



## Full Length Article

## A conceptual review of circular economy position from a marketing perspective

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## ABSTRACT

The circular economy (CE), or circularity, is a concept widely embraced by researchers and policymakers to enhance sustainability in marketing innovation. This approach emphasizes recycling, reusing, and reducing waste, catering to the needs of eco-conscious consumers while improving companies' brand images. However, existing research on CE has primarily concentrated on established businesses and multinational corporations, with limited focus on emerging areas, especially the marketing perspective of CE. To address this gap, a systematic literature review (SLR) protocol was conducted using the Scopus and Web of Science (WoS) databases to identify key scholarly works. VOSviewer was employed to perform a bibliometric analysis and visualize the findings. The results indicate that implementing CE can significantly enhance marketing innovation, foster the development of innovative business models, attract eco-conscious consumers, and inspire new marketing strategies. Additionally, the research identifies challenges related to CE and underscores the importance of integrating CE into marketing practices. These findings not only guide future research but also aid policymakers in implementing CE within the marketing sector. This conceptual review introduces a novel framework that positions marketing as a driver, rather than just a supporter, of CE practices. It applies paradox theory to analyze tensions and offers a structured visualization of CE marketing systems. These contributions distinguish our study from the existing literature while highlighting both the theoretical and practical significance of this approach.

## 1. Introduction

The current market economy primarily follows a linear model. This means it focuses on extracting resources from the Earth, manufacturing products, using them, and eventually discarding them as waste, with minimal emphasis on recycling or reuse. Consequently, valuable materials are lost, and pollution is generated. In contrast, a circular economy (CE) presents a more sustainable approach to meeting human needs by decoupling economic activities from the consumption of non-renewable resources (MacArthur, 2024). The CE framework allows businesses to address key marketing priorities, such as managing demand and supply, enhancing value propositions, reducing costs, increasing resilience, mitigating ecological damage, and conserving resources.

The concept of CE has gained significant attention from both academics and major industry players (Vann Yaroson et al., 2024). By 2026, it is expected that the CE will contribute to a 40 % reduction in emissions, create nearly 2 million jobs, and develop into a thriving market valued between \$2 to \$3 billion, while also improving supply chain resilience (Deloitte, 2024). However, transitioning to CE practices poses

challenges and requires a fundamental shift in business operations. According to Suchek et al. (2021), three key principles underpin CE from a marketing perspective: (a) conserving and maintaining natural capital, managing finite resources, and stabilizing the flow of sustainable resources; (b) maximizing resource efficiency through the production of goods and materials; and (c) identifying and eliminating negative externalities at the beginning of the process.

CE cannot be achieved through isolated efforts; it requires a substantial transformation in marketing, manufacturing, partnerships, and economies, driven by a systemic shift in behaviors, norms, and societal values. Kirchherr et al. (2018) noted that a lack of interest, awareness, and a hesitant company culture are significant obstacles preventing businesses from adopting a CE, which is why it has not yet become mainstream. To address these challenges, Prieto-Sandoval et al. (2018) emphasize that market dynamics, product development, processes, business models, and organizational structures are essential for creating a functional CE and making the transition visible. Although initiatives and funding can support the shift towards a CE, the implementation from a marketing perspective remains underexplored. Circular suppliers

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and manufacturers play a crucial role in achieving circularity by assisting businesses in establishing take-back systems and transitioning to a functional CE (Zupply, 2024).

Past studies indicate that some consumption and production activities are unsustainable (Ogiemwonyi & Jan 2023a), leading to environmental depletion and economic waste. Kirchherr et al. (2023) revealed that only 9 % of the world economy currently operates under a circular model, indicating a potential improvement of up to 91 %. According to *Economist Impact* (2023), the global economy remains wasteful, with over 90 % of extracted resources consumed without being reintegrated into production cycles, ultimately resulting in waste. A successful CE relies on coordinated efforts across the entire value chain, focusing on waste elimination, value preservation, product life extension, and transforming consumer behavior. Policymakers must establish a vision and guide the marketing sector in this transition, with academics playing a significant role. The private sector suggests that new business approaches are critical in advancing from a linear economy to a CE (Antikainen et al., 2017; Henry et al., 2020; Lüdeke-Freund et al., 2018). While many studies have explored the CE from policy and technological perspectives, few have assessed its impact on reshaping marketing systems, brand strategy, and consumer behavior. This gap highlights the potential for marketing to serve as a primary driver in the CE transition. The marketing perspective is essential, as it affects both upstream activities like production and promotion, and downstream activities like consumption and disposal.

Many countries are gradually exploring various ways to implement CE practices to achieve sustainable development goals (SDGs). Developed countries benefit from strong economies, while developing nations are experiencing gradual growth, and underdeveloped nations continue to face slow economic progress. These challenges arise from several shortcomings. Recognizing metrics for responsible consumption and promoting green marketing within a CE framework can enhance sustainability. However, research on a CE from a marketing perspective remains limited. Ogiemwonyi (2022) highlighted the importance of CE principles and their environmental impact on green marketing.

The environmental impact of CE in marketing encompasses reducing marketing pressure, boosting sales, driving marketing innovation, and extending product lifespans. It is crucial to identify the factors that encourage a rethinking of consumption within the CE framework, particularly from a marketing standpoint. The CE offers an alternative to the traditional linear economy (Agrawal et al., 2025; Koval et al., 2022). This model helps mitigate the negative effects of inefficient consumption (Dragomir & Dumitru, 2022) and promotes industrial sustainability through a marketing lens, guiding businesses toward more sustainable practices (Lu et al., 2024). Combining responsible consumption with the CE enhances product value and reduces waste generated throughout the value chain. These dynamics position marketing at the center of the CE ecosystem, which is important for improving circular consumption patterns and encouraging more circular business practices.

According to Berlin et al. (2022), a functional CE is socially relevant from a green marketing perspective because it allows products to be recycled and transformed into resources, reducing ecological impact. The CE represents a systemic change rather than just a collection of sustainability initiatives, promoting durable, recyclable, repairable, and reusable products throughout their lifecycle (Hattar, 2023). Shifting cultural mindsets is essential to breaking the cycle of disposable consumption. Embracing CE principles (Tanveer et al., 2025) can provide businesses with new opportunities, long-term value, and sustainable solutions to societal marketing challenges (Sharma et al., 2021). The CE acts as a framework for transformative change, with its principles enhancing marketing strategies to create lasting societal impact (Samani, 2025). Transitioning to a CE offers various social marketing benefits (Koval et al., 2022). For instance, it encourages new consumption patterns and could save an estimated \$380 billion in the European Union. Companies have implemented waste management systems that foster economic growth and improve business activities

within a CE (MacArthur, 2020).

Global material consumption has reached 65 billion tonnes and is projected to rise to 190 billion tonnes by 2060 (Oberle et al., 2019). When materials no longer meet consumer needs, they become end-of-life and are often discarded. Rethinking responsible consumption is essential for transforming these products into reprocessed and reused materials. CE solutions offer opportunities for various industries to address this challenge (Horn et al., 2025). CE principles are vital for reducing waste, contributing to SDG 12 and sustainable development overall (Losa, 2025). By adopting a CE approach, businesses can minimize environmental impacts, lower CO<sub>2</sub> emissions, reduce costs, and enhance resilience while promoting social equity and utilizing renewable energy (Bappenas & UNDP, 2021). CE encourages responsible consumption through strategies such as reducing raw material use, extending product life cycles, and fostering a stewardship mindset towards resources (Circular Academy, 2024; European Union, 2020). As illustrated in Section 3.2 and Fig. 6, these principles are essential for implementing CE. However, despite the growing interest in CE (Deloitte, 2024), challenges such as high investment costs, poor strategy execution, and difficulties in monitoring circularity hinder effective implementation (De Pascale et al., 2023; Kirchherr et al., 2018; Palombi et al., 2024).

This study aims to identify gaps in the literature on CE and proposes a marketing-focused approach to address existing barriers. While CE business models are a relatively recent addition to management and marketing literature (Abdelkafi & Täuscher, 2016; Antikainen et al., 2017), numerous national and international studies have engaged in extensive discussions on the topic (Asgari & Asgari, 2021; Belussi et al., 2019; Dragomir & Dumitru, 2022; Parte & Alberca, 2024). Despite the increasing volume of CE research, there has been limited investigation into how firms implement these models (Aryee & Kanda, 2024; Chen et al., 2020; Foss & Saebi, 2017; Han et al., 2020), even though some have successfully introduced them to the market (Bonfanti et al., 2025). Overall, research at both national and international levels indicates that the concept of CE remains underexplored (Lüdeke-Freund et al., 2018; Toxopeus et al., 2021).

The primary motivation for this study is to address market failures and propose scalable circular solutions to the challenges associated with CE from a marketing perspective. Understanding CE through a marketing lens is crucial because it enables businesses and marketers to build long-term relationships with customers and enhance the value of their products and services. Furthermore, this perspective offers marketers valuable insights, helps them better understand their brands, and identifies opportunities for developing circular solutions. For businesses to successfully transition to a CE model, they must grasp the motivations driving this shift. Marketing efforts should extend beyond the point of sale to include post-sale services that help maintain products within a CE ecosystem, delivering circular solutions that maximize their value. The marketing perspective is vital because it influences the long-term aspirations, desires, and behaviors of consumers. For years, marketing has effectively driven demand for linear solutions while creatively advocating for circular alternatives. This presents a unique opportunity to decouple economic outcomes from resource consumption while still addressing consumer desires and needs. A marketing approach to CE can provide consumers with better choices for sustainable products and services, making them more attractive. By embracing a CE, marketing can achieve key objectives while aligning with the demands of a rapidly changing market.

Therefore, this study aims to answer three main research questions related to marketing in the context of a functional CE:

- RQ1:** How is the CE conceptualized from a marketing perspective?
- RQ2:** What are the main challenges affecting marketing transition to a CE?
- RQ3:** What role do marketing strategies play in facilitating the transition to a CE?

Contextual factors or paradoxes significantly influence behavior and can lead to changes in technical facilities aimed at reducing environmental impact and supporting CE business models. The CE transforms a linear system into a regenerative one, enhancing value chains, creating market opportunities, driving circular innovation, and improving economic and social values. Marketers play a crucial role in adopting the CE by understanding the needs of their target market, stimulating demand for innovative products, and shaping strategic priorities and consumption behaviors. They prioritize sustainability, resource recovery, and extending product life to enhance brand perception in alignment with CE practices. Strategic marketing skills are essential for promoting CE practices, and various tools have been developed to support CE business models and sustainability in marketing. Research indicates the potential for eco-innovation among companies (Koval et al., 2022; Vadakkepatt et al., 2021; Yang et al., 2017). The ongoing debate suggests that responsible consumption and purchasing can facilitate the transition to a CE, particularly from a marketing perspective (Ogiemwonyi, 2024). This involves using various tools to promote sustainable and innovative circular business models (Evans et al., 2014).

Previous studies have highlighted the significance of CE principles in marketing (Bag et al., 2020), green consumption (Ogiemwonyi, 2024), and business practices (Fatimah et al., 2020). Recent research has further expanded our understanding of circular behavior within CE frameworks (Islam et al., 2021). However, challenges persist for policymakers and business leaders as they work to redefine consumption within a CE ecosystem. Farrukh Shahzad et al. (2025) and Kurniawan et al. (2022) emphasize the importance of market sustainability within the context of the CE. While previous research has explored various aspects of the CE, including digitalization (Chauhan et al., 2022), business models (Ferasso et al., 2020), manufacturing (Moscati et al., 2023; Schögl et al., 2023), and innovation (Suchek et al., 2021), it often concentrates on specific topics, resulting in a limited understanding from a marketing perspective. This study aims to enhance the existing literature by identifying gaps and re-evaluating the role of the market within the CE and market systems (Chen et al., 2020).

This study makes several significant contributions to the field. **First**, it reveals how marketing is framed within the discourse of the CE and identifies key theoretical foundations, such as paradox theory and business model innovation. It also maps out important constructs and conceptual clusters in the existing literature. **Second**, the research assesses the tensions that arise, such as the balance between sustainability and profitability. It highlights existing knowledge gaps and proposes future research directions grounded in marketing scholarship.

**Third**, the study uncovers how marketing facilitates the adoption of CE at various levels: product, organizational, and systemic. It effectively links circular business models with sustainable business strategies in practice. Additionally, the study provides a visual and conceptual model (Fig. 7) to guide future empirical and theoretical work.

**Finally**, it warns policymakers against the assumption that the CE will automatically lead to success. These contributions offer valuable insights into emerging trends related to the CE from a marketing perspective. Unlike previous studies focusing primarily on CE within manufacturing, logistics, or operational efficiency (Geissdoerfer et al., 2020; Kirchherr et al., 2018), this paper advances the conversation by approaching CE from a strategic marketing perspective. Our findings reveal new thematic clusters related to consumer engagement, brand trust, and CE-focused promotion.

The paper is organized as follows: Section 2 discusses the research methods and procedures. Section 3 presents the results of the study. Section 4 provides a discussion of those results. Section 5 offers insights into the implications of the findings and highlights key contributions. Section 6 addresses the limitations of the study and suggests areas for future research. Finally, Section 7 summarizes the conclusions.

## 2. Methods

This study employed a systematic literature review (SLR) protocol, following the guidelines established by Easterby-Smith et al. (2015) and Tranfield et al. (2003). This protocol outlines a step-by-step approach that guarantees the replicability of the investigation into CE marketing research (Lim & Kumar, 2024). We conducted a cross-referenced snowball search to identify relevant studies, as shown in Fig. 1, which is adapted from Geissdoerfer et al. (2017). This procedure was implemented to ensure a thorough examination of the available research using a comprehensive database approach (Lim et al., 2024).

**In the first step:** We systematically searched the literature using a defined protocol. This began with a database search based on specific search strings that included terms such as “circular economy,” “business model,” “marketing for CE,” “sustainability,” and “challenges.” These terms were applied across Titles, Keywords, Abstracts, Topics, and Journal Categories in the Web of Science (WOS) and Scopus databases, two leading sources with extensive journal coverage and rigorous indexing standards (Mukherjee et al., 2022; Vieira & Gomes, 2009) (see Table 1). Advanced search techniques were utilized to ensure both breadth and precision, in line with best practices in quantitative bibliometric reviews aimed at understanding the literature structure within a specific field (Belussi et al., 2019). A bibliometric analysis using VOSviewer (version 1.6.20) allowed us to visually map and cluster related literature, which helped define our initial sample of relevant articles based on the relevance of their abstracts (Van Eck & Waltman, 2023; Zupic & Čater, 2015). This corresponds to the left-hand side of the protocol, where papers that did not align with the study’s focus were excluded, while those showing potential were included after abstract screening (Fig. 1). The literature review is illustrated in Fig. 2a and b.

**In the second step:** We conducted a cross-reference search in line with the central iterative process outlined in the protocol. This involved reviewing the reference sections of our initial papers to identify additional relevant studies. Each referenced article was evaluated for its contextual relevance, particularly regarding CE position from a marketing perspective. We assessed the abstracts of newly identified references to ensure alignment with our research questions, specifically focusing on “Business Models” in WOS and “Marketing” in Scopus. We iteratively expanded our sample until no new significant papers emerged, indicating saturation, as visualized in the “Iterate until new papers are not contributing” section of the protocol (Fig. 1). This step ensured that cross-disciplinary insights and underexplored perspectives on CE and marketing were thoroughly captured, thereby enhancing the conceptual depth of the review. Dominant keywords are depicted in Fig. 3a, b, and 3c.

**In the third step:** We manually screened the collected publications for relevance. Papers that were not directly aligned with CE and marketing were excluded. We retained 150 high-quality publications from WoS and Scopus related to CE and marketing, specifically prioritizing articles that met a minimum citation threshold and cited at least one other document in the dataset, consistent with bibliometric SLR standards (Marzi et al., 2024). The selected papers were then synthesized and integrated into the study, forming the core literature base for our analysis, as discussed in Section 3. The bibliographic coupling, visualized in Fig. 4, reveals seven distinct clusters that represent thematic streams in CE marketing research. This final phase corresponds to the bottom portion of the protocol, where the included papers are reviewed and analyzed for insight development.

By adhering to this structured and iterative protocol, our study ensures methodological transparency and contributes a theoretically grounded and empirically informed overview of the marketing role in advancing the CE.

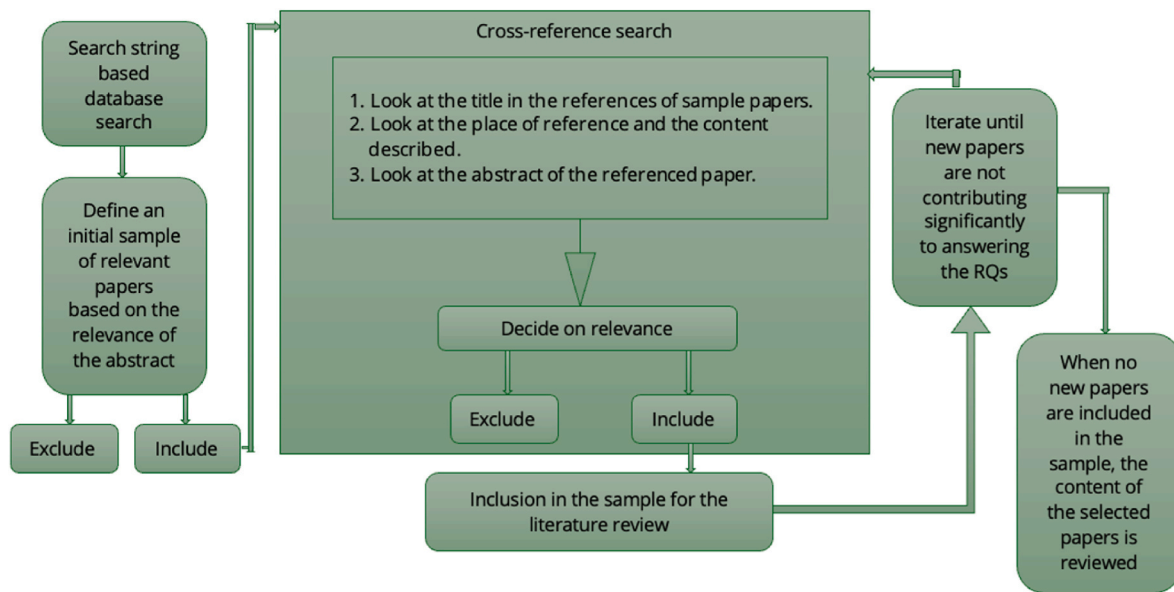


Fig. 1. Systematic literature review protocol (adapted from Geissdoerfer et al., 2017).

**Table 1**  
Literature strings protocol.

Literature search strings (Search term)	Search description (Information)	No. of non-exclusive results found in		
		WoS	Scopus	Latest update
1. "circular economy"	Title   Article Title	400	441	3/05/2025
2. "circular economy" business model* OR "literature"	Title   Article Title, Abstract, Keywords, Journal Categories	180	251	3/05/2025
3. "marketing" and circular economy" OR "sustainability", "systematic review"	Title   Article Title, Abstract, Keywords, Journal Categories	55	50	3/05/2025
4. "circular economy position" AND "business"	Title   Article Title, Abstract, Keywords, Journal Categories	101	141	3/05/2025
5. "circular economy" AND ("marketing strategy" OR sustainability")	Title   Article Title, Abstract, Keywords, Journal Categories	44	129	3/05/2025
6. "circular economy position" AND "sustainable business"	Title   Article Title, Abstract, Keywords, Journal Categories	35	90	3/05/2025
7. "circular economy barriers" OR "challenges"	Title   Article Title, Abstract, Keywords, Journal Categories	20	15	3/05/2025

### 3. Result

#### 3.1. Bibliometric analysis

The bibliometric findings were analyzed using VOSviewer software, focusing on co-authorship analysis with at least one document per author to establish co-authorship links. Fig. 2a presents the network visualization from this analysis, illustrating a dispersed network with 73 clusters. This suggests that individual authors are investigating the topic independently, although there are connections among 257 documents regarding co-authorship, underscoring the originality of the study.

Additionally, a citation analysis was conducted to examine the citation links among authors. The network visualization in Fig. 2b shows a scattered configuration with 44 clusters, indicating that the authors in the dataset did not cite one another frequently. Only clusters 1 to 14

contain more than one author, with the smallest cluster comprising three authors. Clusters 15 to 44 each include just one author. On average, 50 % of the papers in clusters 1 to 14 were published between 2012 and 2023, while those in clusters 15 to 44 were published from 1990 to 2023. This information was gathered on May 1, 2024. These findings were somewhat expected, as all contributions are relatively original, and the research area is still in its early stages.

The network visualization in Fig. 2c illustrates the co-authorship of research on the CE among various nations. It highlights countries that have produced at least three publications and established connections with one another. The links between these countries signify collaborative authorship, publication volume, and the presence of six distinct clusters. Cluster 1 comprises the Netherlands, Italy, Canada, and Germany, while Cluster 5 includes the United Kingdom, the United States, and Austria. Countries in clusters 1 and 5 are making notable advancements in adopting the circular model, leading efforts in resource optimization, waste reduction, and promoting sustainable practices in support of a functional CE.

The initial clusters reveal strong collaboration among researchers from China, Malaysia, Greece, South Korea, and Denmark, which have robust connections with Indonesia and Serbia. The Finland cluster shows significant collaboration with researchers from Sweden, Norway, New Zealand, South Africa, and Colombia. Furthermore, Cluster 2, represented by countries such as France, Macao SAR China, Romania, Thailand, Australia, India, and Fiji, demonstrates a strong connection to the dominant countries in Cluster 1. This interdependent alliance fosters efficiency and comprehensive resource management in the transition toward a CE.

The visualizations of the network, overlay, and density presented in Fig. 3a, b, and 3c illustrate that this study identified seven clusters of keywords, each appearing at least three times out of a total of 84 keywords. This indicates a significant relationship among these keywords.

In the network visualization shown in Fig. 3a, each keyword is connected to key concepts such as "circular economy," "marketing," "business model," "business," and "sustainability." The blue clusters explore the primary themes of the study, including business models, marketing, sustainable business practices, and conditions for sustainability. The red cluster focuses on topics such as ecology, reuse, sustainable development, environmental economics, market economy, and economic growth, especially in the context of transitioning to a CE. The green cluster examines green consumption and the resources needed for



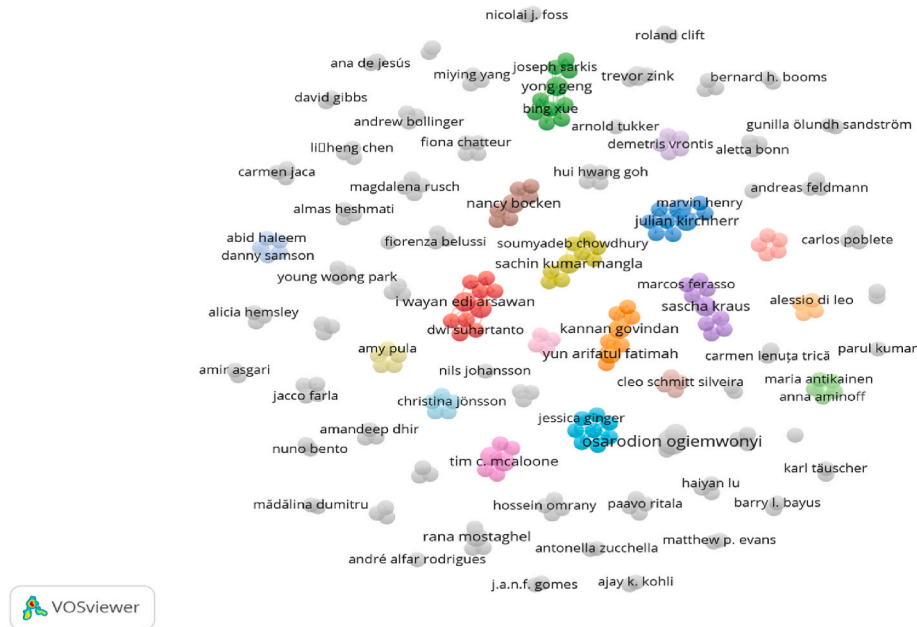


Fig. 2a. Network visualization of co-authorship (min no of documents of an author - 1).

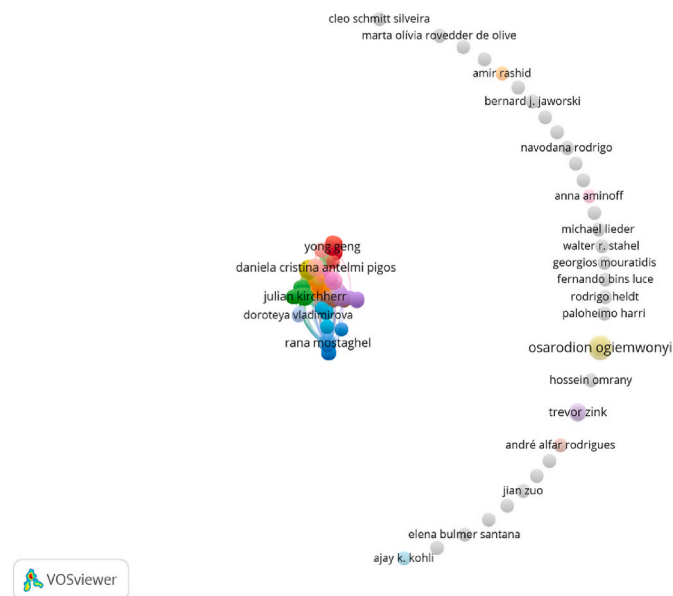


Fig. 2b. Network visualization of authors' citation (min no of documents of an author - 1).

promoting environmental sustainability. The orange cluster is linked to “knowledge management” and “philosophy,” which connects to marketing and business models. These keywords highlight the importance of sharing and utilizing information related to the CE within companies. Finally, the purple cluster emphasizes resource efficiency, value, and product design in the transition towards a CE.

Fig. 3b presents an overlay visualization of keyword trends over the years, indicating that the most discussed topics from 2014 to 2022 were the circular economy, marketing, business, business models, and sustainability. The lack of connections between some keywords suggests that these could emerge as new research topics in the future. Notably, “circular economy” serves as the central keyword, linking various other keywords. This illustrates its examination across diverse contexts, such as consumer behavior, supply chain management, Industry 4.0, and

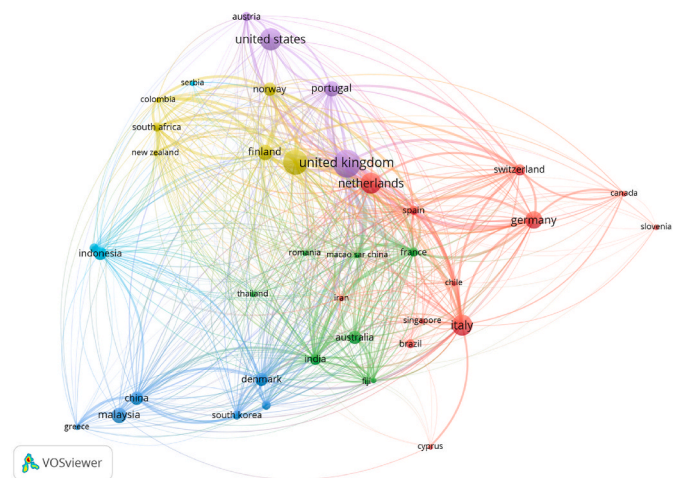


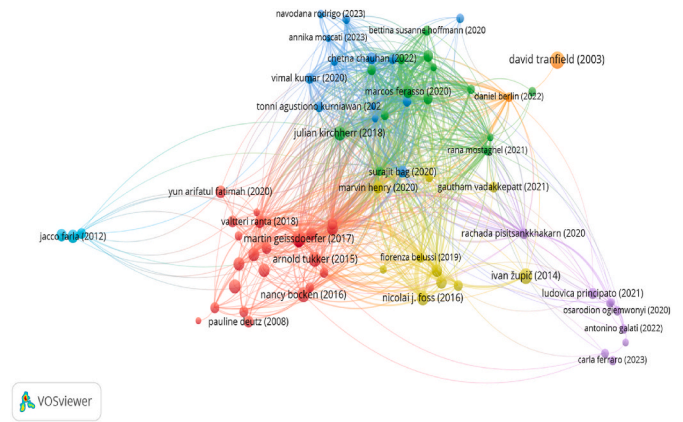
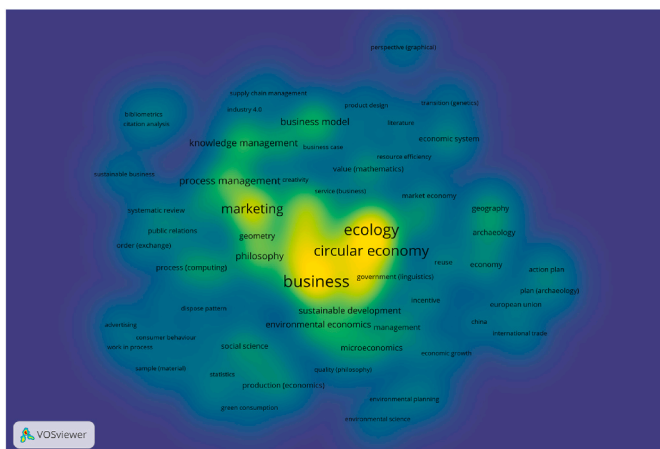
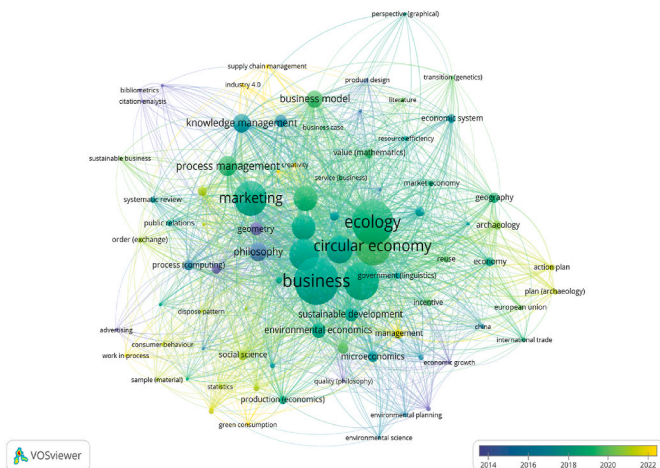
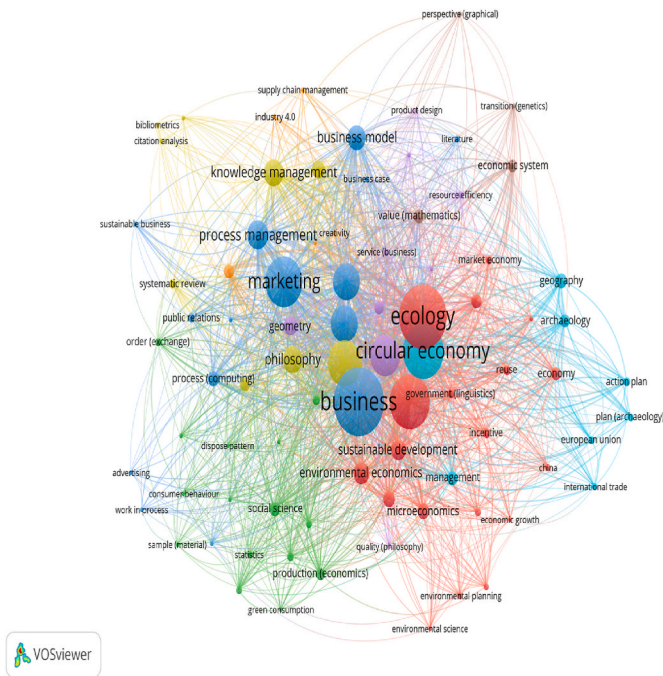
Fig. 2c. Network visualization of the cooperative network on the CE among countries.

economic growth, along with related concepts like industrial ecology, sustainable development, and regional development.

Similarly, the map visualization in Fig. 3c provides valuable insights into the research interests of scholars across various fields. The map reveals that many researchers are focusing on four key areas: the circular economy, industrial ecology, marketing, and business models. Additionally, numerous scholars are exploring topics such as sustainable development, market economy, and environmental economics. This information is beneficial for those seeking to understand current trends and priorities in academic research related to the circular economy and social sustainability.

The results of the cluster mapping for network visualization were analyzed, focusing on clusters that contained at least one citation. Seven clusters were identified, as shown in Fig. 4.

- Cluster 1: (marked in red) consists of 23 documents that highlight the importance of industrial sustainable circular economies in waste management. This group examines the institutional drivers behind circular economies through regional comparisons to address



**Fig. 4.** Results of the network visualization map using bibliographic coupling.

challenges related to circularity. Notable studies in this cluster include those conducted by [Bocken et al. \(2016\)](#), [Fatimah et al. \(2020\)](#), [Geissdoerfer et al. \(2017\)](#), [Ranta et al. \(2018\)](#), and [Siderius and Zink \(2023\)](#).

- Cluster 2: (highlighted in green) comprises 14 documents that examine consumer distribution and recycling, as well as the organizational impacts of transitioning to a CE business model that promotes environmental sustainability. Key studies in this cluster include research conducted by [Ferasso et al. \(2020\)](#), [Hoffmann et al. \(2020\)](#), [Kirchherr et al. \(2018\)](#), and [Mostaghel and Chirumalla \(2021\)](#).
- Cluster 3: (marked in sky blue) includes 13 documents that emphasize the concept of product life extension through the use of clean technologies across various industries, such as manufacturing and construction, to establish a CE model. Notable studies within this cluster feature contributions from [Moscati et al. \(2023\)](#) and [Rodrigo et al. \(2024\)](#).
- Cluster 4: (highlighted in yellow) includes 10 documents that investigate new business model of circular startups, marketing innovation, and the role of consumers in sustainable retailing. Notable studies in this cluster include those by [Foss and Saebi \(2017\)](#), [Henry et al. \(2020\)](#), and [Vadakepatt et al. \(2021\)](#).
- Cluster 5: (marked in purple) consists of 10 documents that explore topics such as purchasing, purchase intention, consumer behavior, green marketing, manufacturing, and sustainable consumption. Key studies within this cluster were conducted by [Ogiemwonyi \(2024\)](#), [Ogiemwonyi and Harun \(2020\)](#), [Pisitsankhakarn and Vassana-dumrongdee \(2020\)](#), and [Principato et al. \(2021\)](#). Furthermore, this cluster emphasizes social equity and promotes diversity within the CE when making marketing decisions ([Ferraro et al., 2023](#)).
- Cluster 6: (marked in cyan) includes 3 documents that focus on the evolution of the sustainability transition in the market. A significant study in this cluster is by [Farla et al. \(2012\)](#).
- Cluster 7: (highlighted in brown) consists of 2 documents that examine CE collections that create and share resources. These documents provide a broad perspective to consumers through various resource loops. [Berlin et al. \(2022\)](#) discuss the impact of these loops within a circular supply chain.

In conclusion, successfully implementing a CE requires increased consumer awareness, collaboration, and responsibility. This transition relies on the involvement of all stakeholders in society, as demonstrated by several clusters in Fig. 4.

### 3.1.1. Journal sources citation

A citation link analysis was conducted to visually map the relationships among 43 sources, including various journals. The findings are illustrated in the network visualization shown in Fig. 5, which revealed



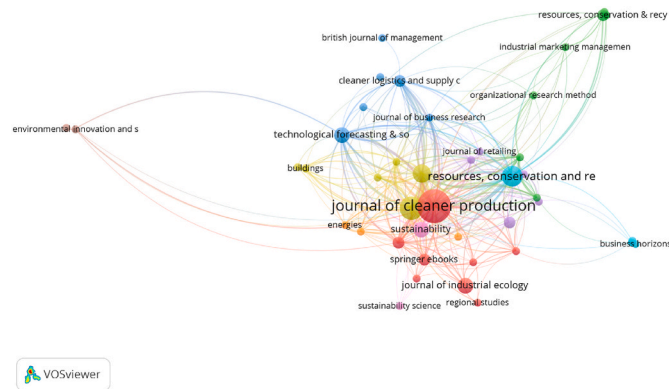


Fig. 5. Network visualization of source citation (min no of documents of a source - 1).

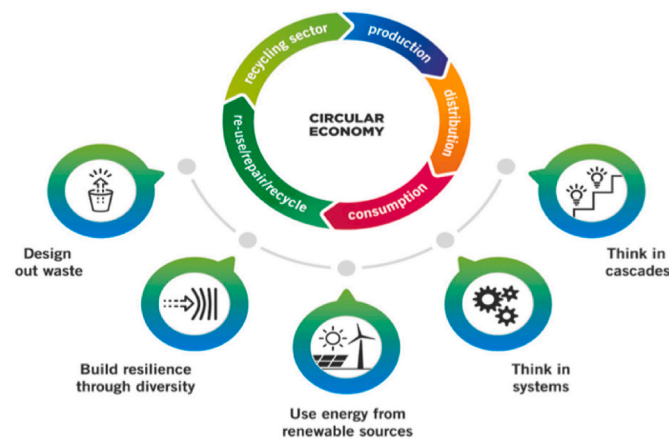


Fig. 6. The Key tenets of a CE. Based on Adamidis et al. (2023).

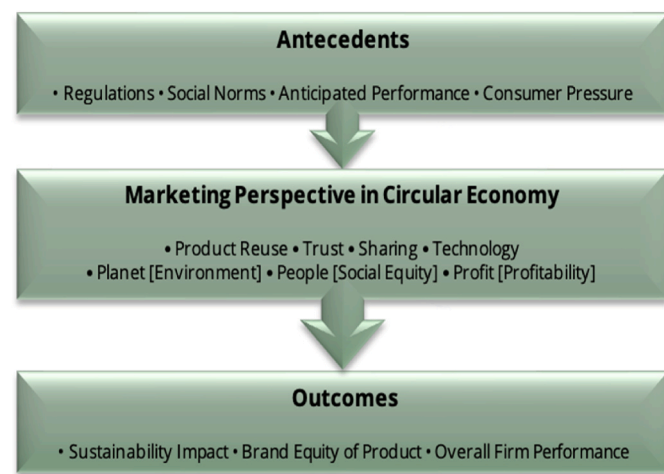


Fig. 7. Structure of CE from a marketing perspective.

very loose citation links among the sources, similar to the results presented in Fig. 2a and b. The 43 sources were organized into nine clusters, with seven of these clusters containing three or more sources (clusters 1–7), while the remaining two (clusters 8 and 9) each consisted of two sources. The study highlighted that the Journal of Cleaner Production (JCP), Resources, Conservation and Recycling (RCR), and Technological Forecasting and Social Change (TFSC) had the highest citation links or total link strength, making them the most prominent sources.

### 3.1.2. Theories

In this study, numerous documents were analyzed, leading to the extraction of several theories, models, and frameworks. The most frequently discussed theories include:

- **Circular economy theory:** This theory aims to establish an economic system that is both restorative and regenerative. It emphasizes the use of renewable resources, minimizes environmental waste and pollution, and seeks to extend the lifespan of products and materials (Vidal-Ayuso et al., 2023). Related concepts include cradle-to-cradle design and industrial symbiosis (McDonough & Braungart, 2010). In practice, this theory has proven to be more efficient than eco-effectiveness and can influence consumer spending habits. However, some businesses find it challenging to implement these concepts effectively due to a lack of detailed guidance (Van Dijk et al., 2014).
- **Circular business model theory:** This theory defines a set of principles and practices that guide the development of business models with a focus on the principles of a CE. It encourages customers to purchase from responsible businesses, enhances stability, maximizes resource value, reduces waste, and promotes sustainability (Geissdoerfer et al., 2020). Nevertheless, the circular business model faces several challenges, including technical limitations, inadequate recycling or material reuse infrastructure, limited availability of circular solutions, institutional barriers, and market challenges (see Table 2).
- **Material flow analysis theory:** This theory involves the systematic analysis and tracking of the physical movement and transformation of materials from their source through various uses to the recycling process (Gao et al., 2020). Material flow analysis identifies inefficiencies, such as material waste, and highlights opportunities for reuse, thereby supporting sustainability goals. However, one disadvantage of this theory is the quality of the data; it cannot be effectively utilized in urban areas due to limited availability of physical data, especially regarding material flow across city boundaries (Wang et al., 2023).
- **Recycling method theory:** This theory encompasses the technical processes involved in recycling products and materials, along with the behaviors that influence these practices. It emphasizes the importance of social, environmental, and economic factors (Vidal-Ayuso et al., 2023). While this theory offers various benefits, including environmental protection, economic advantages, and energy savings, it also has notable disadvantages. These include potential environmental harm, inefficient energy utilization, and concerns regarding the quality of materials.
- **Life cycle assessment (LCA):** This is a structured and systematic method for evaluating the environmental impact of products and services throughout their entire lifecycle (Vidal-Ayuso et al., 2023). One major advantage of LCA is that it provides a comprehensive view of the resources used in the production and consumption associated with products and services. It also helps inform policies and business strategies aimed at environmental conservation. However, a significant drawback is that LCA can be resource-intensive and may not apply to every product throughout its lifecycle.
- **Product theories:** This theory encompasses several key concepts, including the product life extension theory, which emphasizes maximizing the usefulness of products over time; product design theory, which focuses on enhancing environmental performance and societal well-being through effective product design; and product service system theory, which highlights a shift towards service-based business models where products are offered as services (Vidal-Ayuso et al., 2023). Product theories provide numerous advantages for businesses with their solution-oriented approach, enabling differentiation from competitors by producing high-quality offerings while also mitigating risks. However, concentrating solely on niche products may limit market reach. While these theories have the potential

**Table 2**

Overview of market challenges in a functional circular economy.

Challenge	Consequences	Example	Study
Cultural challenges - There is a shortage of knowledge and eagerness to participate in the CE.	1. Company culture	<ul style="list-style-type: none"> <li>There is often a hesitance to change within a company's culture, which can lead to a lack of urgency in adopting CE practices.</li> </ul>	Pheifer (2017) De Pascale et al. (2023)
	2. Limited collaboration	<ul style="list-style-type: none"> <li>Many companies are not willing to collaborate with each other in the value chain, making it difficult to implement CE practices.</li> </ul>	Mont et al. (2017) De Pascale et al. (2023)
	3. Linear economy	<ul style="list-style-type: none"> <li>Many companies continue to operate within a linear economy, which is not conducive to CE practices.</li> </ul>	Pheifer (2017)
	4. Lack of consumer awareness and interest	<ul style="list-style-type: none"> <li>Consumers may not be aware of the benefits of CE practices, which can result in a lack of demand for products made using these practices.</li> </ul>	Ranta et al. (2018) De Pascale et al. (2023) Kirchherr et al. (2018)
Policy regulatory challenges - The lack of regulations that support the shift towards a CE is a pressing issue.	1. Limited circular procurement	<ul style="list-style-type: none"> <li>The procurement process often focuses only on cost and fails to consider other factors, which is a hurdle in promoting CE practices.</li> </ul>	Kirchherr et al. (2018) Feldman et al. (2024)
	2. Lacking global consensus	<ul style="list-style-type: none"> <li>The shift towards a CE needs a high level of consensus among different countries, which is difficult to achieve due to varying priorities and interests.</li> </ul>	Kirchherr et al. (2018) Feldman et al. (2024)
	3. Obstructing laws and regulations	<ul style="list-style-type: none"> <li>The current government legislation and rulings can obstruct the progress towards a CE.</li> </ul>	Pheifer (2017) De Pascale et al. (2023)
Marketing challenges - One of the challenges for CE business models is their economic viability	1. Prices of several low virgin materials	<ul style="list-style-type: none"> <li>Prices are often lower than recycled materials, making it difficult for circular</li> </ul>	Mont et al. (2017) De Pascale et al. (2023)

**Table 2 (continued)**

Challenge	Consequences	Example	Study
Technological - The implementation of a CE is being hindered by technological limitations	2. High upfront investment costs	<ul style="list-style-type: none"> <li>businesses to compete.</li> <li>High costs of investment, which can pose a significant barrier to entry for businesses seeking to transition to circular models.</li> </ul>	Mont et al. (2017) De Pascale et al. (2023)
	3. The lack of standardization	<ul style="list-style-type: none"> <li>A lack of standards across industries and regions, can hinder the development and adoption of circular practices.</li> </ul>	Kirchherr et al. (2018)
	4. There are only a few funding options available for companies that operate with circular business models.	<ul style="list-style-type: none"> <li>Lack of finance can make it challenging for companies to secure the necessary funding for growth and expansion.</li> </ul>	Pheifer (2017) De Pascale et al. (2023)
	1. The inability to produce high-quality remanufactured products due to unproven technologies.	<ul style="list-style-type: none"> <li>Limited availability and quality of recycled materials also poses a challenge.</li> </ul>	Kok et al. (2013) De Pascale et al. (2023)
	2. There are only a few demonstration projects on a large scale	<ul style="list-style-type: none"> <li>New business models are not being widely adopted.</li> </ul>	Kok et al. (2013) Feldman et al. (2024)
	3. Insufficient data available to assess the CE impacts.	<ul style="list-style-type: none"> <li>Insufficient data.</li> </ul>	Pheifer (2017) Feldman et al. (2024) Mont et al. (2017)
	4. Poor circular product design	<ul style="list-style-type: none"> <li>The design of many products is not suitable for implementing circular business models.</li> </ul>	Mont et al. (2017)
	5. Lack of circular product integration into production processes	<ul style="list-style-type: none"> <li>The integration of circular product design into production processes is lacking.</li> </ul>	Ritzén and Sandström (2017) De Pascale et al. (2023)

to increase revenue and market share, developing and launching new products can be costly and carry the risk of market rejection.

- The theory of planned behavior: This theory explains and predicts individual behavior, attitudes, perceptions, and the capability to perform specific actions that promote environmentally friendly products or services, contributing to the goals of CE (Ajzen, 1991). It effectively illustrates behavioral patterns and is applicable across diverse social and cultural contexts (Ajzen, 2020). Nevertheless, it has limitations in predictive validity, as it may overlook subconscious factors and be affected by methodological issues related to social desirability (Hagger & Hamilton, 2024).
- Consumer behavior Theories: These theories explore the psychological processes and mechanisms that influence how individuals or



society feel, think, and act when selecting, using, and disposing of products and services to meet their needs (Vidal-Ayuso et al., 2023). They aid marketers in understanding the factors that influence consumer decisions and predicting when and how purchases will occur, ultimately leading to better products and services (Yuan, 2023). However, these theories can lack flexibility and may not adequately consider individual consumer differences. As consumer behavior evolves, these models may become outdated and require continuous adaptation (Ogiemwonyi, 2024).

- **Servitization theory:** This business strategy emphasizes providing operational and maintenance services throughout a product's life-cycle to create value (Vandermerwe & Rada, 1988). Servitization promotes sustainability, can be more environmentally friendly, leads to higher customer satisfaction, and helps businesses differentiate themselves from competitors in the marketplace. However, this theory may resist change, and its complexity necessitates careful planning and execution. Additionally, customers often hold high expectations regarding the products and services offered (Vandermerwe & Rada, 1988).

While many theories were identified during the literature review, this paper specifically focuses on paradox theory. This theory offers a valuable framework for understanding the knowledge interests of CE positions from a marketing perspective. According to Mignacca et al. (2025), various forms of theorizing can be employed to develop specific CE practices or theories that encompass theoretical contributions, knowledge claims, and interpretations.

### 3.1.3. Paradox theory

This study responds to the call by Van der Byl and Slawinski (2015) for further exploration of paradox theory in the context of circularity and sustainability. It also addresses the request from Dzheniz et al. (2023) to move beyond the traditional business case assumption when examining the CE by investigating its market status. Paradox theory explains how contradictory yet interrelated elements can coexist and appear rational within a business environment over time (Smith & Lewis, 2011). This theory emphasizes the complexity of business operations, highlighting the simultaneous need for both efficiency and marketing innovation while also addressing sustainability challenges and meeting diverse stakeholder demands (Farrukh & Sajjad, 2024). Research utilizing paradox theory is increasingly prominent in the literature on sustainable business models and the CE (De Angelis, 2021). For instance, Van Bommel (2018) employed paradox theory to analyze an organization's transition to sustainable business models, exploring how management practices and paradoxical thinking can drive business model innovation for sustainability. Daddi et al. (2019) investigated performing and organizing paradoxes within the CE through several in-depth case studies. One example involves how enhancing environmental sustainability by using secondary raw materials can compromise quality perceptions in the high-end luxury leather industry, exemplifying the performing paradox. Additionally, the tension between creativity and efficiency represents the organizing paradox (De Angelis, 2021; Tosi et al., 2024).

A paradox emerges when considering the competing goals of social, environmental, and economic aspects within the CE's sustainability view of marketing (Schad et al., 2016). This paradox endures over time, allowing it to surpass the instrumental lens of circular sustainability (Carmin & De Marchi, 2023; Johnsen, 2021). Despite the limited literature on paradox theory within the contexts of circularity, sustainability, and marketing—largely due to the ambiguous nature of the concept of paradox (Carmin & De Marchi, 2023)—recent studies have begun to integrate paradox theory into their exploration of the CE and sustainable business models (Daddi et al., 2019; De Angelis, 2021; Farrukh & Sajjad, 2024). A paradox can be defined as two or more alternatives reflecting divergent phenomena, making it challenging to compare emerging findings and leaving the implications of relevant

studies unclear. Current applications have predominantly concentrated on individual-level analysis without considering a systems perspective. However, to effectively address issues such as the conflict between environmental, social, and economic demands, a multilayered approach is necessary to improve natural conditions (Bansal et al., 2020; Grewatsch et al., 2021).

The concept of paradox theory is valuable for clarifying the complexities of the business model for CE, particularly from a marketing perspective. It explains how specific CE practices can be integrated into marketing strategies. The CE, much like paradox theory, relies on systemic and complex thinking (De Angelis, 2021). This approach aims to decouple economic growth from the further depletion of scarce natural resources (Lacy et al., 2019), suggesting that business model innovation for circularity may create various organizational paradoxes (De Angelis, 2021). For example, the business typology proposed by Smith and Lewis (2011) aligns with CE principles. Any start-up or established business aiming to adopt a CE-centered strategy must first understand its core principles. During the initial exploratory phase, managers are likely to face tension paradoxes. As highlighted in Section 1, transitioning to a CE is challenging, and this stage may conflict with established aspects of successful traditional linear models (De Angelis, 2021). Therefore, it is essential to employ a systematic strategy to address these paradoxical tensions by simultaneously meeting multiple demands (Farrukh & Sajjad, 2024). This paper systematically utilizes De Angelis's (2021) and Smith and Lewis's (2011) typology of organizational paradoxes to provide a more comprehensive understanding of paradoxes in the context of CE from a marketing perspective.

Paradox theory is useful in marketing because it helps balance conflicting demands for sustainability, profitability, and consumer expectations. Marketers must promote long-term value through reuse and repair while also attracting attention to short-term trends and innovations. This perspective allows us to view CE as a strategic balancing act rather than a linear progression.

### 3.2. Circular economy business model

The CE business model focuses on extending the use of materials and resources. This approach requires improvements in processes, the development of new business models, and the redesign of products and services. It considers various factors, including social, financial, natural, built environment, and human aspects, to create social value while adhering to a waste hierarchy. This model allows organizations to articulate their strategies, deliver services effectively, and capture value for stakeholders while minimizing environmental and social costs. In developing nations, the CE model can significantly contribute to gross domestic product from a marketing perspective.

From this viewpoint, the CE can generate billions in revenue at both micro and macroeconomic levels (Fatimah & Biswas, 2017). Several studies have explored the integration of CE principles in marketing to promote internet technology, sustainable production, and consumption as a pathway to economic growth (Adamidis et al., 2023; Berlin et al., 2022). Recent research has examined the implementation of CE business models from various angles (Husain et al., 2021) and assessed the effectiveness of innovative CE practices within the modern cloth diaper industry (Hoffmann et al., 2020). Additionally, a study by Asgari and Asgari (2021) analyzed how CE principles can transform consumption patterns into a circular ecosystem, identifying both barriers and incentives. These studies suggest that integrating CE principles can lead to more sustainable business models and enhance demand for value propositions.

Several themes in the agri-food industry have been overlooked by researchers. Some studies have focused specifically on topics such as choice behavior experiments (Lieder et al., 2020), firm finance (Toxopeus et al., 2021), and entrepreneurial identity (Poblete et al., 2021). In contrast, other scholars have explored different areas, including economies (Klein et al., 2022), sustainability (Patil et al.,

2021), servitization (Han et al., 2020), and manufacturing or resource consumption (Pieroni et al., 2021). There is a pressing need to explore the CE from a marketing perspective in the global market, particularly regarding efficient consumption and resource utilization. The CE is a multifaceted concept that can be approached from various perspectives. The principles of the CE business model aim to create a system where materials are never wasted, and the environment is restored, thereby driving demand for circular value and enhancing overall performance, as illustrated in Fig. 6.

### 3.3. Transforming the circular economy from a marketing perspective

The marketing perspective is essential as it links businesses and consumers, shaping perceptions, encouraging behaviors, and creating a value proposition that aligns with CE principles. Effective marketing strategies influence how circular practices are conveyed, embraced, and measured, which is especially vital for engaging consumers on a large scale. Companies are increasingly adopting circular business models for various reasons. According to North (1990), human interactions are influenced by both formal forces, such as laws and regulations, and informal forces, like social norms and conventions. In developed countries, governments and marketing stakeholders are implementing regulations that support the principles of a CE, promoting environmental protection and legislative oversight of businesses (Pamulaya, 2022). Educating individuals at all levels is crucial for facilitating the transition to a CE. Consumer involvement is essential in this process, as they need to embrace product-service systems to change their behaviors (Tukker, 2015). The marketing perspective plays a significant role in shaping culture by creating markets through the four Ps of the marketing mix: price, place, promotion, and product (Kotler, 1996). This approach helps companies generate interest, action, and desire for their offerings (Kohli & Jaworski, 1990).

Moreover, marketing must contribute to the transition from a linear model to a CE to enhance sustainability and mitigate environmental impacts, especially in emerging global nations. Given the growing environmental challenges, it is essential to rethink consumption practices and prioritize a CE. This concept is becoming increasingly popular among consumers, who recognize the need for changes in how products are produced and consumed. The transformation to a CE is a market approach that considers the entire product lifecycle within the frameworks of corporate social responsibility (CSR) and marketing. It aims for systematic change rather than isolated initiatives to achieve all pillars of sustainability. Essentially, the CE promotes the production of durable and sustainable products that are recyclable and reusable, allowing for continuous use. This transformation requires innovative ideas and practices to replace unsustainable methods and encourage responsible consumption. In marketing, the CE must evaluate how products and services deliver value to customers, society, and businesses while maintaining optimal business performance. The marketing concept of CE focuses on creating products that eliminate waste and circulate within a regenerative ecosystem. This means products are designed to provide lasting value, with components that can be repaired or recycled.

The shift towards new production methods requires marketers to fundamentally rethink their approach to developing consumer goods and services. If the CE gains traction, it could enhance market systems and help mitigate rising global temperatures. However, the global adoption of circularity remains slow, with fewer than 9 % of economic systems currently embracing it (Hattar, 2023). Despite this slow progress, there are numerous business advantages and market benefits to adopting CE principles, such as increased revenue and improved reputation, alongside the sustainability benefits. Marketing is crucial in advancing the CE. By embracing CE principles, businesses can create a more profitable and resilient marketing system that supports a sustainable future. Marketing plays a vital role in accelerating the implementation of a functional CE, which can lead to more resilient and scalable circular solutions. This fosters a responsible future for

companies that adopt these practices. By promoting products aligned with CE principles, such as reducing waste and minimizing material usage, marketing effectively positions these products while demonstrating how they reflect the values of CE. For businesses and marketers to succeed, it is essential to raise awareness and encourage consumer adoption of the CE business model, contributing to the establishment of new social norms. Several key factors can drive the transformation towards a CE for all stakeholders and the environment, including regulations, social norms, and performance metrics. Additionally, important elements such as consumer pressure, product reuse, trust, sharing, and technology are also examined in detail.

#### 3.3.1. Regulations

Regulations play a crucial role in facilitating the transition to a CE by establishing a framework that incentivizes businesses to design products for longevity, recycling, and reuse. This includes enforcing waste management practices, setting guidelines for the use of repurposed materials, and ensuring that producers are accountable for the end-of-life management of their products through mechanisms like extended producer responsibility. Such initiatives encourage the market to embrace circularity, ensuring that materials are promptly kept in use. The European Commission introduced the Circular Economy Action Plan in 2015 to promote the transition of the European Union toward a CE on a global scale (European Commission, 2023). This plan involves various stakeholders, including industry leaders, government officials, and marketing experts. National and regional governments have also launched several initiatives to support the CE, and members of the European Commission have reaffirmed their commitment to this plan. According to the European Commission (2023), international trade is essential for European countries. To develop a functional CE, all stakeholders and businesses within EU member states must take proactive steps by implementing various laws and regulations. Additionally, investors are increasingly demanding that companies adopt circular practices to meet current societal needs. Representatives from banks have noted that measurable goals are being established for companies to facilitate their progress in the CE. They emphasized the necessity for stakeholders to trust their judgment when investing in suitable companies (European Commission, 2023).

#### 3.3.2. Social norms

Social norms significantly shape consumer engagement with CE practices by influencing behaviors related to recycling, reusing, and restoring products. They help foster a societal mindset that views CE practices as the standard, encouraging others to adopt them as well. Effective communication strategies can emphasize the acceptance and prevalence of circular activities among peers. Research indicates that both manufacturers and retail businesses involved in Business-to-Business (B2B) transactions, as well as those engaged in Business-to-Consumer (B2C) sales, have transitioned to circular business models. This shift is driven by a commitment to sustainability. Studies conducted by Mostaghel and Chirumalla (2021) show that these companies' values align with the principles of environmental sustainability. Additionally, a global study on the CE revealed that over 25 % of individuals make investment decisions based on their positive beliefs in circular practices (Statista, 2019). Furthermore, social norms can be effectively combined with strategies such as nudges to promote more circular behaviors among consumers.

#### 3.3.3. Performance

The performance of companies significantly influences their ability to promote circularity, as it provides the financial resources and motivation needed to invest in practices like product reuse, recycling, and designing for durability. These efforts enhance resource efficiency and reduce environmental impact, indicating that a company's success can facilitate its transition to a more circular model. Many businesses are now adopting circular business models to improve their overall

performance, branding, and sustainability. According to Mostaghel et al. (2023), economic incentives are the primary driving force behind this adoption. The circular business model is expected to deliver sustainable solutions for both sellers and buyers in the long run. Additionally, Smith (2022a) estimates that global revenue generated from the CE is projected to reach \$713 billion by 2026, nearly doubling the \$339 billion generated in 2022. This growth highlights the potential for further development within the CE and its evolution from a marketing standpoint.

### 3.3.4. Pressure

Consumer pressure plays a crucial role in the transition toward a CE. According to Smith (2022b), many consumers are starting to adopt CE practices, such as responsible consumption. This includes purchasing eco-friendly products, buying second-hand items, and extending the lifespan of their possessions. Additionally, some consumers support initiatives that promote proper product disposal by opting to rent rather than own items. However, it is important to recognize that not all consumers are familiar with the concept of the circular economy; Smith (2022b) reports that 7 % of consumers are unaware of this topic. Therefore, informed consumers are essential for the success of the transition to a CE. Companies that are making this shift must respond to consumer demand for eco-friendly products (Mostaghel et al., 2023). To address this growing demand, businesses are increasingly looking for suppliers that can offer recycled materials for their products (Ogiemwonyi et al., 2020). Our emphasis on consumer engagement and demand is in line with the views of Urbee et al. (2025), who highlight that consumer involvement in climate-related initiatives is not passive; rather, it is a co-creative process.

### 3.3.5. Product reuse

From a marketing and business perspective, the CE can promote product reuse and recycling in both developed and developing nations. For example, Patagonia, a well-known consumer brand, advocates for product reuse through its Worn Wear initiatives. These initiatives aim to reduce the environmental impact of the company's products by offering repair services through their reuse program, provided by trained technicians. Patagonia's commitment to recycling and reuse enhances the perception of CE from a marketing standpoint (Hattar, 2023). By highlighting the circular features of their products, companies can effectively differentiate sustainable offerings for consumers. A notable example is the Keysight Trade Refresh program, which incentivizes consumers to return used products by offering attractive credits. This marketing initiative not only reduces landfill waste but also decreases the demand for new products. Impressively, the program has achieved over 80 % of products returned, with 20 % being recycled, showcasing a strong commitment to sustainable marketing from a CE perspective, thereby aiding reuse and repurposing (Hattar, 2023).

### 3.3.6. Transparency

Trust and transparency are crucial for promoting a CE, as they enable consumers and businesses to engage confidently in the reuse and recycling of products. This fosters a reliable supply chain, allowing for the tracking of the provenance and quality of recycled materials throughout the product lifecycle, ultimately contributing to a more sustainable system. To effectively market the concept of CE, marketing teams must identify products that align with this approach and determine how they can support it. Companies should build trust with their audience by being transparent and disclosing essential information about their products, such as their carbon footprint and features that enhance reusability or recyclability. Sustainable marketing should focus on promoting products that adhere to a circular lifecycle, considering aspects such as design, production, usage, sourcing, and end-of-life management (Ogiemwonyi et al., 2019). By emphasizing these lifecycle elements, green marketing serves as a vital tool for bringing products to market and structuring their entire lifecycle from inception to

retirement, thereby effectively promoting the CE. Furthermore, open communication and trust among stakeholders in the CE, including consumers and manufacturers, facilitate collaboration and the development of efficient circular solutions. By being transparent about their circular practices, companies can avoid accusations of greenwashing and strengthen their reputation for sustainability.

### 3.3.7. Sharing

From a marketing perspective, a CE involves practices such as sharing, leasing, and renting, which are essential for promoting circularity. Sharing encourages the reuse of products and assets, reducing the need to produce new goods and minimizing waste. This principle is fundamental to the CE model. The sharing economy allows for the allocation of resources among various groups within the marketing and business environment instead of concentrating them with a single individual. This maximizes resource utilization (Hattar, 2023). Furthermore, sharing creates new revenue streams, including cloud solutions, coworking spaces, reselling, trading, crowdfunding, and peer-to-peer lending. This economic model not only generates revenue for the CE but also ensures effective use of materials and resources, aligning with sustainable marketing practices. Additionally, sharing provides several benefits for urban residents. It enables the effective utilization of public assets that might otherwise be underused or overused while also creating new market opportunities and revenue streams. Ultimately, sharing helps strengthen the connection between rethinking consumption and the principles of the CE from a marketing perspective.

### 3.3.8. Technology

Technology plays a vital role in promoting a CE by minimizing waste, optimizing production processes, and enhancing the supply chain. It empowers consumers to make informed choices and access important information about product recyclability, allowing them to align their purchasing decisions with CE principles. Digital accelerator initiatives, which assist companies in leveraging technology, are crucial from a marketing perspective within a CE framework. These initiatives enable firms to effectively respond to market demands, reshape workflows, and improve the circularity of product and material consumption through the application of artificial intelligence, big data, and the Internet of Things (Hattar, 2023). Moreover, these digital technologies significantly enhance the consumer experience by facilitating a more personalized and efficient marketing approach. However, the concept of a CE is still relatively new in academic literature, especially in the context of marketing perspectives. This indicates that research in this area is in its early stages, particularly concerning specific methodological approaches like bibliometric analysis. It is essential to examine consumer reactions to various technology-driven initiatives within the CE. Technology enables companies to assess innovative designs for new products, ensuring their sustainability and efficiency before they are launched in the market.

Fig. 7 depicts a framework showing how marketing interacts with CE elements, offering a clear view of its role within a circular system for practitioners and scholars.

## 3.4. Challenges of marketing in the circular economy

Marketing involves the processes of creating, delivering, communicating, exchanging, and processing value for consumers and society (American Marketing Association, 2017). While the American Marketing Association has established a widely accepted definition of marketing, it does not account for the challenges posed by environmental sustainability. However, the marketing field is beginning to address these challenges, particularly with the emergence of the CE (Rafi, 2022). As a result, the core principles of marketing systems in this area are being redefined. Current marketing theories primarily focus on the consumer journey and purchasing behavior, but there has been limited exploration of product maintenance, recycling, disposal (Siderius & Zink, 2023), responsible consumption (Ogiemwonyi & Jan 2023b), and

the production of primary materials (Siderius & Zink, 2023). These emerging themes require further attention within the marketing field.

Companies must rethink their use and consumption of materials throughout the entire product lifecycle, which includes development, design, and recycling processes. This rethinking necessitates increased collaboration, both internally and externally (Weetman, 2016). It is important to note that the commonly held belief that the CE operates as a self-renewing circle is not entirely accurate (Zink & Geyer, 2017). For example, the CE diagram by MacArthur (2013) oversimplifies the complexities of the current circular economy. Without addressing the fundamental barriers within the economic system, such as market economics, the CE may struggle to reach its full potential (Siderius & Zink, 2023). Market economics is not a separate economy but an embedded system of markets within the CE (Zink & Geyer, 2017), as illustrated in Fig. 8. Therefore, the CE operates within the confines of the market system, meaning that its structures, motivations, and limitations are aligned with those of market economics. When aligned with market system rules, the CE can produce positive outcomes. However, if it fails to align, it may become an obstacle, as discussed in Section 3.4.3.

#### 3.4.1. Cultural challenges

The implementation of a functional CE faces several barriers rooted in cultural challenges. This system emphasizes not only company culture (Pheifer, 2017) but also consumer awareness (Feldman et al., 2024; Ranta et al., 2018). One significant challenge is the general lack of consumer interest in adopting circular products and engaging with the CE (Ranta et al., 2018). These issues are classified as core cultural barriers and present substantial obstacles to the successful implementation of a functional CE (Kirchherr et al., 2018). The transition towards a CE has led to the emergence of remanufactured products (Pisitsankhakarn & Vassanadumrongdee, 2020), but these products do not always appeal to consumers. As a result, many consumers tend to prefer new products over remanufactured ones (Ranta et al., 2018).

Another major challenge hindering the implementation of a CE is the “hesitant company culture.” Often, the CE is confined to the CSR and environmental departments within companies, lacking influence in the operations and sales departments. This relegation limits the CE discussion to industry leaders in sustainable development within specific sectors. Companies need to prioritize the environmental and social benefits of their products while also educating consumers about these advantages. To promote sustainable options and encourage circular business models, companies should increase consumer awareness.

Conscious consumers should be open to learning about new, sustainable solutions and should avoid supporting non-eco-friendly products or materials. To bridge the gap in consumer awareness, marketers can incorporate various communication tools in their strategies. Collaborations with educational institutions can be effective in disseminating information through conferences and lectures. Additionally, social media is a powerful platform to raise awareness and inspire consumers towards circular offerings, particularly among younger demographics who are more active on these platforms (Datareportal, 2023).

Mostaghel and Chirumalla (2021) emphasize the vital role of consumers in CE business models. Educating specific target markets can enhance marketing success (Galati et al., 2022). For instance, addressing “household wasteful behavior,” particularly related to food waste, can help tackle cultural challenges and barriers to a functional CE (Principato et al., 2021; Siderius & Zink, 2023).

#### 3.4.2. Policy regulatory challenges

The literature on CE highlights several policy and regulatory challenges that hinder the adoption of CE principles (Feldman et al., 2024). Several authors, including Pheifer (2017), Prieto-Sandoval et al. (2018), Ranta et al. (2018), and Rizos et al. (2015), have drawn attention to these issues. For instance, Rizos et al. (2015) noted that the transition to a CE is obstructed by the absence of “supportive policy frameworks.” Additionally, Preston (2012) pointed out the lack of “smart regulation” necessary for shaping CE initiatives. Pheifer (2017) warned that current regulations inhibit the cross-border flow of materials, creating a barrier to the shift towards a CE. Furthermore, De Jesus and Mendonça (2018) found that regulatory challenges are increasingly apparent, accounting for nearly 23 % of the research studied, making it the second most pressing issue in the field. Industry leaders and stakeholders must prioritize policy regulation to foster the growth of CE businesses.

The European Commission has introduced various policies aimed at promoting CE, including the “Circular Economy Package.” The objective of this package is to enhance product reuse and recycling to reduce waste (European Commission, 2023). However, the implementation of these policies across Europe has been limited (Kirchherr et al., 2018). Although the initial investment in circular business models can be high, government financial support may help mitigate these costs. Such support is already being utilized in many developed European nations, especially in the agricultural sector and nature conservation (Hodge et al., 2015). If circular business models could compete with linear models in terms of cost, it would address the argument that transitioning

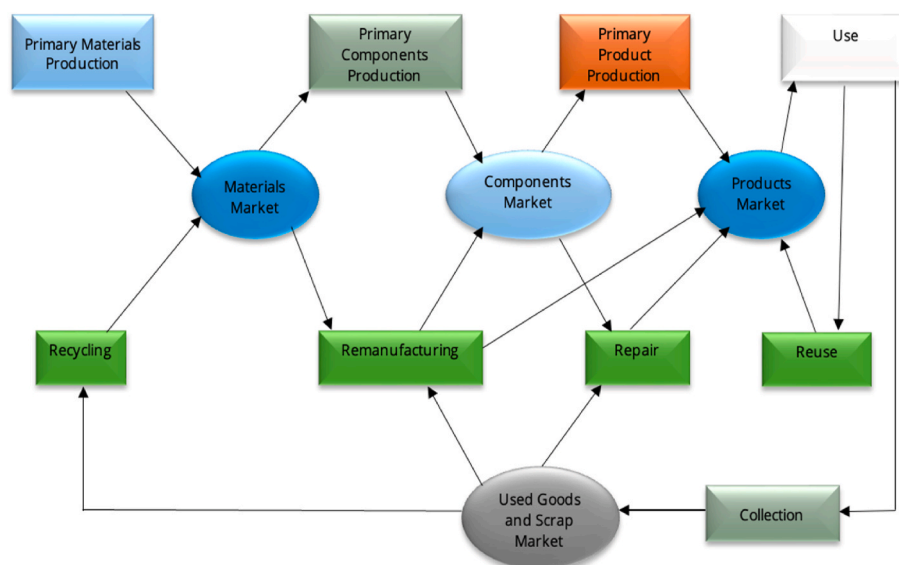


Fig. 8. The CE as a market system. Based on Siderius and Zink (2023).



to a CE is too expensive. While this alone may not guarantee a successful transition to a CE, it could provide significant momentum for those committed to facilitating the change.

### 3.4.3. Marketing challenges

Marketing and market systems present significant obstacles to transitioning to a functional CE. The low prices of virgin materials and the costs associated with CE business models, as noted by Pheifer (2017) and Ranta et al. (2018), play a crucial role in this challenge. For instance, Mont et al. (2017) argued that the prevalence of low virgin material prices could hinder the competitiveness of CE products compared to their linear counterparts. Additionally, Stahel and Clift (2016, pp. 137–158) pointed out that artificially low prices of virgin materials in European countries, due to subsidized energy for production, create a significant barrier to adopting reused or recycled circular materials. Policymakers need to factor in all externalities into the final product price of resources and energy. Targeted interventions, such as the proposed value-added tax for reparations by the German Green Party, “Alliance 90/The Greens,” should also be considered to make circular products more appealing and accelerate the shift toward a more functional CE (DPA, 2017).

According to Kirchherr et al. (2018), recycling certain materials can be economically unfeasible when compared to producing new materials. Similarly, Ranta et al. (2018) suggest that CE initiatives are often too expensive and may require financial subsidies to be economically viable. Rizos and colleagues (2015) note that accessing appropriate financing sources can help companies transition to a CE. De Jesus and Mendonça (2018) mention that only 22 % of the CE literature addresses market challenges, making it one of the least discussed challenge categories. Therefore, industry leaders and professionals must recognize market challenges as a significant concern for achieving a functional CE.

### 3.4.4. Technological challenges

The transition to a CE requires relevant technology to automate various tasks (Pheifer, 2017; Preston, 2012). However, several studies indicate that this technological relevance has not yet been fully realized. Overcoming these technological challenges can unlock significant opportunities for a CE (Preston, 2012). A lack of technology is a major barrier to shaping a CE, with over 35 % of relevant literature identifying technological barriers as the largest challenge (De Jesus & Mendonça, 2018). Nevertheless, when it comes to delivering high-quality remanufactured products, technological issues do not seem to be a core challenge, ranking low among all examined barriers (Kirchherr et al., 2018).

Pheifer (2017) points out that product design poses a significant challenge for the shift toward a CE. Circular product design is crucial for the success of the CE business model innovation. However, a lack of circular product design remains a key challenge in achieving the necessary technological advancements (Kirchherr et al., 2018). Previous studies (e.g., Bento & Wilson, 2016) have also highlighted that slow technological development could impede the integration of circular products into the CE transition (Ritzén & Sandström, 2017). Agarwal and Bayus (2002) made a notable discovery that sheds light on the process of bringing new products to market. Their research revealed that, on average, it takes about 30 years for 30 product innovations to transition from the invention stage to commercialization. This information could be valuable for entrepreneurs and innovators seeking to develop and launch new products. Therefore, conducting additional research to explore these challenges in more depth would be beneficial.

## 4. Discussion

The study contributes to filling a significant gap in the literature by systematically analyzing CE through a marketing lens, highlighting the paradoxes and practical challenges faced by marketers in CE transitions. Unlike prior research, we provide an integrative view that links consumer dynamics, regulatory influences, and brand positioning within

the CE framework.

### 4.1. Circular economy marketing strategy

From a marketing perspective, the traditional 10R hierarchy of CE strategies needs redefining. This redefinition should encompass not only technical and operational priorities but also consumer engagement, value communication, and behavioral influence. Fig. 9 illustrates how each R-strategy can be understood and implemented through marketing practices. These definitions highlight the role of marketing in promoting, communicating, and supporting strategies within CE practices. The CE marketing strategy aims to minimize the environmental impact of resource use and waste. This strategy involves transferring ownership of goods and services to consumers and follows a hierarchical approach: refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle, and recover. These 10R strategies are essential for the entire cycle of production, marketing, consumption, and resource recovery (Malooly & Daphne, 2023). The CE represents a significant shift in business models and marketing strategies, moving beyond traditional methods. It emphasizes that materials should be restored and maintained as valuable assets within a regenerative system. This holistic approach prioritizes innovation, resource preservation, and long-term sustainability.

The 10R strategies are crucial for businesses to adopt sustainable practices, encourage organizations to reassess their operations to minimize waste. These strategies can be categorized into three groups based on the duration of the waste loop they represent. The shorter loops, labeled R0 to R2, focus on developing smarter supply chains that utilize fewer materials and are more sustainable. The medium loops, R3 to R7, aim to extend the lifespan of products and their components when shorter loops are not viable. The longer loops, R8 to R9, address societal aspects, lifestyle changes, and innovative uses of materials. The longer loops address relevant processes (Malooly & Daphne, 2023). These strategies support the argument made by Leung and Ko (2025) that companies need to develop strategic CE capabilities that align with the environmental, social, and governance (ESG) framework. This alignment is essential for fostering sustainable business model innovation and ensuring effective governance that promotes the transition to a CE and supports sustainability goals. Key capabilities such as governing sustainability, collaborating with stakeholders, employing life-cycle thinking, and implementing closed-loop practices are vital for marketers who aim to shift consumer demand toward circular solutions.

These strategies encourage firms to adopt eco-innovations and marketing practices that promote a sustainable and profitable lifecycle for their products and services. It's not just about finding greener production methods; it involves transforming the entire business model to prioritize sustainability (De Pauw et al., 2014). The CE urges companies to reassess their relationships with customers, suppliers, and the community. This approach fosters innovation and helps develop new markets that align with environmental stewardship. A circular business model is adaptable and can respond effectively to changing consumer demands and emerging technologies. By treating waste as a design challenge, companies can find ways to turn waste into valuable resources. This transition leads to stronger strategies that are less vulnerable to market fluctuations. Adopting CE principles is not only an ethical choice but also a smart business decision that can provide competitive advantages and resilience. It focuses on creating value measured not just in financial terms but also by contributing to the planet's health and the well-being of its inhabitants.

Additionally, recognizing the importance of circularity in today's marketing industry, along with the significance of the CE from a marketing perspective, can effectively drive market change and enhance the marketing value chain. Identifying critical factors can provide a more realistic insight into marketing strategies within the framework of CE, which can be achieved by expanding the traditional marketing mix of the four Ps. In particular, additional elements such as participants,

Circular Economy	<ul style="list-style-type: none"> <li>• Design phase</li> <li>• Most sustainable</li> <li>• Adds value</li> <li>• Responsible use and manufacturing</li> </ul>	R0 Refuse	Encourage reduced consumption by influencing consumer choices through sustainable branding. Marketers should avoid unsustainable products, presenting brands as purpose-led and eco-conscious.	SHORT LOOPS
		R1 Rethink	Transform consumer relationships by emphasizing access-based models like leasing and sharing, focusing on service rather than ownership. Marketing showcases the benefits of collaborative and subscription-based consumption.	
		R2 Reduce	Highlight the value of minimalist consumption and eco-efficiency. Marketers promote reduced packaging, lower carbon footprints, and efficient resource use as key selling points.	
	<ul style="list-style-type: none"> <li>• Consumption phase</li> <li>• Optimal use</li> <li>• Preserve and extend life of products</li> </ul>	R3 Reuse	Create emotional and functional value around second-hand or re-commerce models. Marketing strategies should focus on resale platforms, product longevity, and customer stories that normalize reuse behaviors.	MEDIUM LOOPS
		R4 Repair	Position repair services as a key element of the brand's after-sales strategy. Marketing efforts should highlight repair kits, service centers, and empower customers to extend product life.	
		R5 Refurbish	Promote refurbished products with warranties and quality assurance. Marketing should emphasize value, trust, and sustainability to reduce the stigma around them.	
		R6 Remanufacture	Build brand narratives around remanufactured products as premium and environmentally responsible alternatives. Marketing highlights the retention of original value and technical integrity.	
		R7 Repurpose	Promote creativity and innovation by marketing repurposed products. Marketing should position brands as forward-thinking and community-oriented through storytelling and cause-driven efforts.	
	<ul style="list-style-type: none"> <li>• End of life or return phase</li> <li>• Capture and retain value</li> <li>• Use waste as a resource</li> </ul>	R8 Recycle	Boost recycling initiatives with clear labeling, take-back programs, and consumer education. Marketing simplifies processes and makes recycling more convenient and rewarding.	LONG LOOPS
		R9 Recover	Align energy recovery narratives with sustainability certifications and carbon offsetting initiatives. Marketers should highlight how waste-to-energy processes enhance the brand's environmental responsibility.	
Linear Economy	<ul style="list-style-type: none"> <li>• Loss of resources</li> <li>• Value lost</li> <li>• Environmental pollution</li> </ul>	Landfill or Incineration	Communicate the brand's commitment to avoiding landfills. Marketing highlights end-of-life goals and corporate responsibility to reduce non-recyclable waste.	

Fig. 9. The CE strategies from a marketing perspective (authors own adapted from Malooly & Daphne, 2023).

physical evidence, and the service assembly process as proposed by Booms and Bitner (1982) have been integrated into the marketing mix. Moreover, factors like the planet (environment), people (social equity), and profit (profitability) further transform the conventional marketing mix into a circular model. Adopting strategies aligned with the CE not only supports environmental sustainability but also benefits society and enhances profitability.

#### 4.1.1. Planet

Many companies today are taking steps to protect the planet and the environment by engaging in eco-friendly activities (Ogiemwonyi & Eneizan, 2024). These activities can be categorized into three types: internal, external, and offering activities. First, internal activities are initiatives undertaken by companies to promote CE principles and address environmental issues. Examples include the installation of solar panels and the provision of electric vehicle charging stations. Second, external activities refer to the eco-friendly initiatives that companies implement and make visible to the public. An example is the adoption of green supply chain technologies designed to reduce CO<sub>2</sub> emissions (Ogiemwonyi & Eneizan, 2024). To create a healthier planet (environment), the CE should encourage and invest in green initiatives utilizing advanced analytics, artificial intelligence, blockchain technology, and

the Internet of Things (Palcek, 2022). This is particularly important in manufacturing settings that integrate green initiatives into their supply chains. Third, offering activities involves companies' strategies that support circular product and service design. This includes the production of bioplastics and other plastic products, along with their recycling or processing stages.

#### 4.1.2. People

Social equity in a CE focuses on distributing the benefits and responsibilities of transitioning to the CE model in a fairly manner across all people and communities, regardless of their backgrounds. It promotes inclusive growth and addresses the social impact of circularity by creating a sustainable future. Companies engage in activities and operations aimed at ensuring societal and economic sustainability, collectively referred to as "people." These efforts focus on the empowerment, diversity, and safety of all stakeholders within an organized environment. Empowerment involves granting individuals authority, regardless of their background, which fosters an understanding of the importance of social diversity, equity, and inclusion in brand marketing (Ferraro et al., 2023). Discrimination and inequality have historically been prevalent in businesses, particularly in market segmentation. However, due to the negative effects of these issues, there are ongoing efforts to

promote social diversity and equity through stakeholder education and the implementation of marketing research (Park et al., 2023). Diversity includes individuals from various societal backgrounds, ethnicities, genders, and sexual orientations. Safety entails protecting individuals and securing the work environment against harm, which can be accomplished in several ways. For instance, providing employees with a clean and healthy working environment and selecting better materials to minimize CO<sub>2</sub> emissions in the workplace (Ogiemwonyi & Eneizan, 2024). Marketers should also choose fair business partners for their suppliers to ensure the safety of employees.

#### 4.1.3. Profit

Profitability is the economic gains that businesses achieve by minimizing transaction costs, operating costs, and capital costs. Transaction costs refer to the expenses associated with economic transactions, which can hinder the establishment of lasting relationships between parties. The circular business model strategy, as described by Bocken et al. (2016), seeks to slow down resource loops in a CE by reducing waste, prolonging the lifespan of products within the value chain, and recycling materials for further use. High-quality products can be manufactured while maintaining a continuous production line that focuses on reusing and extending the life of those products, as exemplified by Patagonia's commitment (Hattar, 2023). Operating costs, on the other hand, are the ongoing daily expenses incurred by running a business. In the manufacturing sector, especially regarding plastic and bioplastic products, these costs can be lowered by implementing solar energy solutions (Mostaghel et al., 2023). This approach not only decreases operating costs but also minimizes the environmental impact of the business. Research indicates that reducing operating costs is critical for effective resource loop marketing strategies within the CE, with studies showing a potential reduction of over 10 % in production costs when using recycled materials (Mostaghel et al., 2023). Capital costs refer to the one-time expenses associated with purchasing goods, services, and other essential assets. These costs can be effectively reduced by adopting circular business models. For instance, by providing economic solutions and efficient services to customers, companies can foster long-term relationships and invest in recycling products instead of merely selling them. This strategy allows customers to lower their capital costs while benefiting from cost reductions.

### 4.2. Significance of aligning with the circular economy

Adopting the CE model can enhance marketing through improved sustainability, increased brand equity, and better overall firm performance. These aspects are explored below.

#### 4.2.1. Sustainability impact

Sustainability impact is a crucial concept that involves meeting present societal needs without depleting the natural resources required for future generations. This means that firms and society must balance their needs with those of the environment. Achieving sustainable outcomes requires a comprehensive approach that considers social welfare, consumption patterns, economic growth, and environmental care, all of which necessitate proactive ethical considerations (Vadakkepatt et al., 2021). Such considerations enable society to make decisions that are fair, just, and responsible. One effective strategy for reducing resource consumption and closing the loop on resource use is the CE model. This model emphasizes the efficient and effective use of resources while prioritizing environmental considerations within the marketing mix (Bocken et al., 2016). By adopting this approach, businesses and individuals can reduce their environmental impact and promote sustainability (Ogiemwonyi & Jan 2023a). This strategy is ultimately beneficial for minimizing waste and enhancing resource efficiency. The transition to a CE is deeply rooted in institutional logics, which often create competing narratives between economic growth and sustainability imperatives (Tanchangya et al., 2025). This aligns with our application of

paradox theory, where conflicting logics – such as cost-effectiveness versus ecological regeneration coexist and influence marketing strategies for CE adoption.

To foster communal sustainability, individuals must take an active role within their communities. This involves being aware of the impact of their actions on the environment and taking steps to mitigate that impact. It also requires engaging with communities to develop sustainable solutions collaboratively (Ogiemwonyi, 2024). At the same time, it's essential to recognize that financial gain remains a key consideration for stakeholders. Thus, society must find ways to balance economic growth with environmental protection. It's important to understand that every pursuit has a significant impact on sustainability outcomes. Therefore, individuals should strive to make sustainable choices in all aspects of their lives, from the products they purchase to their travel habits and energy consumption. By making these conscious decisions, both businesses and individuals can contribute to environmental protection, promote social welfare, and achieve sustainable economic growth.

#### 4.2.2. Brand equity of a product

Brand equity is a critical aspect of any company's success. It refers to the overall perception customers have of a product or service and the value they associate with it. In essence, brand equity encompasses all the experiences customers have with a particular brand. Strong brand equity can result in increased customer loyalty, higher sales, and greater profits. Several factors can influence brand equity, including product quality, pricing, customer service levels, and the company's overall reputation. Companies that invest in establishing a unique selling proposition or competitive advantage often see significant improvements in their brand equity. One effective approach to enhancing brand equity is to adopt a CE perspective in marketing. This involves positioning sustainability as a means to meet customer needs and actively promoting sustainable products in the market. By doing so, manufacturers and marketers can demonstrate their commitment to environmental responsibility, helping to build trust and loyalty among customers. Research by Oliveira et al. (2023) indicates that implementing CE principles can lead customers to better understand a product's brand value. This approach encourages more sustainable practices in the market, paving the way for a more sustainable future for everyone.

#### 4.2.3. Firm performance

Firm performance is a vital aspect of any business, reflecting how effectively a company executes its strategies to achieve its overall objectives while considering its impact on sustainability. It encompasses various factors such as growth, profitability, returns, market value, economic value, and customer satisfaction – all indicators of a company's performance (Almashhadani & Almashhadani, 2023). The CE can significantly enhance a company's marketing mix and contribute to firm performance (Zucchella & Previtali, 2019). CE achieves this by reducing unnecessary consumption and waste, leading to lower financial costs and improved financial reporting (Almashhadani & Almashhadani, 2023). Additionally, it promotes the efficient use of resources, which can increase market share and customer satisfaction. By adopting the CE's key performance indicators (KPI) approach, businesses can optimize their operations, boost competitiveness, and contribute to a sustainable future.

## 5. Implications

This research explores ways to enhance marketing within the framework of a CE, offering valuable insights for both theory and practice. The study proposes a comprehensive, step-by-step process for creating and implementing a functional CE position within market and economic systems. Additionally, it identifies various challenges associated with the implementation of a CE, as detailed in Section 3.4 and



**Table 2.** This finding aligns with the earlier observations made by Kirchherr et al. (2017) and Palombi et al. (2024), emphasizing that adopting a CE is a long-term commitment rather than a quick solution. If CE were immediately profitable, issues such as hesitant corporate cultures and a lack of consumer awareness and interest would likely not exist. Firms can prioritize cultural and religious integration as a powerful framework for supporting the CE. By aligning the principles of the CE with values such as stewardship, justice, and restoration, companies can enhance their impact. Additionally, integrating theological principles can provide solutions to ecological and social challenges through sustainable and equitable systems (Lee, 2025). The study visually highlights CE strategies tailored specifically to the marketing context (Fig. 9), and the determinants of supply and demand (shown in Fig. 10) can be applied at various stages of the business value chain. This approach helps identify appropriate tools and strategies for integrating CE within businesses, thus offering valuable support to companies that have adopted CE principles to improve their profitability. The CE is particularly relevant to the SDGs and communities focused on sustainable development, as their strategies align well with circular models (Losa, 2025). Its broader implementation may increase in the future as the concept becomes more accessible. Often, surges of interest lead to experimentation, and some of these projects may succeed over time (Farla et al., 2012). Consequently, this paper will present two contributions that will be discussed further below.

### 5.1. Theoretical implications

The research provides valuable insights into the role of marketing within the context of the CE and highlights future research opportunities. A SLR and bibliometric analysis were conducted, contributing to the existing CE literature by integrating contemporary marketing trends related to sustainability management. This study offers a theoretical contribution by examining the CE from a marketing perspective and addressing its challenges (see Table 2), business models (refer to Fig. 6), and the 10R strategy visual. By systematically analyzing peer-reviewed published data, the research illustrates the current state of knowledge in this field, as shown in Fig. 3a, b, 3c, and 5. This exploration enhances our understanding and fosters a more integrated approach within the study context. The findings align with recent studies, such as those by Koval et al. (2022) and Rodrigo et al. (2024), which also utilized bibliometric analysis to identify challenges hindering the implementation of the CE.

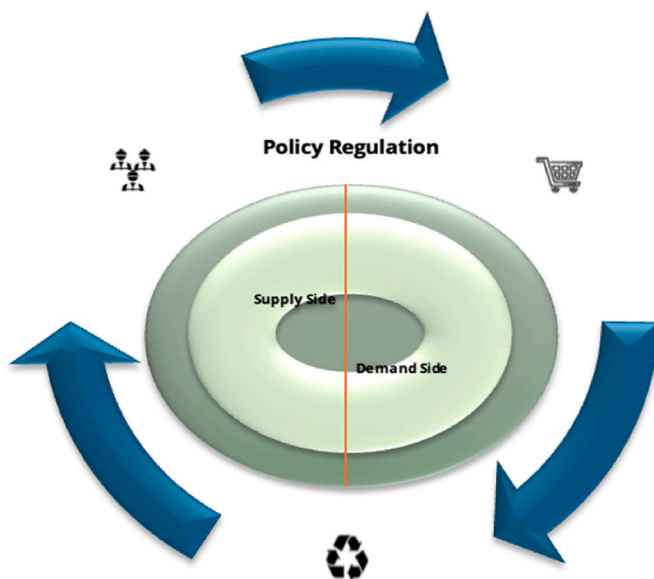
Additionally, the study identifies the most productive contributors, including authors and countries, as well as the most influential articles and publications. It describes the collaboration network through co-authorship analysis (see Fig. 2a, b, and 2c). The research maps the intellectual structure of the field using cartographic analysis, highlighting significant clusters (see Fig. 4). This mapping resulted in the identification of thematic clusters and theoretical contributions, consistent with findings from recent studies examining similar factors (Lim et al., 2024; Lim & Kumar, 2024; Mukherjee et al., 2022). Furthermore, some studies, including those by Dzhengiz et al. (2023), indicate that not all circular practices lead to cost reductions for businesses or improve economic performance. The review suggests that businesses can move beyond the non-materialistic perspective often associated with the win-win solution of the CE.

Based on a literature review that analyzed over 80 % of published documents, this study is among the first few conceptual review papers in the fields of sustainable management and marketing science, examining the CE from a marketing perspective. This highlights that CE is a developing topic of significant global importance. The study provides a comprehensive review of CE business models that integrate sustainability and management practices, creating a balanced framework that benefits both theory and practice within the context of bibliometric research. It reveals the extent of existing literature regarding CE and marketing. While previous research has proposed frameworks for sustainability (Winterich, 2019), recent advancements have improved the implications for sustainability marketing (Vadakepatt et al., 2021).

Several studies have identified weaknesses in marketing strategies; however, there has been a lack of focus on rethinking consumption within the realm of circular business management and marketing research (Vadakepatt et al., 2021). Despite some limitations in incorporating internal marketing levels to effectively position companies in the market, this study has identified and suggested several strategies that could guide future research at the intersection of CE and marketing. These strategies can be applied throughout an organization's value chain (see Fig. 9 and Table 3). These findings align with previous studies that have utilized CE strategies to address both ecological and economic challenges (Ethirajan et al., 2021; Jia et al., 2020). For example, Jia et al. (2020) illustrate the benefits these strategies provide to businesses. By implementing circularity in marketing, companies can ensure continuity, enhance value, increase revenue, lower costs, and create jobs (Silvério et al., 2023). All these factors contribute to gaining a competitive advantage in the marketplace (Prieto-Sandoval et al., 2018).

This review offers valuable insights into sustainability, the CE, and marketing science by discussing various strategies in light of existing literature (Mohan et al., 2024; White et al., 2025). Notably, it emphasizes the need for businesses to adopt approaches that align with societal needs, focusing on scientific methods rather than relying solely on tools. Companies are encouraged to re-evaluate their relationships with customers and adapt to the growing market demand for sustainability, while also engaging with suppliers and the broader community. This approach should create new market opportunities that align with environmental stewardship and the SDGs. These insights resonate with a recent study that has rekindled the debate on sustainability marketing (White et al., 2025).

This review makes a notable contribution by proposing a new definition of marketing that responds to the increasing demand for CE practices. This demand underscores the necessity of incorporating CE themes – such as the planet (environment), people (social equity), and profit (profitability) – into the traditional marketing mix of the four Ps to establish a circular framework. The study identifies various factors and themes that can facilitate the transition to a CE from a marketing perspective. These factors include regulation, social norms, performance metrics, product reuse, consumer demand, transparency, technology, and sharing. The alignment of marketing with CE principles is influenced by factors such as sustainability impact, brand equity, and overall



**Fig. 10.** The policy regulation, supply and demand side for CE adapted from (Prieto-Sandoval et al., 2018).



**Table 3**  
Circular economy business models and strategies.

Key Components	Examples (Model Type)	Description (Marketing and Business Context)
CE business model	1. Circularity start-ups	<ul style="list-style-type: none"><li>• New ventures built on CE principles from the outset, offering products/services designed for reuse, repair, or regeneration.</li></ul>
	2. Circular business models	<ul style="list-style-type: none"><li>• Business models fully integrated with circular practices such as take-back schemes, waste reduction, and recycling loops.</li></ul>
	3. Transforming to a CE business model	<ul style="list-style-type: none"><li>• Established firms shifting from linear to circular operations by redesigning processes and value chains.</li></ul>
	4. Model diversification	<ul style="list-style-type: none"><li>• Firms expanding their circular offerings alongside traditional products to meet new market and sustainability demands.</li></ul>
	5. CE business model acquisition	<ul style="list-style-type: none"><li>• Firms acquiring circular startups/technologies to integrate sustainable practices and expedite circular transformation.</li></ul>
	6. Social enterprise	<ul style="list-style-type: none"><li>• Firms focused on social impact and environmental value creation, using CE strategies to address societal challenges.</li></ul>
	7. Bottom of the pyramid (BOP) solutions	<ul style="list-style-type: none"><li>• Business models designed to serve low-income customers with circular solutions, often through repairs and shared solutions.</li></ul>
	8. Product and service process	<ul style="list-style-type: none"><li>• Redesigning products and services to align with circular goals by enhancing durability and offering servitization options.</li></ul>
Sustainable business strategies	<u>Examples (Strategy)</u>	<u>Description (Sustainability and Marketing Context)</u>
	1. Using resources to avoid waste and improve efficiency.	<ul style="list-style-type: none"><li>• Enhance material and energy efficiency to lower costs and environmental impact while increasing brand effectiveness.</li></ul>
	2. Closuring resource loops	<ul style="list-style-type: none"><li>• Design systems to reuse of materials continuously, enhancing lifecycle value and reducing dependence on virgin resources.</li></ul>
	3. Replacing traditional energy sources with renewable sources and utilizing natural processes	<ul style="list-style-type: none"><li>• Transition to green energy sources while promoting low-carbon credentials and fostering eco-innovation.</li></ul>
	4. Providing functionality	<ul style="list-style-type: none"><li>• Focus on delivering performance/outcome, as mobility/warmth, in lieu of product ownership, to support product-as-a-service model.</li></ul>
	5. Embracing supervising role	<ul style="list-style-type: none"><li>• Assume responsibility across the product lifecycle, including managing reverse logistic, implementing take-back programs and overseeing suppliers.</li></ul>
	6. Encourage sufficiency	<ul style="list-style-type: none"><li>• Promote responsible consumption habit and reduce overproduction, promote minimalism, and create focused message on the concept of “enough.”</li></ul>
	7. Reprocess resources for the economy and the Earth	<ul style="list-style-type: none"><li>• Transform the reclamation of materials and reintegrate them into value chains to meet both ecological and business goals.</li></ul>

**Table 3 (continued)**

Key Components	Examples (Model Type)	Description (Marketing and Business Context)
	8. Value generation	<ul style="list-style-type: none"><li>• Create shared value for businesses, consumers and the planet by integrating sustainability into core strategy and storytelling.</li></ul>
	9. Developing sustainable solutions on a larger scale	<ul style="list-style-type: none"><li>• Promote scaling of innovations and the application of system thinking to incorporate sustainable practices across industries and regions.</li></ul>

firm performance, as highlighted by the study. These findings align with previous research by Mostaghel et al. (2023), which emphasizes the relevance of market theory in the context of the CE.

As shown in Fig. 7, the study analyzes 14 themes related to CE from a marketing viewpoint, significantly contributing to the three pillars of sustainability and green marketing. Many of these themes can be integrated into existing CE frameworks established by researchers such as Chen et al. (2020) and Mohan et al. (2024). Additionally, the study offers a new perspective on how marketing science research can connect with CE literature and marketing positioning strategies (Hattar, 2023), providing fresh insights into the scientific contributions of this analysis. This review highlights these themes to help academic researchers gain a better understanding of CE from a marketing perspective. The goal is to create a more cohesive body of knowledge centered on sustainable CE research in marketing. The study significantly extends recent research on CE, which has predominantly focused on established companies and multinational corporations, as well as models related to the regenerative economy and sustainability.

Furthermore, the study contributes to the development of paradox theory as it applies to CE and sustainability within a marketing context. Research examining this approach, particularly considering CE from a marketing standpoint, is limited. Few studies have focused on CE from this perspective, despite the increasing relevance of paradox theory in sustainability research (De Angelis, 2021; Dzhengiz et al., 2023). Prior literature has mainly addressed trade-offs in corporate sustainability through case studies (Van der Byl & Slawinski, 2015). The application of quantitative bibliometric analysis is crucial for understanding CE from a marketing perspective, yet this aspect has been overlooked in research on paradox theory. Therefore, this study not only enhances our understanding of how CE can improve marketing strategies but also represents the first SLR to integrate paradox theory within the fields of CE marketing.

5.2. Practical implications

The study emphasizes the practical contributions and implications of the CE for managers, policymakers, practitioners, and marketers within the context of sustainable marketing. It highlights the strategic importance of adopting CE principles, which can help stakeholders and decision-makers understand their significance. The research identifies key challenges that marketers encounter in a CE and underscores the necessity of consumer awareness. Such awareness can foster new collaborations and address these challenges within the circular ecosystem. Furthermore, the study examines CE from a marketing perspective, assisting executives in understanding and effectively adapting their strategies. This finding aligns with the work of Arsawan et al. (2023), which indicated that a commitment to CE can enhance sustainability and resonate with the green economics model. To successfully implement CE principles, practitioners must ensure that their new internal operations align with the overall business model. These insights are consistent with Kandpal et al. (2024), who proposed that achieving

sustainable prosperity will create value and enhance the economic and social aspects of CE principles.

The research also reveals various marketing challenges from a CE perspective, urging managers to develop new collaborations within the circular ecosystem to create circular value propositions and build greater resilience. These findings echo earlier studies, such as those by [De Pascale et al. \(2023\)](#), which noted that limited collaboration hinders CE practices. As a result, many companies are hesitant to collaborate within the value chain, making it challenging to implement CE practices. Importantly, the study highlights the need to align internal circular activities with marketing goals across the entire CE business model. A crucial element of successful marketing in a CE is having dedicated and confident personnel, along with motivated marketers and managers. Marketers need to learn how to effectively motivate consumers to engage in green marketing within a CE. As discussed in Section 3.2, CE business models complement sustainable business strategies. These models aim to maximize value and efficiency across businesses and supply chains while promoting circular solutions. They are crucial for the transformation toward functional circular economies and industrial ecosystems, which involve networks of stakeholders engaged in value and process chains, ranging from small start-ups to large corporations. These findings are consistent with the research conducted by [Geissdoerfer et al. \(2018\)](#).

As shown in Table 3, circular business models demonstrate how companies incorporate sustainability into their core value-creation processes. Whether for startups or established enterprises, marketing plays a crucial role in positioning circularity as a competitive and consumer-focused strategy. Additionally, sustainable business strategies aim to align environmental responsibility with long-term business performance. Through effective marketing, these strategies convey value, foster consumer trust, and facilitate the transition to a more sustainable lifestyle. These strategies create opportunities for marketers to promote sustainable prosperity, envision a circular future, unlock new economic opportunities, and encourage marketing innovation. A functional circular model, along with its associated strategies, holds great potential for shaping a future characterized by zero waste and maximum value. Recent literature, including studies by [Kasana et al. \(2024\)](#) and [Afshari et al. \(2024\)](#), further highlights the role of circular start-ups in driving economic growth and supporting a zero-waste management economy, which is essential for the success of businesses operating within a CE. Similarly, [Bonfanti et al. \(2025\)](#) demonstrate that business incubators, using various tools, facilitate the development of a sustainability-oriented ecosystem for new enterprises. These incubators assist start-ups in establishing a clear purpose and fostering a cultural mindset conducive to their success, where sustainability is increasingly important. Ultimately, the research suggests that adopting a CE approach from a marketing perspective can lead to significant cost reductions when implementing sustainable practices in start-ups.

As mentioned in Section 1, adopting a CE can lead to innovative marketing solutions and practices in production and consumption, fostering sustainable wealth creation. This transformation can significantly enhance both economic and social values. According to [Prieto-Sandoval et al. \(2018\)](#), implementing a CE model is essential for achieving long-term sustainability and ensuring a better future for businesses. Furthermore, this approach improves regulatory policies and stimulates both supply and demand, as illustrated in Fig. 10. It also influences how marketing engages with and aligns itself with the principles of the CE.

The policy regulation for a CE is designed to create a system that uses resources efficiently, keeps products and materials in use for as long as possible, and minimizes waste. These regulatory policies have a positive impact on the environmental practices of consumers, suppliers, and organizations. Adopting CE principles can benefit both the environment and the economy ([Circular Academy, 2024](#)). To achieve this, policymakers should consider measures to reduce resource demand. For example, rather than encouraging the purchase of new products, they

could promote repair and refurbishment through innovative policy tools. These findings are consistent with previous studies, such as those by [Hattar \(2023\)](#), which emphasize that repairable and recyclable approaches help conserve natural resources and foster more sustainable consumption patterns, ultimately supporting a sharing economy. Policymakers play a crucial role in advancing sustainable waste management. They can advocate for innovative waste collection solutions, effectively regulate economic incentives for clean production, and address political obstacles, such as inefficient consumption taxes and low-interest loans ([Zhu et al., 2015](#)). Additionally, policymakers can enhance public awareness and provide financial support for economic development ([Xue et al., 2010](#)). Effective economic incentives may lead to improvements in public health and the environment ([Ilić & Nikolić, 2016](#)). The study highlights the importance of considering the economic impacts of environmental externalities to create a more sustainable marketing strategy. By analyzing these costs, businesses can better understand how to implement CE principles and reduce their environmental footprint. These findings align with previous research by [Andersen \(2007\)](#), [Arsawan et al. \(2023\)](#), and [Zorpas \(2024\)](#), all of which underscore that adopting this approach can positively and constructively impact our planet.

The supply side factors are closely linked to the marketing structure, making it essential to maximize efficiency and innovation in the supply chain for business success in today's economy. In a CE, the supply side emphasizes designing, producing, and using materials and products in ways that minimize waste and optimize resource utilization. Key considerations include effective production methods, enhancements to manufacturing processes, the promotion of innovative business models, the use of advanced technology, and organizational innovations. A technology-oriented approach to a CE, which emphasizes organizational innovation, is critical for reducing resource consumption while meeting essential human needs ([Prieto-Sandoval et al., 2018](#)). Implementing technological innovations can positively affect businesses of all sizes, from small enterprises to larger industries. This approach helps close eco-industrial and marketing loops, enhancing environmental initiatives. [Deng et al. \(2025\)](#) and [Deutz and Gibbs \(2008\)](#) emphasize that sharing information and developing technological infrastructure drive advancements from micro to macro levels. These findings are consistent with previous studies, such as those by [Dev et al. \(2020\)](#), which demonstrate that a well-developed technological infrastructure can create social and economic opportunities for companies. Conversely, a lack of technological advancement may lead to adverse effects ([Chen et al., 2020](#)). Marketers can utilize technological advancements to address the unsustainable use of natural resources and reduce production costs. This perspective aligns with findings from [Huang et al. \(2014\)](#), indicating that underutilized materials, such as waste, can be repurposed as raw materials for companies ([Braungart et al., 2007](#)). Consequently, policymakers can promote product designs that extend product life and minimize energy and raw material usage, thus encouraging the adoption of CE principles from a marketing viewpoint. The success of companies in the marketplace is significantly influenced by supply-side factors that fulfill human needs. Companies that foster collaborative relationships and embrace circular management practices within their supply chains will achieve greater success ([Alghababsheh, 2024](#)). The profitability of the circular resource market is notably impacted by these supply-side determinants, which relate to a company's ability to adopt sustainable business models and create value that aligns with consumer needs and market demands, making the CE concept viable ([Yang et al., 2017](#)). The study illustrates that CE business models, sustainable business practices, and marketing strategies can effectively work together. This collaboration enables the implementation of various approaches to promote environmental sustainability, emphasizing the establishment of new businesses using a circular canvas approach and practicing dematerialization ([Yang et al., 2014](#)).

The demand side for products is influenced by several factors, including consumer needs, societal expectations, environmental

awareness, and the preference for sustainable options. In a CE, the demand side emphasizes how consumers and other end-users interact with materials and products. This includes their choices in selecting, using, and disposing of these items. It also involves encouraging responsible consumption, supporting circular business models such as sharing and leasing, and promoting recycling practices. Companies that embrace the principles of a CE in the long term can enhance consumer perceptions of value and improve the social image of their products. As consumers become more environmentally conscious, they are likely to adopt more responsible behaviors. By promoting environmental education programs within local communities, awareness of the value of nature and its resources can be increased (Ogiemwonyi & Harun, 2020), which further enhances appreciation for CE principles (Circular Academy, 2024). Businesses that implement CE strategies in waste management and focus on reducing CO<sub>2</sub> emissions will be better equipped to respond to changing consumer preferences and marketing trends (Mallick et al., 2023; Wiel et al., 2012; Xiao, 2025; Zorpas, 2024). Sustainable product design can be achieved by returning materials either to the biosphere or the technosphere (McDonough et al., 2003; Peralta-Álvarez et al., 2015). For the CE to be successful, the rate of consumption must not exceed the rate of recycling (Kalmykova et al., 2016). A recent study by Hondroyiannis et al. (2024) supports this view, noting that recycling rate performance contributes to the EU's circular economy and responds to macroeconomic factors that affect the business environment. These findings align with the literature explored in the current analysis.

The study emphasizes that policy regulations, along with both supply and demand factors, are interconnected and significantly influence the development of the CE marketing. These elements help establish a legal framework for the market on the supply side, which affects the challenges faced by organizations involved in business metabolism and creates the conditions necessary for a CE to thrive. On the demand side, consumer behavior is crucial, especially regarding preferences for environmentally innovative products. The introduction of these products and circular business models drives change and can be influenced by policy regulations. This ongoing interaction is illustrated in Fig. 10. Most scholars agree that a CE requires marketing innovative solutions that align with both production and consumption, thereby promoting wealth creation through regeneration (Prieto-Sandoval et al., 2018). This concept aligns well with the determinants associated with CE marketing.

Additionally, this review identifies key paths for marketers to navigate through CE from a marketing perspective, as illustrated in Fig. 11, and discussed below:

- a) Developing scalable circular marketing solutions: To fully benefit from a CE, businesses should create a marketing strategy that can grow efficiently with their expansion while also promoting CE principles aimed at reducing waste and improving resource utilization. It is crucial to implement this transition gradually, ensuring that the scale and timing are appropriate. By identifying opportunities within the CE framework, companies can achieve profitable and sustainable outcomes over time. This process involves leveraging valuable insights into consumer brands and market trends, with a focus on scalable circular solutions that can quickly enhance the economy. Moreover, these solutions should offer viable CE models that marketers can utilize to address circular challenges (MacArthur, 2024).

Marketers have a key role in accelerating the CE by reframing the transition as a valuable opportunity for marketing (Deloitte, 2024). By developing achievable offerings that resonate with consumers and address climate and environmental issues, marketers can gain deep insights into brand categories and consumer behavior, enabling them to identify emerging opportunities within the CE landscape. This suggests that circular solutions, such as material reuse, can create revenue streams that foster customer loyalty while minimizing environmental

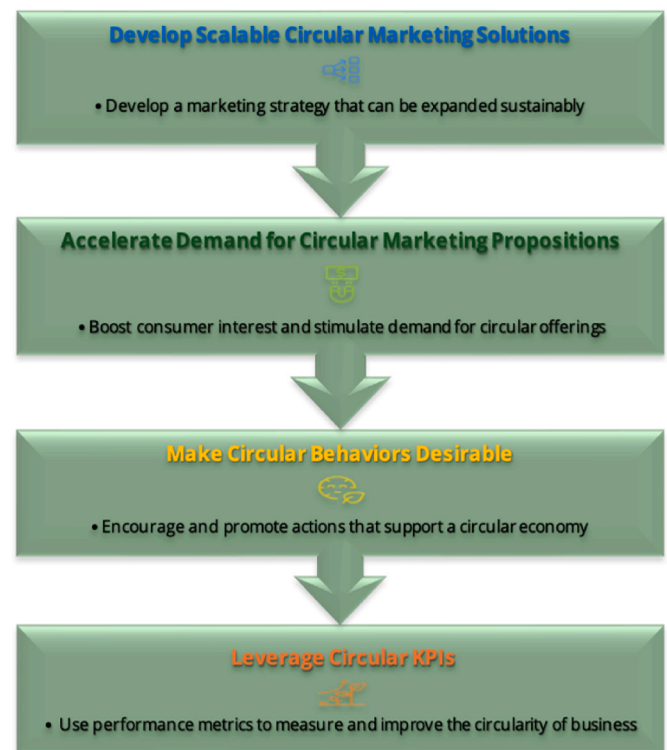


Fig. 11. Paths for marketers to navigate through CE.

impacts. These insights align with recent research by Kirchherr et al. (2018) that emphasizes the importance of maintaining momentum in the CE to accelerate the development of scalable solutions. To further promote scalable circular solutions, marketers must secure internal support and engage stakeholders, particularly key investors in the CE. Implementing scalable circular solutions in marketing can involve initiatives such as product-as-a-service models, resale, repair, and refurbishing services, and take-back programs with incentives. These efforts aim to extend the lifespan of products and reduce waste. Notable examples include Patagonia's commitment to sustainability, H&M's clothing collection initiatives, and IKEA's programs for buying and selling used furniture, which highlight effective practices in this area.

- b) Accelerating demand for circular marketing propositions: This pathway for marketers is becoming increasingly important as developing a CE requires changes at the business-to-consumer (B2C) level to ensure viable solutions (MacArthur, 2024). For instance, this study highlights the need for businesses to create viable CE products and solutions while encouraging consumers to adopt these offerings and preserve their value. Ritzén and Sandström (2017) noted that insufficient technological development could impede the integration of circular products during the transition to a CE. Nonetheless, this study suggests that marketers should find ways to make their businesses' circular offerings appealing to consumers, even if these offerings are not yet widely recognized. These findings align with research by Asgari and Asgari (2021), which explores how a CE transforms business models as we move toward a circular ecosystem.
- c) Making circular behaviors more attractive or desirable: Marketing must shift from transactional approaches to building strong consumer-brand relationships. Marketers can help remove barriers to adopting CE behaviors by implementing business models that reduce environmental impact and promote collaborative consumption. These models include product-service systems that combine products and services to meet consumer needs, as well as repair and resale initiatives. A significant advantage of this approach is that it creates numerous opportunities for potential buyers and investors to

engage with a business, allowing marketers to connect more effectively with customers and foster loyalty (MacArthur, 2024). The findings of this study are consistent with research by Mostaghel and Chirumalla (2021) and Siderius and Zink (2023), which emphasize the essential role consumers play in business models to help overcome barriers to a CE. Campaigns that promote product longevity and durable design can attract consumers toward circular behaviors, ultimately fostering strong brand relationships.

- d) Leveraging circular key performance indicators (KPIs): This approach focuses on circularity as a means to evaluate how companies implement the CE model. It primarily monitors their progress in recycling and reusing materials, aiming to minimize waste and optimize resource allocation throughout the product lifecycle. However, companies often face challenges in achieving the desired circular outcomes due to the short-term growth focus associated with traditional linear metrics. To address this issue, marketers can adopt circular KPIs that enable businesses to track their performance and progress toward their goals. By redefining circular KPIs to include metrics such as consumer lifetime value and the share of proceeds from CE business models, companies can better align their key priorities with circular targets, thereby supporting the objectives of the CE. Research by Ranta et al. (2018) and Mont et al. (2017) indicates that an overreliance on low-virgin material can hinder CE products from competing effectively with their linear counterparts. Therefore, marketers can incorporate all circular externalities into the final product price to better align with performance objectives. Additionally, they can enhance the CE by fostering strong collaborations with policymakers. This insight resonates with the study conducted by MacArthur (2024), which highlights the challenges and opportunities for marketing during the transition to a CE.

This study advances existing marketing practices by outlining a pathway for marketers to transition from a linear economy to a CE, as illustrated in Fig. 11. Policymakers seeking to promote marketing innovation can utilize these key pathways to identify suitable circular or closed-loop markets. Implementing these suggested pathways represents a shift toward functional CE marketing models.

## 6. Limitations and future research

It is essential to acknowledge the limitations of the research presented, which should be considered in future studies. First, the findings are based on a bibliometric analysis of existing scientific literature on CE and marketing. This focus may limit the generalizability of the results, as insights from practitioners or technical reports in this field are not included. Consequently, this may create a gap between the academic, managerial, and practical relevance of CE studies. Future research should incorporate insights from technical and managerial reports to identify more circular solutions that can bridge this gap.

Second, bibliometric analyses typically rely on existing literature, and this study specifically examined works related to CE and marketing. The ranking of authors, journals, and articles was based on global citation counts. As a result, many articles may not appear at the top of the rankings, since it often takes 1–3 years for an article to receive a significant number of citations. Thus, it is likely that many articles published in 2024 were not included in the list of the most cited articles. Future research should take this factor into account.

Third, this study was limited by the specific keywords used in the literature search. While the intention was to include the most relevant keywords, some were inevitably excluded. Future research should expand to cover a broader range of keywords to gain deeper insights into CE and marketing research.

Fourth, while this study utilized VOSviewer software to visualize complex bibliometric networks, it is important to acknowledge its limitations, despite its useful analytical tools and flexible bibliometric metrics. Future studies could benefit from using or combining other

open-source tools that enhance bibliometric analysis, such as BibExcel, Bibliometrix, R, and RStudio (Lim et al., 2024). These tools can complement visualization software like Gephi, providing deeper insights. This combined approach could be valuable in future quantitative systematic literature reviews (SLRs) in the fields of CE and marketing. Additionally, integrating other advanced bibliometric and text mining tools to track emerging themes in CE marketing literature should also be considered.

Fifth, this study focuses on CE from a marketing perspective and identifies specific barriers within this area. Future research should aim to broaden the literature search and investigate additional barriers in other sectors. This approach could uncover further challenges hindering CE implementation across various economic sectors and provide valuable insights for policymakers to accelerate CE adoption on a global scale.

Sixth, the study performed citation link analysis and mapped the most cited articles (JSC  $\geq 43$  sources) related to CE and marketing. However, some relevant articles were likely omitted from this subsample. Future research should address this gap to gain a more comprehensive understanding of the CE and marketing research landscape.

Finally, due to the specific focus of this review, certain variables could not be addressed. Future research should explore important factors such as product reuse, social norms, firm performance, corporate culture, and trust within the CE to gain deeper insights into the relationship between CE and marketing. Additionally, researchers could develop a CE framework tailored to various sectors to enhance marketing dynamics within a circular ecosystem. Furthermore, future studies could strengthen the integration of paradox theory with CE marketing by examining specific market dilemmas, such as the tension between value creation and resource efficiency.

## 7. Conclusions

This study addresses three primary RQs through a structured review and bibliometric analysis, providing a clear understanding of the role of marketing in the context of CE. This analysis highlights both practical and theoretical challenges while outlining future research directions. In summary, over 150 articles were sourced from the WOS and Scopus databases and analyzed using bibliometric methods. These tools helped identify the top journals, dominant keywords, and leading countries making advancements in the CE. The journals with the highest impact included the JCP, followed by RCR and the TFSC (see Fig. 5). A total of 84 keywords related to the main keyword “Circular Economy” were identified (see Fig. 3a). Notable progress in CE is observed in countries such as the UK, USA, Austria, Germany, Canada, Italy, and the Netherlands (see Fig. 2c). The study emphasizes that adopting the concept of a CE can support businesses and society on a more sustainable basis. It presents alternatives to the traditional linear economy and helps tackle pressing environmental challenges. The research indicates that integrating a functional CE into business practices may require a paradigm shift in operational strategies. Ultimately, this review enhances our understanding of how marketing systems can align with a functional CE by exploring various aspects of circular businesses within this framework.

This study argues that CE principles align well with emerging market systems, leading to significant changes in core marketing elements. It highlights the connection between the CE and marketing characteristics. The study reveals that CE marketing is essential for addressing customer preferences, fostering innovation, encouraging creativity, and building collaborative networks. These relationships can create incentives that support human and environmental protection while addressing marketing challenges in a CE. This approach will help researchers better understand the role of CE in marketing and develop a more cohesive body of knowledge. In particular, this paper stands out from previous studies by integrating insights from marketing literature and utilizing a



paradox theory lens to examine the tensions in circular transitions. This addresses a crucial knowledge gap and offers practical insights for marketers and researchers.

In conclusion, implementing effective marketing strategies for CE can help overcome its challenges. Future research should focus on these strategies to improve CE effectiveness and benefits. This study's novelty lies in the use of paradox theory, a bibliometric analysis of CE and marketing, and its presentation of a visual model (Fig. 7) to guide future research.

## 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.

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