



From Social Innovation to Circular Economy: A Conceptual Review

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ABSTRACT

Environmental degradation, resource scarcity and climate change are increasingly urgent problems and is precipitating a global transition to circular economy models by promoting sustainable resource use and waste minimization. Traditionally, technological innovation has been considered as the main driver of circularity, but the role of social innovation to enable systemic and sustainable change is gaining more and more attention. This paper offers a comprehensive review of the literature on the role of social innovation in facilitating the circular economy. It describes the conceptual bases of social innovation and circular economy and discusses how social innovation can help develop and adopt circular products, processes and business models. Based on Social Innovation Theory, Stakeholder Theory and Dynamic Capabilities Theory, the paper argues that stakeholder collaboration, knowledge sharing, participatory governance and value co-creation are critical enablers of circular innovation. The review shows that social innovation-capable organizations can overcome institutional and behavioral hurdles to circular economy transitions. Merging two growing research streams and providing practical insights for researchers, managers, and policymakers to adopt the circular economy adds to sustainability. Social innovation is a key strategy for sustainable and inclusive circular

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development, according to the report.

Introduction

As natural resources are depleted, the environment is degraded and societal problems are growing, it has become more important for organizations to find sustainable and regenerative ways of innovation. The circular economy is being touted as an attractive model for waste reduction, increased resource efficiency and sustainable production and consumption. But a successful transition from a linear to a circular economy needs more than technological advances. It needs innovative social processes, collaboration among stakeholders and institutional change. Within this framework, social innovation has become ever more significant as a way to deal with difficult social and environmental problems while generating shared value for various stakeholders.

Social innovation enables organizations to develop collaborative solutions, engage a variety of stakeholders and redesign business models for sustainable resource management and circular practices. Social innovation contributes to fostering new forms of cooperation, sharing of knowledge and community participation that generate favorable conditions for the development and implementation of circular innovations. While there has been an increase in academic interest in both social innovation and the circular economy, there is a lack of empirical evidence that examines the direct relationship between the two constructs, particularly in emerging economies. The role of technological innovation as a driver of circularity has been largely the focus of existing literature, while the role of social innovation in enabling circular innovation has been relatively neglected. This paper investigates the role of social innovation in promoting circular innovation. The study is based on the theoretical underpinnings of Social Innovation Theory, Stakeholder Theory and Dynamic Capabilities Theory, and hypothesizes that organizations with higher social innovation capabilities are able to develop and implement innovative circular products, processes and business models. The study contributes to the growing literature of sustainable innovation, by exploring this relationship and provides practical implications for managers and policy makers seeking to accelerate the transition towards a sustainable and circular economy.

Social Innovation

Social innovation (SI) is “the creation and implementation of new ideas, processes, products, services or models of organisation that meet social needs, create social value and enhance social welfare” (Mulgan, 2006; Murray et al., 2010, Tracey & Stott, 2017). Social innovation is emphasizes on solving complex soceital and environmental challenges through participation, cooperation and sustainable value creation,



while traditional innovation is primarily focuses on technological advancement and economical aspects. With the challenges of climate change, resource depletion, inequality and waste generation, social innovation has emerged as a key instrument to attain sustainable development and enable shift to circular economic systems.

The idea of social innovation has changed a lot in the past two decades. Early definitions focused on new solutions to unsatisfied social needs (Mulgan, 2006). Later scholars elaborated further the idea of social innovation, emphasizing the transformative nature of social innovation, which, they argued, not only creates new solutions, but also changes social relationships, governance structures, institutional arrangements and patterns of resource use (Cajaiba-Santana, 2014). Social innovations are innovations that are social in both their ends and means, and that are developed and diffused by social actors in the context of their social relations (BEPA, 2011, European Commission, 2013).

Social innovation is about cooperation and participation. This is often a partnership between business, government, non-governmental organizations (NGOs), local communities, research institutions and citizens. Organizations come together to contribute their different expertise, resources and capabilities to develop solutions that are more effective, equitable and sustainable than traditional approaches. The collaborative processes that set social innovation apart from simple technological innovation, as the scope shifts beyond new products to shifts in governance, institutional practices, business models and community engagement.

Dimensions of social innovation

As SI incorporates a broad landscape, researchers have tried to comprehend it in many ways by emphasizing its various aspects. It is characterized by several dimensions.

Novelty: Novelty refers to the creation of new or significantly improved ways of addressing social and environmental problems (Phills et al., 2008). Pol and Ville (2009) describes Social innovation as "an innovation is termed a social innovation if the implied new idea has the potential to improve either the quality or the quantity of life."

Social value creation: Social value creation refers to generating better societal welfare, environmental sustainability and community resilience, rather than maximizing financial returns (Mulgan et al. (2007; European Commission, 2013).

Stakeholder participation: Stakeholder participation refers to the need for active engagement of beneficiaries and communities in the design and delivery of innovative solutions (Mumford, 2002).

Systemic change: Systemic change refers to the potential of social innovation to transform institutions, behaviors and relationships that underlie persistent societal challenges (Heiscala, 2007; Moulaert et al. 2013). Sustainability and scalability ensure that innovative solutions have a lasting impact and can be adapted to different settings.

Table 1 Definitions of social innovation

Dimension	Definition	Author
Novelty and Solutions	Social innovations are “Any novel and useful solution to a social need or problem, that is better than existing approaches (i.e., more effective, efficient, sustainable, or just) and for which the value created (benefits) accrues primarily to society as a whole rather than private individuals”.	Phills et al. (2008)
	"an innovation is termed a social innovation if the implied new idea has the potential to improve either the quality or the quantity of life”.	Pol and Ville (2009)
	Social innovations is “new social practices that aim to meet social needs in a better way than the existing solutions, resulting from, for example, working conditions, education, community development or health”.	Kim et al. (2022)
Social needs and benefits	social innovation involves "new ideas (products, services, and models) that simultaneously meet social needs and create new social relationships or collaborations".	Murray et al. (2010)
	social innovations as “innovations that are both social in their ends and in their means, remaining open to the territorial, cultural, etc. variations it might take”.	European Commission (2013)
Collective Action	Social innovations as “the generation and implementation of new ideas about how people should organize interpersonal activities, or social interactions, to meet one or more common goals.” social innovation as a collective creation of new	Mumford (2002)

	legitimated social practices aiming at social change”. “social innovation as a collective creation of new legitimated social practices aiming at social change”. social innovation as "a complex process of innovation involving social actors and institutions aiming to meet social needs that are not adequately addressed by existing solutions". Social innovations “as collaborative actions and participatory processes that intend to satisfy social needs, aim to achieve common desires and aspirations and thereby aspire to help improve society”.	Cajaiba-Santana (2014) Westley and Antadze (2010) Calò et al. (2024)
Social goals and collaboration	Social innovations “new combination⁴ and/or a new configuration of social practices in certain areas of action or social contexts prompted by certain actors or constellations of actors in an intentional targeted manner with the goal of better satisfying or answering needs and problems than is possible on the basis of established practices”. “Social innovations are innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organizations whose primary purposes are social.” “Social innovations are new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society’s capacity to act”.	Howaldt and Schwarz (2010) Mulgan et al. (2007) Caulier-Grice et al. (2012)

Systemic change	“Social innovations are changes in the cultural, normative or regulative structures of the society which enhance its collective power resources and improve its economic and social performance.	Heiscala, (2007)
	social innovation as “innovation in social relations within both micro and macro spheres, with the purpose of satisfying unmet or new human needs across different layers of society.”	Moulaert et al. (2013)

Theoretical perspective of social innovation

Theoretical approaches give important reasons for the understanding of social innovation. Social Innovation Theory proposes that the solution to complex societal problems involves new institutional arrangements, collaborative governance and new social practices that change existing systems (Cajaiba-Santana, 2014). Institutional Theory also argues that organizations pursue social innovation as a response to changing societal expectations, regulatory pressures, and stakeholder demands, thus improving legitimacy and long-term sustainability (Scott, 2017). Stakeholder Theory (Freeman, 2010) states that organizations generate more value if they engage various stakeholders in the process of identifying social problems and co-creating solutions. Moreover, social innovation capability is identified as a strategic organizational resource that not only enhances competitive advantage but also generates positive social outcomes (Barney, 1991;).

Circular Economy

The circular economy (CE) has been presented as a disruptive economic model, aiming to decouple economic growth from resource use through the continuous flow of materials, products and resources in the economy. Unlike the traditional linear economic model of “take–make–dispose”

based on the extraction of virgin resources and production of large volumes of waste, the circular economy is based on the design out of waste and pollution, the keeping of products and materials in use for as long as possible and the regeneration of natural systems (Ellen MacArthur Foundation, 2013). Concerns about climate change, biodiversity loss, resource depletion and environmental degradation are increasing and the notion of a circular economy has been widely accepted as a practical approach to sustainable development and improved long-term economic resilience.



The concept of circular economy builds on a number of theoretical schools of thought like industrial ecology, cradle-to-cradle design, regenerative design, biomimicry, performance economy and systems thinking (Geissdoerfer et al., 2017). While the term gained popularity in the early 2000s, the theoretical basis of the concept can be traced to earlier works that emphasize closed-loop production systems, industrial symbiosis, and sustainable resource management. The concept was largely refined by Ellen MacArthur Foundation (2013) who defined circular economy as an economic system that is regenerative and restorative by design. The objective is to cut down waste by designing products with waste minimisation as a priority, making efficient use of resources and using renewable energy.

The circular economy is a fundamentally different way of managing resources and creating value than the linear approach. The linear economy is based on the extraction of raw materials, the production of products and the consumption and disposal of waste. This approach has resulted in the over-exploitation of resources, more greenhouse gas emissions and higher environmental pollution. Conversely, the circular economy aims to keep products, components and materials in the economy as long as possible by using strategies like reducing the consumption of materials, reusing products, repairing damaged goods, refurbishing existing assets, remanufacturing components and recycling materials at the end of their useful life (Kirchherr et al., 2017). Such strategies minimize environmental impacts over the life cycle of a product and reduce dependency on virgin resources.

The circular economy is usually implemented by the R-framework that has been developed from the traditional 3Rs (Reduce, Reuse, Recycle) to more comprehensive 9Rs or 10Rs frameworks. For example, the levels of circularity and value retention in Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle and Recover (Potting et al., 2017). Generally, higher-order strategies such as avoiding unnecessary consumption, rethinking product use and extending product life are more environmentally beneficial than end-of-life recycling, because they keep more embedded value within products and materials.

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The circular economy is underpinned by several core principles. The first element is designing for durability: durable, modular, repairable and recyclable products; the second element is resource efficiency: reduction of material and energy inputs and maximization of productivity along the value chain (Gisellini et al., 2016); the third element is closed-loop systems: the waste from one process becomes input for another process, reducing the amount of waste sent to landfill and the environmental pollution caused by it; the fourth element is the use of renewable resources: substitution of finite resources with renewable ones where feasible; the fifth element is systems thinking: recognition of the interconnectedness of economic, environmental and social systems and promotion of collaborative action by stakeholders to achieve sustainable outcomes.

Innovation is required in products, processes, business models and institutional arrangements to put circular economy principles into practice. Circular business models comprise product-as-a-service systems, sharing platforms, leasing models, reverse logistics, industrial symbiosis, remanufacturing and resource recovery systems. These models change the focus of the organization from maximizing the sale of products to maximizing the use of products, productivity of resources and long-term customer value. Thus, companies implementing circular economy strategies often experience improved operational efficiency, reduced production costs, improved supply chain resilience and improved environmental performance.

Theoretical Perspective

The circular economy has a number of complementary theories that support it from a theoretical perspective. The Industrial Ecology Theory treats industrial systems as similar to natural ecosystems where flows of materials and energy are continuously cycled to minimize waste and maximize resource productivity (Frosch & Gallopoulos, 1989). The Natural Resource-Based View (NRBV) argues that environmental capabilities (pollution prevention, product stewardship and sustainable development) are strategic resources to improve competitive advantage (Hart, 1995). Likewise, the Dynamic Capabilities Theory maintains that organizations need to reconfigure their resources, technologies and organizational processes continuously to be able to successfully implement circular business models in dynamic environments (Teece et al., 1997). Both of these theories provide a rationale as to why organizations that implement circular economy practices tend to perform better in different environmental, social and economic metrics.



Circular Economy and Sustainable Development

The circular economy is an important contributor to three pillars of sustainable development, i.e. economic prosperity, environmental protection and social well-being. Environmental benefits include a reduction of greenhouse gases, less waste, less use of natural resources, and better protection of biodiversity through the efficient use of resources and regenerative production systems. Circular business models create new market opportunities, improve resource productivity, reduce operating costs and increase the resilience of organizations to volatility in the prices of resources. Circular economy initiatives also have a social impact, creating jobs in the repair, remanufacturing, recycling and resource recovery industries, while also promoting inclusive economic participation and encouraging the development of communities.

The United Nations Sustainable Development Goals (SDGs) are highly relevant to the concepts of a circular economy as they recognize the multidimensional benefits of the latter. Circular economy practices directly contribute to SDG 12 (Responsible Consumption and Production), but also support SDG 6 (Clean Water and Sanitation) through resource-efficient water management, SDG 7 (Affordable and Clean Energy) through renewable energy adoption, SDG 8 (Decent Work and Economic Growth) through green employment, SDG 9 (Industry, Innovation and Infrastructure) through sustainable industrial innovation, SDG 11 (Sustainable Cities and Communities) through urban resource management, SDG 13 (Climate Action) through emissions reduction, and SDGs 14 and 15 through reduction of pollution impacting terrestrial and marine ecosystems.

Yet, the circular economy has some challenges for its implementation, despite its great potential. Common challenges organizations face are technological limitations, limited recycling infrastructure, fragmented supply chains, regulatory uncertainty, high upfront investment costs and low consumer awareness. In addition, successful transitions to circularity depend on behavior change, collaboration among organizations, enabling public policies and innovative financing mechanisms. Therefore, scholars increasingly argue that technological innovation alone is not enough to achieve circularity and that complementary organizational capabilities, such as leadership, organizational learning, stakeholder collaboration and social innovation are equally important to enable circular transitions (Geissdoerfer et al., 2017; Kirchherr et al., 2017).

The circular economy provides an integrated model for sustainable resource management by supporting regenerative production systems, closed material loops and collaborative value creation. The growing adoption of circular principles by organizations to tackle urgent sustainability challenges has made the understanding of the antecedents driving circular innovation an important research area. In this context,



social innovation has emerged as an important organizational capability that allows firms to reconfigure products, processes, business models, and stakeholder relationships in ways that accelerate the transition from linear to circular systems.

Social Innovation and Circular Economy

Among numerous activities are being applied to mitigate the environmental issues because of human activities, circular economy is reflected to be the most significant (Vranjanac et al., 2023). Circular innovation is about creating innovative products, services, processes and business models that allow organizations to implement circular economy principles, such as resource efficiency, waste reduction, reuse, remanufacturing, recycling and extending product life (Geissdoerfer et al., 2017). Technological innovation is an important enabler of circularity. However, recent literature suggests that technological solutions alone are not sufficient to achieve a successful circular transition. Instead, social innovation is increasingly recognized as a crucial enabler, as it changes behaviors, organizational practices, stakeholder relationships and institutional arrangements supporting circular systems.

The link between social innovation and circular innovation is based on the premise that transitions to circular economy require deep changes to production and consumption systems and these changes are heavily dependent on social collaboration, trust, learning and collective action (Jabbour et al., 2020). Social innovation helps these changes by fostering the adoption of inclusive governance mechanisms, community engagement, collaborative business models and partnerships across value chains within organizations. These mechanisms better enable organizations to design and implement circular innovations that create economic, environmental and social value at the same time. Another way social innovation encourages circular innovation is through greater collaboration of stakeholders. Circular business models often require collaboration between manufacturers, suppliers, consumers, waste management companies, governments and societal organizations. Social innovation also improves these collaborative networks by promoting knowledge sharing, co-creation and participatory decision-making, facilitating the exchange of resources and expertise needed for circular innovation. Social innovation fosters enabling environments for circular practices, e.g. collaborative platforms, repair networks, sharing economy initiatives and community recycling programmes.

Social innovation promotes behavioral and cultural change which is key for successful circular innovation. Moving from linear “take-make-dispose” production systems to circular ones requires that organizations and consumers adopt new attitudes to resource consumption, product ownership, waste management and sustainable lifestyles. Social innovation is a process that creates circular behavior and proactive participation



in sustainable resource management through awareness campaigns, community engagement, education and practicing participatory governance.

In addition, social innovation facilitates the development of inclusive circular business models that integrate social impact and economic viability. Social enterprises often demonstrate waste collection and repair services, remanufacturing, upcycling and recycling activities to contribute to the social integration of marginalized communities into circular value chains. Such models create jobs, reduce environmental damage and better use of resources. Social innovation can directly contribute to circular innovation and to wider social challenges as such as recycling cooperatives, repair cafés, community composting initiatives and upcycling organizations.

Social innovation builds upon these adaptive capabilities, and promotes learning, collaboration, experimentation and stakeholder engagement, enabling organizations to innovate circular products, processes and business models. Likewise, the Multi-Level Perspective (Geels, 2011) suggests that sustainability transitions are a result of interactions among technological innovations, institutional changes, market dynamics and social innovations. Social innovation, therefore, is an important driver in accelerating systemic transitions in circular economies.

Recent empirical studies further the evidence for a positive relationship between social innovation and circular innovation. Successful transitions to circular economy require strong social innovation, as technological innovations alone cannot overcome institutional barriers and behavioral resistance (Henry et al. In this line, Participative governance, collaborative networks and inclusive institutional arrangements is very crucial for the implementation of circular innovations at organizational and societal level (Calisto Friant et al., 2021). In addition, organizations innovating in circular business models achieve better results when they engage diverse stakeholders and foster a collaborative experimentation process during the innovation process (Konietzko et al., 2020).

Conclusion

The transition to a circular economy requires companies to go beyond traditional technology solutions and embrace innovative approaches that integrate social, environmental and economic goals. The paper points out the significance of social innovation as an enabler of circular innovation by means of stakeholder collaboration, knowledge sharing, participatory governance and the development of sustainable business models. The paper offers a broad review of the literature and demonstrates that organizations capable of



creating social value through innovative practices are more likely to design and implement circular products, processes and systems to enhance resource efficiency and long-term sustainability.

The review further suggests that social innovation provides the institutional and relational conditions for the flourishing of circular innovation. Social innovation helps firms to overcome many of the social and institutional barriers to circular economy transitions through the strengthening of collaborative networks, the encouragement of community participation and the fostering of organizational learning and adaptive capabilities. Circular innovation should thus not only be viewed as a technological or operational output, but as the result of a broader social and organizational transformation.

In this paper we add to this emerging literature by bringing together the notions of social innovation and circular innovation into a coherent theoretical framework. It highlights the importance of Social Innovation Theory, Stakeholder Theory and Dynamic Capabilities Theory for explaining how organizations can leverage collaborative capabilities and social value creation to accelerate circular transitions. The proposed conceptual relationship also offers a basis for future empirical research to investigate the mechanisms by which social innovation affects various dimensions of circular innovation in both industries and institutional contexts.

The findings have practical implications for managers to develop organizational cultures that enhance collaboration, stakeholder engagement, knowledge exchange, and experimentation to improve their circular innovation capabilities. Policymakers can enable this transition by building enabling institutional environments through supportive policies, cross-sector partnerships, innovation funding and capacity building initiatives that foster socially driven circular solutions. Such efforts can speed up the pace towards sustainable production and consumption, while contributing to broader sustainable development goals.

Limitations and future research

The paper is a contribution to the body of knowledge but the proposed relationship between social innovation and circular innovation is theoretical without being tested empirically. Future research can test the proposed framework in different industries and geographical contexts, both quantitatively and qualitatively. The researchers can investigate possible mediating and moderating variables such as organizational learning, digital transformation, leadership, institutional support and sustainability orientation to provide a more holistic view of the factors affecting circular innovation.

In conclusion, social innovation is a strategic capability for addressing societal challenges as well as for driving circular innovation and sustainable transformation. Embedding social innovation in the strategic and



operational practices of organizations is likely to better equip them to develop resilient, inclusive and resource efficient solutions and thus support the global transition to a more circular and sustainable economy.

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