

The Circular Economy and Marketing: A Literature Review

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Abstract

The focus on the circular economy (CE) is currently gaining momentum. In this paper, we examine how the objectives of the CE significantly overlap with those of the new generation of marketing, which emphasizes customer involvement in product design and responsible consumption. While the marketing function is essential for realizing the CE, there is still a lack of studies examining the intersection of these two critical concepts. Methodically, this paper aims to bridge this knowledge gap by conducting a systematic literature review that explains the CE-marketing nexus. In total, 45 studies were thoroughly analyzed, and findings indicate that the intersection between the CE and marketing spans four main research themes; (1) contribution of green marketing to the CE, (2) remanufacturing marketing, (3) product-service systems, and (4) neuromarketing tools. An agenda for future investigation of the CE and marketing concepts is suggested, followed by a brief conclusion. This review is valuable for scholars and managers, including those striving to have an increased understanding of the relationship between the CE and marketing.

Keywords:

circular economy, marketing, review, remanufacturing, sustainability

How to Cite:

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INTRODUCTION

The circular economy (CE) has recently received significant attention from academia, industry, and policymakers (Fogarassy et al., 2020). The concept of CE denotes a new way of reinventing the conventional linear model of take, use, and dispose (Aboulamer, 2018). The increasing world population, consumer affluence, resource scarcity, pollution, and environmental pressures have resulted in more calls for shifting from the linear economy to the CE. The transition toward the sustainability-driven CE becomes urgent as there is a need to optimize resource usage, reduce waste, and unlock the potential of innovation and value creation in business markets (Ranta et al., 2020). Presently, there is a continuous push towards a CE, and governments, green non-governmental organizations (NGOs), think tanks, and private sector organizations are all advocating the development and implementation of more CE business models. For example, in the European Union (EU), the CE is at the heart of a recent strategy aimed at balancing economic growth and environmental sustainability. According to Gusmerotti et al. (2019), the CE is the ultimate output of a set of EU policies to decouple economic growth from resource use and waste generation. Similarly, applying the CE, organizations seek to continuously achieve a positive development cycle, which preserves and improves natural resources, maximizes resource use efficiency, and reduces system risks by managing limited stocks and renewable flows (Maugeri et al., 2017). Therefore, the CE can be operationalized and leveraged to realize several sustainable development goals.

The rapid advances in information technologies have significantly reshaped the marketing function. In a recent study, Vassileva and Ivanov (2017) posit that the new generation of marketing, or the so-called marketing 4.0, is becoming a necessity because consumers are looking for products that meet their basic needs and social values. The authors further argue that marketing has emphasized consumer involvement in the design and production process, thereby encouraging responsible consumption. While these objectives considerably overlap with those of the CE, there is a lack of review studies investigating the CE and marketing intersection. For example, Nosratabadi et al. (2019) conducted a comprehensive review of sustainable business models in different application areas. While the authors identified a taxonomy of CE and marketing applications, they did not analyze the intersection of these two concepts. Schallehn et al. (2019) performed a content analysis-based literature of 69 empirical studies discussing product-service systems related to used products (PSSuP). The findings of the study yield the identification of different types of PSSs for used products and four strategic orientations of customer experience creation in PSSuS, including price, confidence, convenience, and delight orientation. While PSSuS represents a building block of the CE, a clear and general focus on the importance of marketing capabilities in accelerating the transition toward the CE is missing. Furthermore, Pagan et al. (2020) made a literature review on the papers that applied eye tracking and electroencephalography (i.e., an efficient method utilized to capture signals from the brain) to assess aspects of sustainability in consumption. Despite its valuable contribution, the review was very specific and fell short of broadly discussing the relationships of these neuromarketing tools with the CE.

To address the knowledge gap, this paper strives to examine the potential of marketing as one strategic function to address sustainability issues and foster the CE paradigm. A systematic literature review is carried out to summarize prior academic works on the intersection of CE and marketing. Despite recent attempts to comprehend the linkages between the two concepts, there are still limited insights into the contribution of marketing efforts to the CE transition. For example, Chamberlin and Boks (2018) noted that even with the prominence of the consumer mindset, the influence of consumer behavior has been under-studied in the CE literature. The authors further argued that there is a need to understand how circular businesses attempt to reshape their customers' behavior or affect the relationship they maintain with them through communication and marketing practices. Moreover, several scholars investigated the contributions of collaborative consumption to sustainable development (Armstrong & Lang, 2013; Becker-Leifhold, 2018); however, a clear analysis of what this marketing trend entails is lacking (Hu et al., 2019). For instance, current studies have focused on specific marketing themes like customer behavior, collaborative consumption, and green packaging (Ek Styvén & Mariani, 2020; Holtström et al., 2019; N. L. Kim & Jin, 2020; Kim & Kim, 2020; Lang & Joyner Armstrong, 2018; Lee & Huang, 2020). Nevertheless, these studies omit a broader perspective on marketing and the CE. To the best of our knowledge, no systematic review has been undertaken recently on the CE and marketing with the goal of analyzing the current state-of-the-art of research in this field. Therefore, there seems to be an urgent need to examine the existing scholarly literature to offer a clear understanding of the relationship between these two concepts, highlighting the main research topics elaborated to date and, thus, laying the foundation for future research. Summing up, the research objectives of this papers are to summarize extant studies on the CE and marketing, by highlighting the main bibliometric indicators and research methodologies applied, the industrial focus of publications, and the keywords used by the authors in their works. Also, this papers aspires to provide suggestions for future research.

To attain these research objectives, a systematic review (Rejeb et al., 2021c; Rejeb et al., 2021a) has been performed to examine 45 studies written in English, published in the timeframe of 2016-2021, and related to the CE and marketing. The main novelty of this paper is to provide a state-of-the-art review of the CE and marketing. In addition, content analysis has been conducted to identify the annual distribution of publications, the major contributing countries, the most relevant journals, the research methods used, the industrial focus of the selected literature, and the most frequent keywords. The main topics discussed in the literature have been highlighted along with several directions for future research in this field.

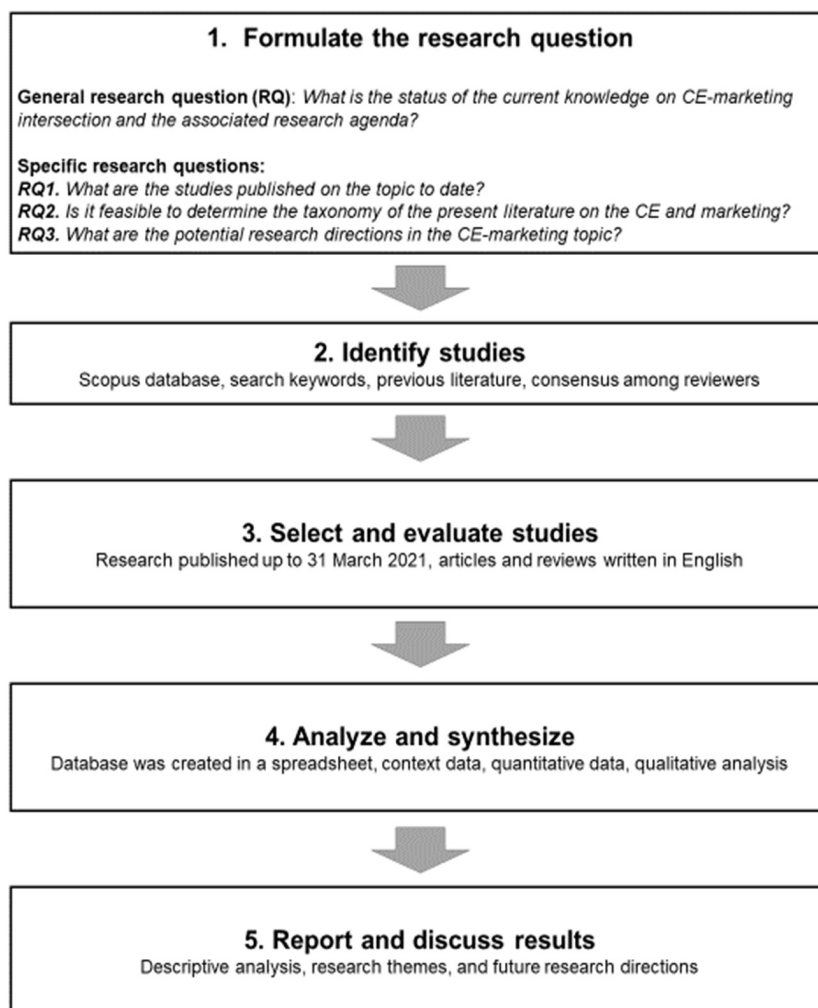
Obtaining an in-depth understanding of the CE-marketing nexus offers fresh ideas on the marketing efforts necessary to reduce waste, promote resource use efficiencies, and foster sustainable product development. Furthermore, marketing efforts may lead to competitive advantages by allowing access to a more extensive base of customers without degrading the environment.

The remainder of this paper is structured as follows. After the introduction, the research method applied in the study is described in detail. Section 3 discusses the descriptive statistics and the main topics identified from the selected studies. Next, we propose an agenda for future investigation of the CE and marketing concepts. Lastly, a brief conclusion is provided, highlighting the study's contributions and limitations.

METHODS

Despite the prominence of blockchain and the CE, existing research on the intersection of both concepts is scarce (Chamberlin & Boks, 2018; Vassileva & Ivanov, 2017), and the current systematic literature review aims to provide an in-depth examination of the extant literature on the CE and marketing. This approach pursues widely accepted steps and thus allows evaluation and replication by other researchers (Adams et al., 2016; Denyer & Tranfield, 2009). The review process has been carried out following the guidelines suggested by Tranfield et al. (2003). Figure 1 depicts the research process following the five stages, which are described below.

Figure 1. The Steps of the Systematic Literature Review



First, the main objective of this review is positioned at the intersection between marketing and the CE. Thus, the search has particularly been designed to determine publications in this junction area. On this basis, the next research question (RQ) has been developed to guide the current study:

RQ. What is the existing status of the current knowledge on the marketing-CE nexus and the associated research directions?

This broad research question is split into three related sub-questions:

RQ1: What are the articles published on the subject to date?

RQ2: It is possible to identify the taxonomy of the current literature on marketing and the CE.

RQ3. What are the future research directions in the marketing-CE topic?

Second, locating the most relevant publications represents the second step of the research process. Two important points are thus considered: academic databases and search terms. Concerning the former, the Scopus database has been selected to identify the publications related to marketing and the CE. This database is widely utilized in systematic literature reviews because of its high-quality content and comprehensive coverage (Rose & Kitchin, 2019). The research objective is in the intersection area of marketing and the CE. An investigation of search terms and a brainstorming session performed by the authors helped identify the search keywords related to marketing and the CE. Consequently, a string query containing Boolean operator AND and the keywords were formulated to find the relevant publications in the databases. In Scopus, the search field "TITLE-ABS-KEY" was chosen as the tag of the searches, which signifies that the combination of terms should be found either in the title, abstract, or author keywords of the studies. This search query returned 116 publications (Figure 2).

Third, some criteria were defined to identify the publications that should be included and eliminated (Rejeb et al., 2021b). As the research was carried out in March 2021, we limited the search to articles published up to 31 March 2021. Only English-speaking peer-reviewed publications related to the nexus of CE and marketing were selected. The use of these inclusion criteria helped reduce the total number of articles to 78. Next, the title, abstract, and keyword fields were attentively read, resulting in the selection of 45 articles for the final review and analysis.

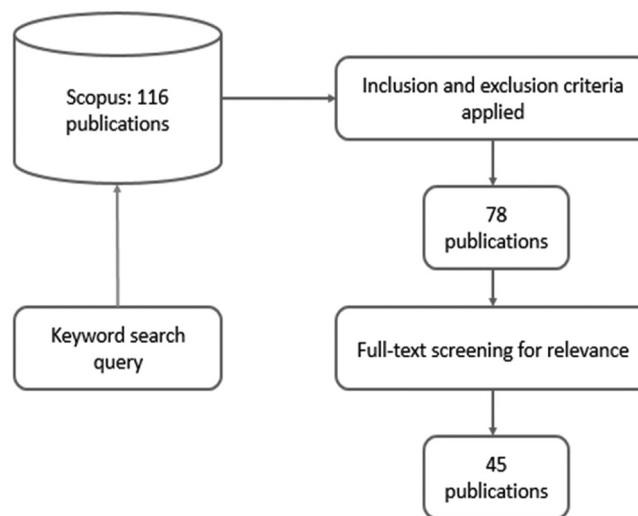
Fourth, we analyzed and synthesized all publications selected and assessed in the earlier phase by reading the entire publication and coding the content. A pre-determined coding of the content was carried out to retrieve the main details in each study and involve two reviewers in the process (Seuring & Gold, 2012; Seuring & Müller, 2008). This is essential to reduce single-researcher bias and guarantee the validity and reliability of the findings. As a result, the authors reached a consensus in the coding and data collection phase to gain more objective findings and eliminate selection bias (Seuring & Gold, 2012). Concerning the coding procedure of studies, we created a database in a spreadsheet including the following three categories such

as (1) Context data: the industrial context in the intersection of CE and marketing is discussed; (2) Quantitative data: Descriptive statistics that include the growth of scholarly production in the area of CE and marketing, the main journals, the countries of contributors, the research methods applied, and the main keywords used; (3) Qualitative analysis: A detailed analysis applying an inductive coding approach to identify the relevant and common topics discussed in the literature without being constrained by pre-defined categories.

Table 1. Selection criteria.

Inclusion Criteria
<ul style="list-style-type: none"> - Publications must be written in English - To ensure the quality and academic nature of the retrieved literature, publications should be peer-reviewed and published in academic journals - Publications must present pertinent discussions on the nexus of CE and marketing
Exclusion Criteria
<ul style="list-style-type: none"> - Conference proceedings, books, and chapters were not considered - Articles exclusively focusing on the CE without presenting discussions from the marketing perspective were not included - Non-English speaking articles were excluded

Figure 2. The Selection Process



RESULTS AND DISCUSSION

Publications by Year

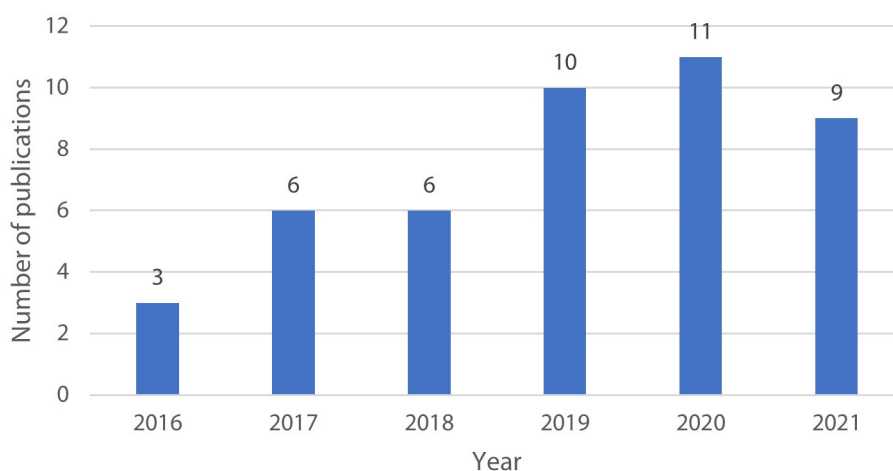
The temporal distribution of the articles is displayed in Figure 3. In general, the annual number of publications presents a growing trend, showing that the intersection of CE and marketing is a recent topic. The first articles studying this combination were published in 2016. Four years later, in an arguably short period, the number of articles increased to 11 in 2020. Although in 2021, there is a slight drop in the number of published articles, it must be taken into consideration that this year is

incomplete and more articles are expected to be published on the topic. As a result, it can be concluded that the academic community is increasingly engaged in studying the CE and marketing.

Publications by Country

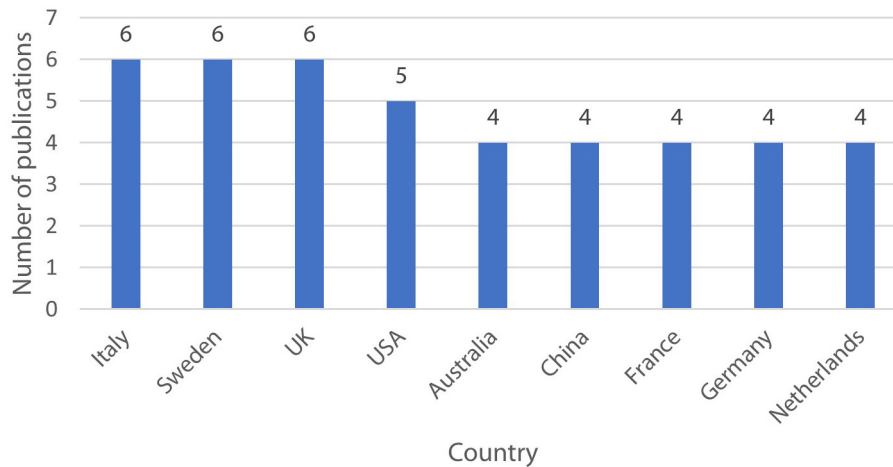
The analysis of the national distribution revealed that 32 countries researched the CE and marketing. As shown in Figure 4, Italy, Sweden, and the UK published six studies each, thereby dominating the list of contributing countries. This finding is consistent with Ferasso et al. (2020) confirming the dominance of European scholars in advancing the CE literature. In Italy, the manufacturing sector is featured by industries as diverse as textile, leather, pulp and paper, which are responsible for significant environmental impacts (Gusmerotti et al., 2019). The importance of CE in Sweden is manifested in introducing economic incentives that encourage repair, such as reducing value-added tax at the point of sale and offering tax rebates to citizens on repairs. The country has also been identified as a leading actor in promoting new environmental policies, sustainable procurement practices, and eco-labelling (Gåvertsson et al., 2020).

Figure 3. Annual Distribution of Publications (until February 2021)



The implementation of CE in the UK has supported the economy, created over 50,000 new job opportunities, and generated € 12 billion property (Alizadeh-Basban & Taleizadeh, 2020). To a lesser extent, Scholars from the USA published five articles, and the remaining countries in Figure 4 published four papers each. Overall, the country-wise distribution indicates the interest of developed nations in circularity issues and their consideration in developing business models (Ferasso et al., 2020). Developing countries represented by China also have a role in advancing the CE literature.

Figure 4. Country-wise Distribution of Publications



Publications by Journal

For the journal-wise distribution, research at the intersection of CE and marketing is published in 30 academic journals. Table 2 shows the journals with two publications and more. Journal of Cleaner Production was the most preferred outlet with eight articles, followed by Sustainability with four articles. The remaining journals on the list published two articles each. It should be noted that the category "Others" compiled all journals publishing one article each, which were in total 23 journals. Summarizing, the reasons behind this journal-wise distribution are attributed to the journal influence and orientation. For instance, the Journal of Cleaner Production, Sustainability, Resources, Conservation, and Recycling, and Science of the Total Environment are flagship outlets in the field of CE and sustainable production and consumption. While these journals have significantly contributed to the CE literature, marketing-related journals still lag far behind in terms of contribution to the CE literature. Thus, it is recommended that marketing-focused journals should consider publishing on the topic of CE and marketing and encourage scholars to search for patterns and associations between the two concepts.

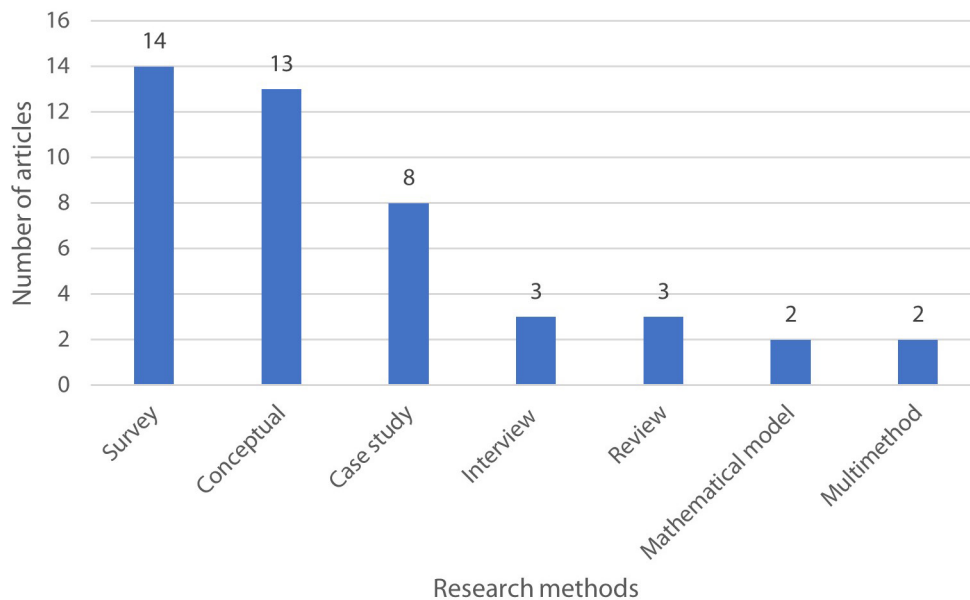
Table 2. Journal-wise Distribution of Publications.

Journal	Number of articles
Journal of Cleaner Production	8
Sustainability	4
Industrial Marketing Management	2
International Journal of Production Economics	2
Resources, Conservation and Recycling	2
Science of the Total Environment	2
Thunderbird International Business Review	2
Others	23

Distribution of Publications According to Research Methods

The CE represents a future paradigm in business that aims to reinvent the conventional linear model of take, use, and dispose and to shift to enhanced collaboration and more efficient and wiser usage of limited resources (Aboulamer, 2018). The concept of CE draws upon sustainability, waste management, innovation, and the environment (Ranta et al., 2020; Spring & Araujo, 2017). Therefore, given the different CE and marketing research interests, diverse methodologies were applied (see Table 3). According to Figure 5, empirical research methods outnumber conceptual research. Within empirical research, surveys were used most commonly in 14 papers, followed by case studies (8 papers), and interviews (3 papers). Surveys were used to evaluate the adoption of eco-labelling among different stakeholders, including consumers and public authorities (Marrucci et al., 2021), investigate the drivers of consumer demand for remanufactured products (Pisitsankkhakarn & Vassanadumrongdee, 2020), and examine the consumer's expectation and willingness to engage in sustainable purchasing behavior (Kabel et al., 2021). The conceptual research is mainly represented by 13 conceptual papers and 3 reviews. Researchers also applied mathematical models in two papers and multi-methods in two others. The portion of conceptual papers is significant, indicating that research on the CE and marketing is in its development phase and that researchers have recently started to conceptualize the intersection of these two concepts.

Figure 5. Distribution of Publications According to the Research Methods



Publications by Context

Besides identifying the research methods used in the CE and marketing literature, we attempted to identify the industries that were explicitly highlighted in the reviewed studies. Most articles, nonetheless, were kept at a generic CE level without focusing on a specific industrial context. Figure 6 depicts the prevalence of studies on manufacturing

and agri-food industries. The manufacturing industry has attracted significant attention from CE-marketing scholars because firms have realized the importance of implementing the CE, rethinking the manufacturing value chain, improving the efficiency of production processes, and responding to customers' expectations (Gusmerotti et al., 2019). Kamble et al. (2021) argue that manufacturing firms highly appreciate the pursuit of a CE strategy as it enables them to achieve sustainable performance, competitive advantage, and better operational practices, including recycling, reducing, and resuing optimization methods. The agri-food industry was mentioned in six studies. More recently, food waste has been a problematic issue that requires the implementation of CE. In the context of CE, McCarthy, Kapetanaki, and Wang (2019) note that the conversion of food waste into high-value products requires, among others, the sophisticated marketing of food products. Similarly, Mondéjar-Jiménez et al. (2016) posit that the CE can reduce food waste resulting from the marketing strategies carried out by retailers, such as promotional offers on food products.

The authors believe that these strategies can influence consumers' intentions and behaviour because they encourage the excessive purchase of food quantities, thereby increasing food waste. Three papers discuss the importance of circular marketing strategies to support conservation behaviours (Kabel et al., 2021) and stimulate the sustainable use of resources in the automotive industry (Kalverkamp & Raabe, 2018). The intersection of CE and marketing was discussed in the scope of the information, communication, and technology (ICT) industry in three studies. The remaining industrial contexts that have been covered from the CE and marketing perspective were the hospitality, textile, and wood sectors.

Table 3. Classification of Publications According to Research Methods

Research method	References
Survey	(Fogarassy et al., 2020; Grębosz-Krawczyk & Siuda, 2019; Gusmerotti et al., 2019; Kabel et al., 2021; Kamble et al., 2021; Kréziak et al., 2020; Marrucci et al., 2021; McCarthy et al., 2019; Mondéjar-Jiménez et al., 2016; Pisitsankkhakarn & Vassanadumrongdee, 2020; Russo et al., 2019; Sehnem, 2019; P. Wang & Kuah, 2018; Y. Wang & Hazen, 2016)
Conceptual	(Aboulamer, 2018; Chamberlin & Boks, 2018; Confente et al., 2020; de Koeijer et al., 2017; Jaroobsathapornkul, 2021; Kalverkamp & Raabe, 2018; Lieder et al., 2017; Ozanne et al., 2021; Pagan et al., 2020; Spring & Araujo, 2017; Vanapalli et al., 2021; Vogtlander et al., 2017)
Case study	(Drábik et al., 2020; Jensen et al., 2019; Li et al., 2021a; Maugeri et al., 2017; Menegaki, 2018; Ranta et al., 2020; Šomplák et al., 2019; Wieser, 2016)
Interview	(Donner et al., 2020; Gåvertsson et al., 2020; Vassileva & Ivanov, 2017)
Review	(Nosratabadi et al., 2019; Schallehn et al., 2019a; Wandosell et al., 2021)
Mathematical model	(Alizadeh-Basban & Taleizadeh, 2020; Shen et al., 2019)
Multimethod	(Donner et al., 2021; Pitti et al., 2020)

Keyword Analysis

We carried out a keyword analysis across the 45 articles. Table 4 shows the frequency of author-supplied keywords used in the literature. “CE” is the most frequent keyword in most publications, which is not surprising because it was included in the initial search query. “Sustainability”, “Remanufacturing”, and “Marketing” are the next most frequent keywords on the list. The key objective of sustainability is to overcome environmental and socio-economic issues and ensure a more sustainable economic system (Nosratabadi et al., 2019). From the consumer perspective, the increased awareness of sustainability issues has led to an increase in the number of consumers embracing lifestyles directed toward ethical consumption (Confente et al., 2020). The high frequency of “Remanufacturing” is attributed to the central role of this strategy in developing circular business models and managing resource loops in the future CE (Jensen et al., 2019).

As a practical approach, remanufacturing also aims to protect the business supply chain economically and environmentally, maximize profitability, and support CE and marketing activities (Alizadeh-Basban & Taleizadeh, 2020). Relevant keywords used in the CE and marketing literature also involved “Business Models” and “Sustainable consumption”. These two concepts are closely related to CE. For instance, Nosratabadi et al. (2019) point out that the circularity of business models implies the way organizations create a system of sustainable value flows among several stakeholders, considering the natural environment and society. The remaining keywords on the list occurred three times each and included “Bieconomy,” “Green Marketing,” “Reuse,” “Theory of Planned Behaviour,” and “Waste Management.” Additional details related to these keywords and their connections with the CE and marketing are discussed in the subsequent sections.

Figure 6. Classification of publications according to industry

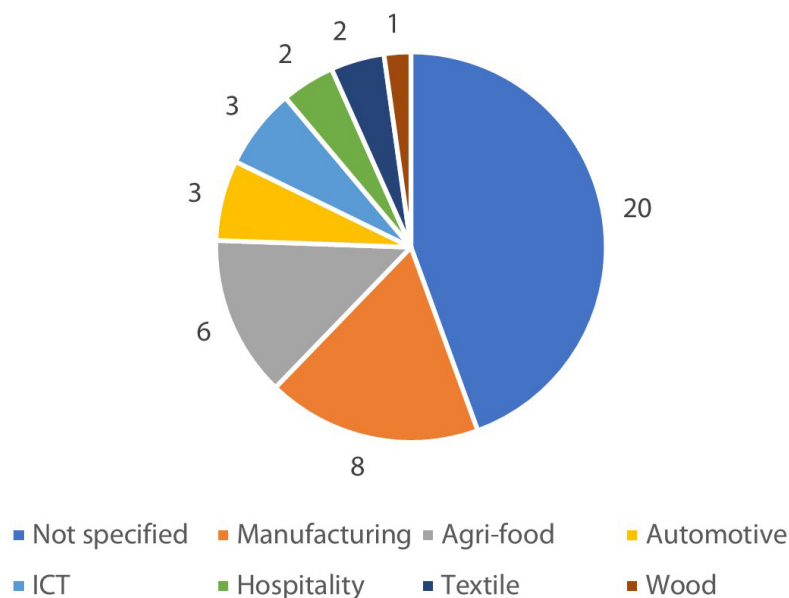


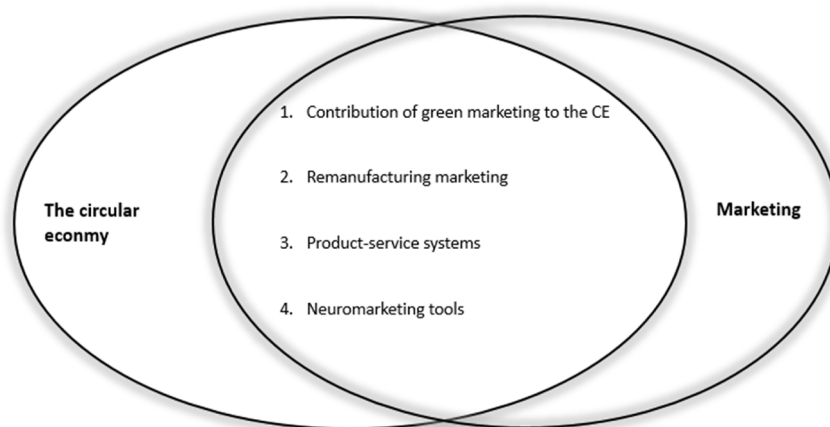
Table 4. Keywords with three or more occurrences

Keyword	Occurrences
CE	32
Sustainability	9
Remanufacturing	7
Marketing	6
Business Models	5
Sustainable Consumption	4
Bioeconomy	3
Green Marketing	3
Reuse	3
Theory of Planned Behaviour	3
Waste Management	3

Discussions

The complete reading of the publications and the creation of the database allowed us to identify four main research themes in which the studies are positioned. Researcher consensus ensured inter-coding reliability (84) (Seuring & Müller, 2008). The determined thematic classes are the following: (1) Contribution of green marketing to the CE, (2) Remanufacturing marketing, (3) Product-service systems, and (4) Neuromarketing tools. Figure 7 depicts the categorization of the relevant literature. While marketing has evolved into an all-encompassing function in the firm, its integration in the CE still remains unclear. Thus, research on marketing and the CE is in the infant stage. The content analysis of the studies classified into the identified research categories is described below.

Figure 7. Topics at the CE-marketing nexus



Contribution of Green Marketing to CE

The increasing interest in the issues of green marketing with an emphasis on environmental issues started in the early 1990s (Nekmahmud & Fekete-Farkas, 2020). In that era, green marketing was envisioned as a mix of organizational efforts to highlight the causes of environmental problems and provide solutions to their inhibition, mitigation, and elimination. Even though these ideas remain important to the contemporary understanding of green marketing, the term has become remarkably consolidated and enriched through time. Green marketing represents a modern phenomenon where most firms have rebranded their products and begun to remarket them as green products or environmentally friendly (Chakrabarty & Das, 2019). It also incorporates a broad range of activities such as product modification, changes to the production process, packaging changes, and modifying advertising. Like conventional marketing, green marketing strategies rely on segmentation, targeting, positioning, differentiation, and the 4Ps (i.e., product, price, promotion, and place) marketing mix, with most consumers having positive attitudes to green advertising and promotion (Chamberlin & Boks, 2018). The initial objective of implementing the CE is to achieve a harmony of the resource enterprise and nature and a balance between economy, society, and environment under the demands of the market and ecology (Miao & Yang, 2013). To accelerate the transition toward the CE, green marketing strategies consider sustainability as a key attribute for consumers and an integral part in the development of product image and quality (Pagan et al., 2020). The increasingly heightened environmental consciousness among consumers constitutes a great marketing opportunity for firms wishing to attract customers by offering eco-innovative products and establishing a long-term connection between environmentally-conscious customers and brands. According to Kopnina (2019), green marketing encourages consumers to purchase sustainable products and drive continuous demand for new products intended not to last or made with "planned obsolescence". The practice of reducing the negative social and environmental impacts of linear production systems also involves the promotion of re-consumption, the influence of consumer choice behavior, the alignment of the marketing mix with current sustainability issues, the promotion of adequate changes in corporate culture, and the engagement of all stakeholders (Gusmerotti et al., 2019; Pagan et al., 2020). While eco-labelling has helped promote green products and support CE, label proliferation has increased consumer uncertainty and affects firms' efforts (Marrucci et al., 2021). Thus, besides green marketing, firms should consider eco-design and green purchasing since they represent key elements of enhanced environmental performance for organizations adopting the CE. To promote green products and improve consumers' green awareness, firms also need to invest in green marketing like advertising strategies and parity marketing (Li et al., 2021b). Under such conditions, upstream firms may contract with retailers to boost marketing efforts by adopting a series of green marketing strategies and cooperative contracts. As a result, the implementation of green marketing in CE projects goes beyond reassuring customers with end-of-pipe solutions to reduce pollution and overcome moral issues, creating new markets and competitive advantage through sustainable green products and services (Chamberlin & Boks, 2018).

Remanufacturing Marketing

Remanufacturing is a routine business activity that helps realize CE benefits. For instance, this approach has gained popularity among corporate leaders and decision-makers. Increasingly more firms are involved in remanufacturing to comply with regulatory requirements and take advantage of this business opportunity to generate a positive influence on the economy (Subramanian et al., 2013). In this regard, remanufacturing is considered an appealing solution for firms to support CE practices. Remanufacturing is considered a strategy that aims to develop circular business models to manage resource loops in the future CE (Jensen et al., 2019). While modern approaches to remanufacturing have existed since the end of World War II, this business model has recently received environmentalists' attention because of its role to slow down materials depletion and reduce CO₂ emissions (Vogtlander et al., 2017). As a critical element of CE, remanufacturing enables organizations to recover the residual value of used products via reusing, refurbishing, and/or replacing components such that the end product is restored to its original state (Y. Wang & Hazen, 2016). From the marketing perspective, remanufacturing systems are becoming increasingly relevant to achieve sustainability objectives (Kalverkamp & Raabe, 2018). To ensure the success of this strategy, marketers need to capitalize on marketing to improve consumers' attitudes towards remanufactured products.

Aided by environmental greening practices and initiatives, the combination of remanufacturing and marketing is concerned with closing the materials use cycle, focusing on value-added recovery, and fostering innovation for the realization of sustainability goals (Kalverkamp & Raabe, 2018). Under competitive environments, remanufacturing can turn into an effective marketing strategy, which enables manufacturing firms to improve their market share via better economic and environmental performance in the supply chain (Alizadeh-Basban & Taleizadeh, 2020). The commitment of organizations to remanufacturing marketing paves the way for an integrated approach that adds value to triple-bottom-line sustainability and profitability (Jensen et al., 2019). In a recent study, Vogtlander et al. (2017) argue that the remanufacturing of products can be used to deliver lower eco-costs of materials depletion and pollution. For remanufacturers, the satisfaction of green consumers represents a marketing opportunity since they are involved in returning cores, repairing, reusing, and purchasing remanufactured products, thereby facilitating the circularity of materials within the supply chain. Moreover, the green knowledge of remanufactured products is valuable for understanding the significance of resource and energy savings and reducing waste and pollution through the manufacturing process (P. Wang & Kuah, 2018). Therefore, remanufacturing, coupled with marketing, can enable organizations to achieve a durable competitive advantage, mainly when competition is high, innovation is relatively slow, and the offered products respond to the concerns of environmentally-conscious consumers (Ozanne et al., 2021).

Product-service Systems

As the concept of CE no longer concentrates on profit maximization or achieving cost efficiencies, organizations may maintain the ownership of their products and offer

product-service systems (PSS). These systems represent an integrated mix of products and services, like repair and maintenance (Ackermann et al., 2018). According to Schallehn et al. (2019), PSS constitutes a well-established concept in sustainability research given its criticality for the sustainable shift from consumption-based markets toward CE-based offerings. The deployment of PSS methodologies is an auspicious pathway for organizations aiming at promoting CE initiatives. When it comes to the role of marketing in supporting circular consumption, it is argued that close communications between an organization and its user or consumer group are fundamental to the success of PSS, especially in the introductory phases of a product or service cycle (Chamberlin & Boks, 2018). A sound basis for the development of PSS marketing strategies could be the notion of customer experience, which is acknowledged as a future marketing technique that is used to realize differentiation in competitive marketplaces (N. Bolton et al., 2014). The combination of marketing and PSS operations strategies concentrates on the after-sales services to keep the product in functional condition for more extended periods. In the CE, reverse flow and end-of-life (EoL) purchase of products is essential as customers may consider the minimization of the expenses with the dispatching and uninstalling of the EoL products (Schallehn et al., 2019b). As a result, the interaction between engineering design and marketing is crucial to inform PPS designers on the necessary aspects to commercialize PPS offerings and meet consumer expectations in terms of economic and environmental feasibility. The combination of marketing and design engineering is fruitful since it may enrich the understanding of the PSS design process. For example, CE businesses can develop marketing strategies that promote and increase awareness of environmentally and socially more acceptable practices by providing consumers with information and presentations about the efficient use of their products (Mont, 2002). Moreover, marketing capabilities, including customer relationship management, customer involvement, and product design and positioning, are the underlying drivers for the development and implementation of a PSS.

Neuromarketing Tools

According to Morin (2011), neuromarketing is an emerging interdisciplinary field that connects consumer behavior with neuroscience. As a new concept in economics, neuromarketing merges multiple disciplines like neuroscience, marketing, and psychology (Lee et al., 2007; Lim, 2018; Ulman et al., 2015). The core notion of neuromarketing is that it depends on sensory stimuli that occur when an individual sees specific visuals. If it is related to the marketing field, visuals in this situation can be the brand, name, and logo of a specific product (Kotsi et al., 2018). Researchers have employed neuroscience to support the brain area localization of the feeling type evoked by the stimuli and the persons' behavioral tendency (Schupp et al., 2003). When the persons carry out the intertemporal choice tasks utilizing functional resonance imaging (fMRI) experiments, the brain region of emotions is driven by immediate monetary rewards (Davidson, 2004), which demonstrates that the immediate consequences could stimulate the emotional brain ideas.

The application of neuromarketing tools allows greater interpretation than conventional survey methods and enables accurate measurement of certain variables. To improve organizational sustainability and accelerate the overall transition toward the CE, neuromarketing tools like eye tracking and electroencephalography have the potential to analyze several aspects of consumer behavior in regard to sustainable consumption (Pagan et al., 2020). With the support of these marketing advances, CE businesses would have the opportunity to understand diverse consumers' emotions, psychological reactions, cognitions, and behaviors. Through neuromarketing methods, current consumer wants, needs, and behaviors can be studied, grasped, and eventually, firms can rely on this information to design relevant products and ads (O'Rourke, 2014). In their recent study, Pagan et al. (2020) argue that neuromarketing has been applied in assessing consumer behavior, advertising effectiveness, and decision-making processes for different kinds of product labels, including green product labels and eco-designs. Using neuromarketing, organizations can improve their product development activities and guide their consumers toward more sustainable product choices and consumption. Neuromarketing methods have the potential to analyze the interaction of the body and human brain in response to green advertising (Martínez-Fiestas et al., 2015).

Beyond product design, neuromarketing techniques can be used in sustainable product marketing (Wandosell et al., 2021), thereby helping marketers enhance their efficiency, effectiveness, and decision-making. While the significant promise of neuromarketing has been met with increasing attention from both scholars and marketers, there is still a need for actionable research within the growing field of CE. Challenges associated with the application of neuromarketing remain unaddressed. For example, the extension and validation of neuromarketing are still hampered by the expensive and time-restricted nature of neuroimaging experiments, the reliance of equipment on artificial laboratory environments, and ethics. Therefore, potential solutions to support neuromarketing in CE without carrying out invasive and intrusive marketing experiments in CE settings are needed.

Research Agenda for Future Research

The concept of CE has spread rapidly to reflect the actions that replace the idea of an end of life for a product by minimizing, recycling and recovering materials in production, distribution, and consumption processes (Kirchherr et al., 2017). The transition from the linear economy to the CE is a challenging task to be tackled. Nevertheless, the growing complexity of materials and products, coupled with the urgent calls for sustainability, has led to the sophistication of the marketing function. The multitude of sustainability-related concepts, including eco-design, waste management, recycling, and remanufacturing, provides an opportunity to rethink how marketing can accelerate the transition toward the CE. In this study, we identify green marketing as a significant contributor to the CE. The efforts to reduce material use, improve environmental sustainability, and conserve scarce resources are among the priorities of green marketing. While the topic of green marketing has been extensively discussed in the CE literature, there is still a need to

examine how green marketing can increase the adoption of CE from the business-to-business perspective. Whether green marketing can increase the profitability of CE business models and drive revenues across circular supply chains remains unknown. Moreover, despite the critical role of remanufacturing in the CE, it is recommended that future research should investigate how marketing can optimize remanufacturing outcomes and improve customer perceptions toward remanufactured products (Govindan et al., 2019). Related to PSSs, future research may look into the marketing capabilities necessary to support the success of PSSs and to trigger higher levels of circularity within supply chain networks. It is also interesting to assess the role of marketing to improve PSS by influencing consumer behavior and increasing their engagement in closing the loop of resource flows. Moreover, the advent of neuromarketing has extended the marketing capabilities of organizations embarking on CE initiatives, clarifying how emotions and unconscious responses influence customer perceptions and decisions. Neuromarketing can also be used by scholars to understand better the resistance that each industrial sector has to the broad implementation of the CE in different cultures with various linear consumption attitudes. What is urgent to understand is the potential of neuromarketing technologies for assessing customer behavior tied to consumption experience in the CE context. Future research, thus, should demonstrate how neuromarketing can guide and optimize the development of better and innovative products that support the CE and respond to customer preferences and judgements.

CONCLUSIONS

This study attempted to investigate the current state of research on the intersection of CE and marketing by carrying out a systematic literature review on selected publications. In total, forty-five (45) studies were thoroughly analyzed for this purpose. The review findings indicate that the CE is an emerging concept that is insufficiently studied from the marketing perspective. Furthermore, the review focused on identifying the research methods adopted in the selected studies. The use of empirical methods dominates the current discussions on the CE and marketing, providing insight into the implementation of CE strategies within organizations and the supporting role of marketing for CE business models. Empirical methods were mainly represented by surveys and case studies; they were used to examine consumers' expectations and willingness to engage in sustainable consumption. Research tendencies for the CE-marketing nexus were derived and classified into four main categories: (1) contribution of green marketing to CE, (2) remanufacturing marketing, (3) product-service systems, and (4) neuromarketing tools. The majority of studies suggest that green marketing represents one building block of CE, helping organizations incorporate pollution and waste measures into the process and product design.

From the theoretical perspective, this paper investigates the existing literature on the CE and marketing. It also identified several thematic categories related to the literature and performs a novel categorization of existing studies based on these categories. Furthermore, this paper represents one of the first attempts to investigate the convergence

of the CE and marketing. Both concepts are emerging topics in the literature. By means of several marketing efforts, the transition towards the CE can be facilitated. Also, from the theoretical perspective, this work suggests many potential research directions, which will be highly insightful for researchers who devoted their attention to the CE and marketing. From the managerial perspective, practitioners can utilize this review to determine how marketing can benefit the CE initiative and promote sustainability. The existing contributions will enable marketers to inspire novel solutions and applications in their organizations to achieve competitive advantages and transit to the CE paradigm. For instance, firms can capitalize on marketing capabilities to reduce waste, foster sustainability, and assure accountability for their CE initiatives. The review findings can guide managers on how to leverage green marketing, remanufacturing marketing, product-service systems, and neuromarketing tools to increase operational efficiencies and realize sustainability objectives. Developing marketing capabilities to manage CE activities efficiently is essential to guarantee the successful synergy of marketing and the CE.

Despite being the first study to investigate the CE-marketing nexus, our study is not without limitations. The selection of Scopus and Web of Science databases might neglect studies that might be relevant to the scope of this review. Therefore, future reviews may consider the use of additional databases such as Google Scholar to include more additional studies non-indexed in Scopus and Web of Science. The review findings are limited to the handful of selected articles; therefore, the theoretical arguments drawn here should be tested and validated with other research methods such as expert interviews and surveys.

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