by providing information on safety, nutrition quality, and consumption advice in food products (Song et al., 2017), or using information and communication technologies to enable new ways of sustainable value creation (Schilling & Seuring, 2022).

An important assumption emerging from the scholars' viewpoints above is that the creation of economic value should entail creation of environmental and social value. We therefore derive the proposition below as a conceptual basis of value creation underpinning a sustainability-dominant logic.

Proposition 3. **Under the sustainability-dominant logic, value creation is a sustainability-oriented process, which implies the creation of economic, environmental, and social value, with trade-offs managed to maximise benefits across the triple bottom line dimensions.**

Proposition 3 relates to a fundamental paradigm of the circular economy. Challenging the neoclassical economic thinking based on the idea that profit drives social benefits, CE assumes that environmental and social improvements are the drivers of economic gains and business value propositions should take into account social, environmental, and economic motivations holistically (Lovins et al., 2014).

Value creation in the circular economy has further fundamental assumptions. One in particular is based on the assumption that 'utilisation value' replaces 'exchange value', which Webster (2015) describes as 'value in use' replacing 'value in ownership'. In practice, businesses are creating utilisation value by including service-based value propositions in their business models (Stahel, 2016), which gave rise to the servitization movement largely implemented through PSS (product service system) offerings where goods, are sold as a service, liberating customers from the burden of ownership, maintenance, and repairing (Geissdoerfer et al., 2020). In fact, previous studies have shown that businesses perform better when they add a large proportion of service to their PSS offerings (Spring & Araujo, 2017).

From the points above, we derive Proposition 4, which lays down an additional theoretical fundament for value creation under a sustainability-dominant logic.

Proposition 4. **The creation of sustainability-oriented value places emphasis on utilisation value, rather than ownership value. Value is therefore delivered via product service systems where goods are the means through which products are provided.**

An important caveat to the proposition above is that the total elimination of ownership from an economy is a utopia. In many circumstances, goods represent assets, and the transference of ownership is part of an investment process (Woodin et al., 2010). The proposition therefore refers to the fundamental 'value adding' role of PSS in the creation of sustainability-oriented value, which, under a sustainability-dominant logic, emphasises the utility value added by the service element of a PSS. To be economically feasible, the added revenues enabled by the service component of PPS offerings should offset reduced incomes from slow ownership transferences.

In practice, utility value can be added to a range of products, varying from very complex servitization-oriented contracts where performance is measured on the basis of timely availability of products (Raddats et al., 2016) to less complex initiatives such as smart labelling of consumable products where information about the sustainable use, recycling, durability, repairability, and provenance can be

promptly provided to consumers (Danese et al., 2021; Wang et al., 2020).

2.3. Sustainability-oriented supply chain

The economic perspective of the circular economy, which is grounded on social, economic and environmental sustainability values, calls for further considerations of the sustainability-oriented characteristics of supply chains (Genovese et al., 2017). Such a topic has indeed become a well-established subject in the SOSCM literature across the triple bottom line dimensions, of which the economic and environmental dimensions usually draw predominant attention, with the social dimension receiving increased consideration from academics over the years (Sarkis, 2021).

MacCarthy et al. (2016) point out that the sustainability agenda is, inter alia, an important driver shaping the structure, configuration and the evolution of supply chains. This is emphasized in studies where specific sustainability-oriented terminologies have been used by OM researchers to highlight the sustainability dimension considered in their studies. The term 'green supply chains', for example, has been largely associated with OSCM studies concerning the environmental sustainability of supply chains (Tachizawa et al., 2015; Cousins et al., 2019), which are designed by taking into account environmentally sustainable factors (Liu et al., 2019).

In terms of supply chain configuration, a study by Blome et al. (2014) shows that the alignment of sustainability-related upstream and downstream collaborations improve the sustainability and market performance of organisations. Such collaborative integrations across supply chain actors are fundamentally important in the design of sustainability-oriented supply chains, where the recovery of resources involves reverse flows from downstream to upstream the supply chain, requiring further collaborations across supply chain actors (Sudusinghe & Seuring, 2022).

The circular economy posits central importance on the reverse flow of materials, as they implement the circularity capability expected from sustainability-oriented supply chains, which enable and maintain value from returns (i.e., secondary raw materials), while minimising the consumption of primary raw materials (De Giovanni, 2022). Noticeably, a growing number of OM scholars are using the term 'circular supply chains' to refer to sustainability-oriented supply chains in the circular economy context. Besides embedding reverse logistics and closed-loop supply chain concepts into a more evolved concept of sustainability-oriented supply chains (Batista et al., 2018; Braz & de Mello, 2022), circular supply chains aim to enable value chains' circularity for a wider scope of resources (e.g., products, by-products and waste materials), where upstream-downstream forward flows of primary raw materials are integrated with downstream-upstream reverse flows of secondary raw materials. We elaborate on this important characteristic of circular supply chains by postulating the following proposition concerning key attributes of sustainability-oriented supply chains under a sustainability-dominant logic:

> ***Proposition 5.*** **In circular supply chains, the flow of resources in supplier-buyer dyads is potentially bidirectional, in the sense that buyers are latent suppliers of secondary raw materials, and suppliers are latent buyers of secondary raw materials.**

The reciprocal inversion of supplier-buyer roles mentioned in Proposition 5 is successfully exploited by Caterpillar, in its Cat Reman remanufacturing programme, where customers supply the company with engines at the end of their serviceable life for restoration to same-as-new condition and further supply offers (Atasu et al., 2021).

By taking into consideration the dual potential roles of supply chain actors as underlined in Proposition 5, the alignment of upstream-downstream collaborations in circular supply chains supporting the recovery and sourcing of secondary raw materials becomes more complex, as alignment with further actors external to the focal supply chain is necessary to enable the circular flow of resources (Bimpizas-Pinis et al., 2022). As De Angelis et al. (2018, p.432) point out, "*circular supply chains are enabled by close supply chain collaboration with partners within and beyond their immediate industrial boundaries, including suppliers, product designers and regulators* [and so forth]". Such wider collaborative integrations were successfully implemented by Tetra Pak (TP), a global packaging manufacturing firm which developed supply chain collaborations between recyclers, shopping centres, retailers and waste collecting cooperatives to implement circular supply chains to recover and recycle used TP packaging in China and Brazil (Batista et al., 2019).

Considering the wider scope of supply chain actors in circular supply chains, we expand on Blome's (2014) evidence on the critical importance of aligning upstream and downstream supply chain collaborations to improve the sustainability performance of organisations by elaborating Proposition 6 below, which also reinforces the potential bidirectionality of resource flows across supplier-consumer nodes of a circular supply chain.

Proposition 6. **Under the sustainability-dominant logic, a circular supply chain denotes the existence of resource recovery flows in the supply chain of a focal company. Therefore, the supply chain configuration should consider not only upstream-downstream collaboration alignments, but also downstream-upstream collaborations involving internal and external supply chain actors.**

The separation of 'upstream-downstream' from 'downstream-upstream' collaborations allows conceptual connotations specifically attached to 'forward' and 'reverse' supply chain flows respectively, which are likely to require different types of collaborations involving different types of materials, different collaborative roles (i.e., customers become suppliers and suppliers become customers), and a diverse configuration of internal and external actors, depending on the supply chain flow considered (Bimpizas-Pinis et al., 2022).

Giving consideration to the specific nature of such collaborations might avoid unintended consequences of CE implementation. For instance, specific coordination, collaboration, and integration is needed to minimise the possibility of circular rebound effects, where CE implementation activities might increase overall production which can partially or fully offset the intended CE benefits (Zink & Geyer, 2017).

In practical terms, CE implementation is useless if it does not reduce dependence on primary resources. Achieving such a result is not straightforward, as the circular flow of resources might transcend the boundaries of a supply chain, involving institutional actors external to the supply chain. Such wider collaborative integrations were implemented by Tetra Pak (TP), a global packaging manufacturing firm which developed supply chain collaborations involving recyclers, shopping centres, retailers, schools, waste collecting cooperatives, and other actors to implement circular supply chains to recover and recycle used TP packaging in China and Brazil (Batista et al., 2019).

Table I provides a summarised view of the six sustainability-dominant logic propositions introduced in this paper, grouped by the managerial levels they refer to, and the related sustainability mindset at each level.

Table I – Sustainability-dominant logic propositions derived

from key SOSCM and CE premises

Managerial level	Proposition
PRODUCT *Sustainability is embedded in the properties and functionalities of products*	1. Product design entails an eco-design process in which sustainability factors must be considered from the early conceptual stages of the design process, in which end-of-life recovery of the product and related composite materials should be accounted for.
	2. Product design should be aimed at maximising the sustainability value of a product and related composite materials in terms of prolonged utility and increased recoverability enabled by durability, repairability, recyclability, and disassembly capabilities.
VALUE CREATION *Sustainability is embedded in the added value proposition of firms*	3. Under the sustainability-dominant logic, value creation is a sustainability-oriented process, which implies the simultaneous creation of economic, environmental, and social value, with trade-offs across the three sustainability dimensions managed to maximise triple bottom line benefits.
	4. The creation of sustainability-oriented value places emphasis on utilisation value, rather than ownership value. Value is therefore delivered via product service systems where goods are the means through which products are provided.
SUPPLY CHAIN *Sustainability is embedded in the circularity capabilities of supply chains*	5. In circular supply chains, the flow of resources in supplier-buyer dyads is potentially bidirectional, in the sense that buyers are latent suppliers of secondary raw materials, and suppliers are latent buyers of secondary raw materials.
	6. Under the sustainability-dominant logic, a circular supply chain denotes the existence of resource recovery flows in the supply chain of a focal company. Therefore, the supply chain configuration should consider not only upstream-downstream collaboration alignments, but also downstream-upstream collaborations involving internal and external supply chain actors.

The special issue "**Applying operations and supply chain management theories in the circular economy context**" of the *International Journal of Operations and Production Management* presents a set of current studies whose theoretical considerations and main outcomes link SOSCM and CE concepts, practices, and principles, which corroborate some of the key aspects addressed in the propositions above introduced.

For instance, the study conducted by Kühl et al. (2022) show that a company's environmental awareness bolsters the implementation of use- and result-oriented product service systems (PSS) where the utility value of products (value in use), rather than ownership, is maximised. They highlight the important role PSS can play in enabling product stewardship (EPR – Extended Producer Responsibility) strategies, which are supported by circular supply chains. Their research findings also reveal that firms' contextual factors (e.g., technological changes) might inhibit the contribution of PSS to extending product life and the (re)cycling of resources. They point out that increasing the integration with supply chain actors is critical to minimise external constraints and improve a firm's PSS and circularity performance.

In another study, Marques and Manzanares (2022) investigate how CE strategies such as 'narrowing loops' (reduce raw material inputs), 'slowing loops' (maintain product utility through recovery services for as long-as-possible), and 'closing loops' (avoid disposal flows through recovery initiatives) influence organisational transitions from linear to circular operations. They point out that sustainable product design and product life-extension services are essential initiatives to support the implementation of those CE strategies and their joint implementation maximises organisational transitions to the circular economy. They also analyse how 'betweenness centrality' (how frequently an actor lies in supply chain nodes), 'eigenvector centrality' (the number of an actor's connections to other actors with high betweenness centrality) and 'network density' (number of actual ties or connections in a supply chain in relation to the number of maximum potential ties) influence the power of actors in a supply chain. Their discussion provides valuable insights on the dynamics of supplier-buyer alignments in a supply chain. By recognising the critical importance of supplier-buyer alignments in circular supply chains, they suggest that better downstream-upstream alignments with supply chain actors implementing recovery flows might better distribute power and reduce the betweenness centrality of supply chain funnel leaders.

In another paper of the special issue, Chavez et al. (2022) reinforce the importance of sustainable product design in closing, slowing and dematerialising energy and material flows in the circular economy. These perspectives relate to the narrowing, slowing and closing material loop strategies discussed by Marques and Manzanares (2022). Their conclusions support the view that sustainable product design should consider sustainability factors at the very early stage of a product's life cycle, when the use of environmentally friendly materials that can be more easily reused, recovered, disassembled, recycled, and biodegraded can be taken into account. They also point out that information exchange between supply chain actors allows better alignments across the supply chain and increase the environmental awareness of firms, which, by its turn, leads to more environmentally friendly OM practices concerning product design, materials sourcing, production, and distribution.

3. Conclusion

This paper puts forward six theoretical propositions underlying a sustainability-dominant logic for sustainable operations and supply chain management (SOSCM) and the circular economy (CE). Drawing from the theoretical intersections between SOSCM and CE literature, we introduce foundational premises that underpin key sustainability-oriented principles, concepts and practices promoted by SOSCM and CE.

The sustainability-dominant logic here introduced has two intertwined purposes. On one hand, it aims to provide a coherent CE theoretical basis to support SOSCM research. On the other hand, it provides clear SOSCM perspectives and managerial concepts supporting the CE paradigm. By doing so, the sustainability-dominant logic here proposed has the ultimate objective of providing a convergence field of knowledge for the many theoretical lenses used by OM scholars to develop CE-related research. At the same time, it seeks to fulfil the theoretical void of CE research.

This is a challenging task, given the wide scope and the SOMSC discipline and the magnitude of CE practices and related sustainability tenets. The work started here is therefore far from being concluded. It by no means stresses the myriad of intersection points where SOCM and CE reinforce each other's sustainability precepts. Rather, this paper is just starting the work by 'sowing the seeds' of a much-needed sustainability-dominant logic.

We do not intend the sustainability-dominant logic to replace SOSCM and CE. Our main intention is to underly and theoretically convey the sustainability emphasis of SOSCM and CE, characterising their reinforcing tenets under a clear sustainability-dominant logic, which provides a plausible referential mindset and a coherent lens through which we can understand and explain economic, social, and environmental sustainability phenomena.

As Oliva (2019) puts it, theories are never finished. The theoretical propositions formulated here, as well as the ones formulated by further research, should be evaluated on their logical appeal and coherence. The proposed logic offers a fertile area to which OM scholars can add valuable and innovative insights, which might upset our understanding, but at the same time provide refreshed insights for well-established and evolving knowledge areas such as SOSCM and CE respectively.

We therefore invite the OM community to further develop the sustainability-dominant logic through further theorisation studies and/or empirically based theory development, where the constructs in the theoretical propositions here introduced, and in other propositions introduced in future research, can be operationalised and tested. Over time, a sustainability-dominant logic for the circular economy, on which SOSCM research can be anchored, can evolve to have a wider scope of generalisations and a wider range of theoretical instances.

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