

The Consumer's Role in the Transition to the Circular Economy: A State of the Art Based on a SLR with Bibliometric Analysis

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Abstract: Implementing the Circular Economy (CE) is largely a mirage. There are some political decisions translated into penalties and/or incentives to try to adjust the “optimal” level of circularity. The consumer’s desire to purchase circular products, given the increase in price associated with them, and the sum of associated fines and penalties, generates complex financial equations, which become unfavorable to the transition to the CE. CE-friendly solutions in use are associated with situations in which circularity contributes to lower production costs. The authors are committed to altering the course of events. They believe that the success of this transition will have the will of the consumer as its main vector. To this end, they launched an investigation that leads to clues on how, by identifying barriers, facilitators, and motivations, proposals for solutions that are focused on the consumer are designed. The research project started by surveying and systematically analyzing the existing published information, in order to reach the State of the Art. The path taken involved a systematic review of the literature and the consequent bibliometric analysis, fulfilling a methodology whose steps are not innovative, but whose relationship/sequencing of the same is insufficiently treated in the literature. As the most relevant results of the application of the proposed methodology to the subject under analysis, in addition to the recognition of a set of significant and guiding texts, explored as graphically as possible, the identification of relevant sub-themes stands out, as well as the framing of opportunities for future investigations. With this investigation, we conclude that the consumer is not the trigger for the transition from the linear economy to the CE.



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Keywords: circular economy; consumer behavior; customer requirements; literature review; SLR; sustainability; systematic literature review

1. Introduction

The fundamental objective of this article is to present the State of the Art (SOTA) regarding the transition from linear economy to CE, focusing on the role played by the consumer.

The transition from the linear economy to the CE is increasingly imperative given the scarcity of virgin resources we face today, as well as the growing excess of waste with no apparent solution, but some countries are close, others are far away, and each starts from a different point, but all have a distance to go [1]. This is clearly a path towards sustainability, in which there are already authors [2] investigating tools to measure the path taken by some of these companies. This transition to CE has several possible paths, the most obvious being to make it a response to consumer desires, thus becoming yet another requirement for the quality of goods or services purchased, and assuming it as being a cultural imperative or society’s legislature.

Many authors note that consumers are not receptive to CE themes, and that their preferences fall on other criteria, one of the most predominant being the reduction in acquisition costs [3], not being, however, adverse to the theme itself. This finding, associated with the high costs of production and marketing of circular products, generates a lack of consumer interest, consequently creating barriers to the implementation of CE.

With the investigation to be carried out, it is intended to take stock of the consumer's role in this transition, and to ascertain to what extent the available bibliography corroborates the expectation that the consumer can be the driving force behind the transition to CE, assuming it as one of your requirements and one of the criteria for your purchase decision. As a preliminary point of this work, an analysis was made of the existing literature reviews on this subject, which combined the theme of CE and consumer behavior. Thus, a survey of literature reviews that had been published before the end of 2021 was carried out to understand whether the subject in question, the subject of analysis, and the publication of articles had already been reviewed. A search was carried out in the Scopus database, joining the terms Circular Economy, Consumer, and Literature Review as research topics. After this research, some systematic reviews of the literature were found [4–11], but none were found that negated the need to carry out this work.

The CE theme is a recent one, receiving more attention from researchers since 2019 (it should be noted that the average age of all articles is less than 24 months). It was considered that systematic review articles from 2016 [4] and 2018 [12] would be excluded due to their antiquity. The remaining articles, despite combining the two intended criteria—Circular Economy and consumer—are articles that specify sectors of activity in particular, and therefore bias the analysis that is intended to be carried out. The nature of this research is centered on Small and Medium Enterprises (SMEs) in a cross-sectoral way.

Thus, articles from the specific sector of bioenergy [5], coffee capsules [6], fashion [7], food [8], the supply chain [9], textiles [10], and the inverted supply chain for waste collection [11]. Most of the articles found were published in the journal, *Sustainability*, from the MDPI group.

Therefore, we consider that the cited articles do not eliminate the need for a new literature review nor one that addresses consumer behavior in relation to CE.

This article will present the reader with a brief introduction to the topic, followed by Section 2, which presents the methodology applied in the SLR carried out. The third chapter is dedicated to Results and Discussion, where a quantitative analysis of the results obtained in the SLR is carried out; the reader is also presented with the state of the art and the authors created sub-themes within the topic under analysis. Finally, conclusions about this investigation are presented.

The SLR carried out will, without any doubt, bring an approach to investigations on the topic of the EC in which the role of the consumer is analyzed as a trigger for the process of implementing the CE in the business world. This topic becomes relevant given that in the majority of existing research, as we analyze in the following chapters, the consumer is not at the center of existing research in the CE, but rather companies, which play a central role in the vast majority of studies carried out.

In this SLR, we can see that CE is not yet a consumer requirement, with the circularity process being very late at this specific point; that is, the consumer does not play a central role on the path to circularity.

2. Methods and Materials

SOTA, a designation that prevailed for a long time, seems to have lost some protagonism with the emergence of the most recent Bibliometric Analysis (BA) and Systematic Literature Review (SLR), designations that largely replaced it in the titles of publications that review the literature existing on a particular topic.

In our opinion, the most ambitious objective of a literature review continues to be the identification of the most relevant and guiding publications in each area, whose careful analysis allows the establishment of an enlightened situation regarding the past and a duly grounded prospective view of the future, anchoring both in the present moment, that is, the SOTA. What BA and SLR really added was a set of processes and standardized forms of representation that could help structure and enrich literature reviews [13], thus contributing to more successful and comparable SOTAs.

Figure 1 lists SLR, BA, and SOTA, discretizes and sequences the steps involved, identifying the most significant feedback, and indicates the support tools typologies for the different phases of the process. In our particular case, the Global Literature Review tool was StArt [14], the Systematic Literature Review tool was PRISMA [15] (see Supplementary Materials), the Bibliographic References Management tool was Zotero [16], the Bibliometric Networks Constructing and Visualizing tool was VOSviewer [17], the Qualitative Data Analysis tool was NVivo [18], and the Quantitative Data Analysis tool was SPSS [19]. Although the referred tools coincide in some of the functionalities they present, at each stage of the process, an attempt has always been made to use the most appropriate one. Note that for each of the functionalities in question, there are several other tools available on the market.



Figure 1. Methodological flow chart for a state of the art based on a systematic literature review with bibliometric analysis.

For the collection of existing publications, the main databases of scientific articles were used, with Scopus, which covers around 87 million articles, commonly referred to as the most complete on this topic; the Web of Science, which covers about 86 million articles; and Science Direct, which covers about 19 million articles.

3. Results and Discussion

3.1. Quantitative Results

3.1.1. Systematic Literature Review

Given that if we carry out a search with the term Circular Economy, in the title, abstract, and keywords, in the three aforementioned databases, we obtain a result of 100,682 articles, making it impossible to analyze all these articles, criteria were created for filter to make this work feasible. Thus, after selecting the databases, some searches were carried out, only in Scopus, to understand who the most cited authors were, and to find those who were considered to be the most appropriate search keywords, and it was also defined that this search would be carried out in the title of the article, in the abstract, and in the keywords. The sets of terms used were “Circular Economy”, “Values”, and “Customer”; “Circular Economy” + barriers (with the filter “environmental Science”); “Circular Economy” + input-output analysis; “Circular Economy” + Portugal; User-Centered Design + “Circular Economy”; “Circular Economy” + World results (with the filter “Business, Management and Accounting”); Remanufacturing + “Circular Economy” + consumer; “Clean production” + ecology; “Circular products”; Circular Economy + Neuromarketing.

The subsequent steps carried out along the SLR, which made it possible to narrow down the articles that emerged from the research carried out, are shown in Figure 2.

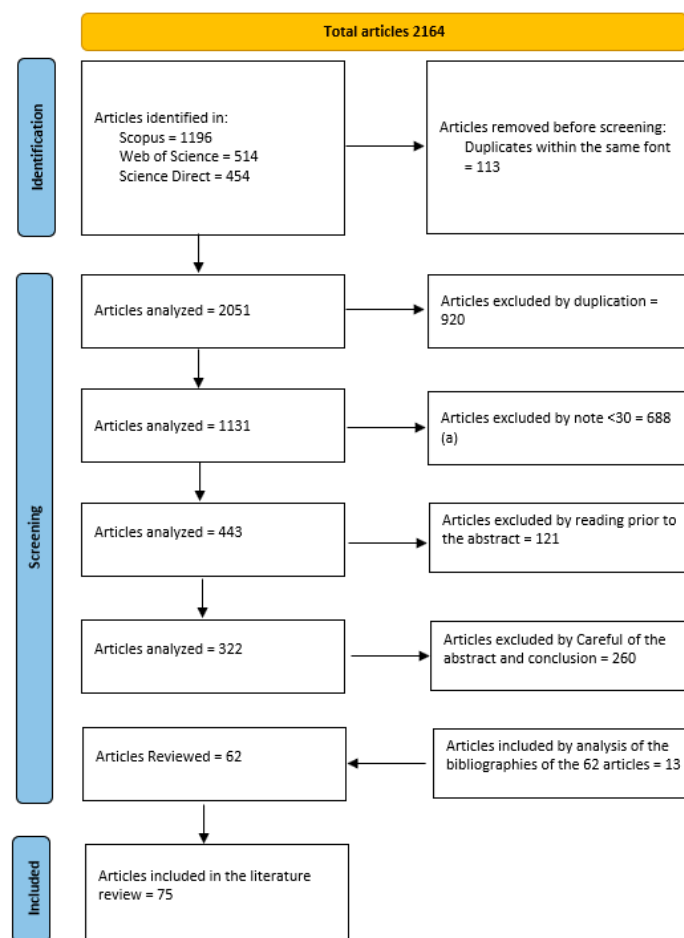


Figure 2. SLR Prism Flowchart performed. (a) Excluded by automatic selection in StArt based on a score of less than 30. The words “customer”, “behavior”, and “consumer” counted 10 points if they were in the title, 5 points if they were in the abstract, and 10 points if they were in the keywords.

After filtering the repetitions within the same database, 2164 results were obtained, which were inserted into the StArt. It should be noted that in this first phase, the criterion was also used as a filter, to consult only open access articles.

The second step consists of sorting the articles from each database and considering the high number of words used in their searches, subtracting the repeated ones. This operation allowed us to purge 113 articles.

The third stage is intended to eliminate the repeated articles collected in the different databases. As a premise of this stage, and just because the data were first collected in the Scopus database, it was considered that the duplicates would be eliminated first from the Web of Science and then from Science Direct. With this step, 920 duplicate articles were eliminated.

The fourth step was performed automatically by the StArt 3.3 software, and consisted of creating an automatic filter in which only the articles with the highest scores were selected. The attribution of the grade consisted of scoring the number of times that each of the search keywords initially selected appear in the article, with points being attributed for each time they appear, 10 points if it is in the title, 5 points if it is in the abstract, and 10 points if it is in the keywords of the article. Only articles with a score equal to or more than 30 points were included; thus, 688 articles were excluded.

At this point, the qualitative analysis work began, and the selection of texts began to be carried out by reading the abstracts, and 121 articles were excluded because they were

out of context with the theme in question. Subsequently, the abstracts and conclusions were read to filter the articles that are aligned with the theme whose investigation is being carried out. After reading the abstracts and conclusions, 260 articles were removed, leaving only 62 articles selected for further, careful, and detailed analysis.

The last stage of the selection process of articles in the SLR was then carried out. It involved an analysis of the bibliography of the 62 selected articles, analyzing only the titles, reading the abstract and its conclusion, and including 13 more articles for the totality of texts to be analyzed, thus totaling 75 articles. The 13 articles that were added all have a consumer theme, unfolding the themes into consumer perception [20,21], consumer intentions [22–25], and consumer attitudes [26–30].

3.1.2. Bibliometric Analysis

For the 75 articles that SLR allowed us to select, the theme, in general, is very current, and many authors have published on this subject, so the list of selected articles is quite recent, being mostly less than 5 years old, as we can see in Figure 3.

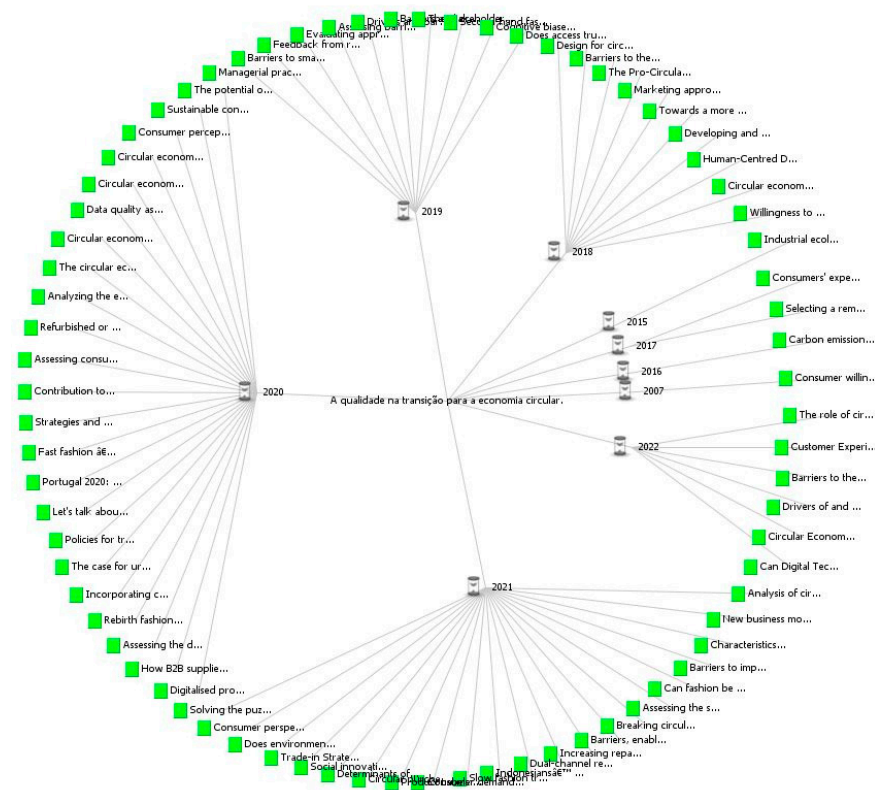


Figure 3. Years of publication of the articles.

Of the 75 selected articles, we were able to see that some international journals currently stand out on this topic, namely, *Sustainability*, *Journal of Cleaner Production*, and *Resources, Conservation and Recycling*, where about half of the selected articles come from, as we can see in Figure 4. The *Sustainability* magazine has been on the market since 2009, is edited by Elsevier, and in 2021 obtained a Cite Score of 5.0 allowing it to reach the 86th percentile. The *Journal of Cleaner Production* has been on the market since 1993, is also edited by Elsevier, obtained a Cite Score of 15.8 in 2021, and reached the 98th percentile. Finally, *Resources, Conservation and Recycling* has been on the market since 1988, is also published by Elsevier, obtained a Cite Score of 17.9 in 2021, and reached the 99th percentile.

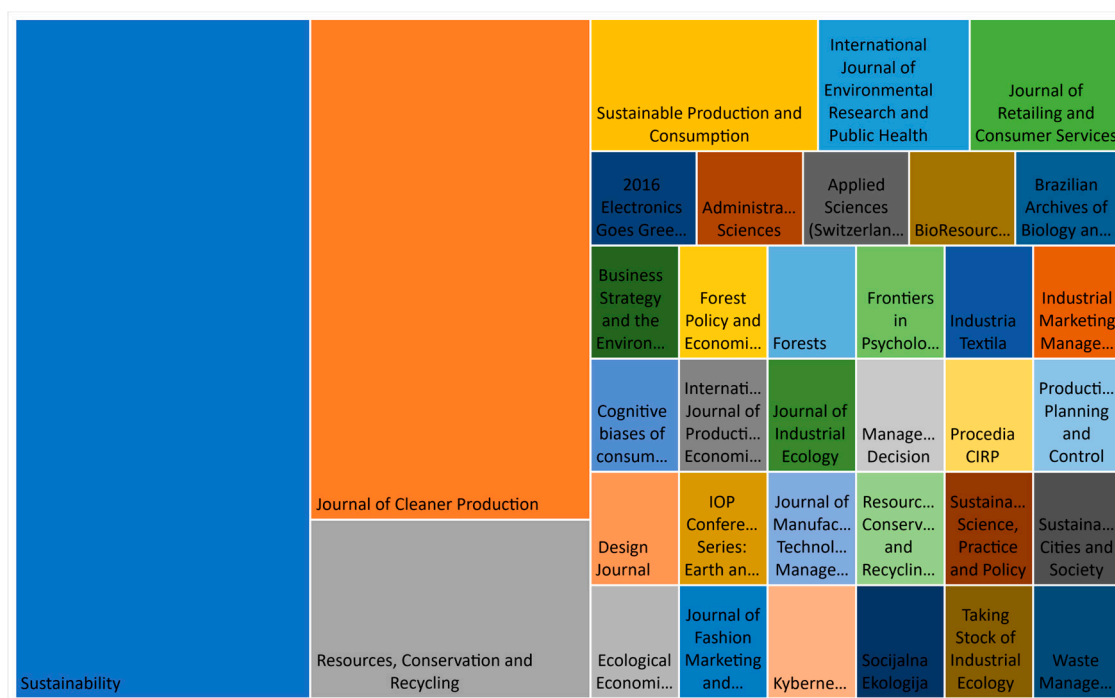


Figure 4. Journal of publication of selected articles.

Having arrived at this set of selected articles, we decided to research which words were most used in these articles, using the NVivo 1.7.1 software and creating a word cloud. The criteria used were searching in all the articles, throughout the text, the 250 most-used words. Having obtained the results, we proceeded to clean up the words that were inappropriate and that do not make any sense in this analysis, maintaining the initial value of 250 most-repeated words. From the analysis of the word cloud of all the articles analyzed, we were unable to obtain any other search keywords that we considered relevant and that had been neglected in our analysis, as we can see in Figure 5.



Figure 5. Word cloud.

Subsequently, and using VOSviewer 1.6.19, an occurrence map of text data was created, to find out which connections exist between words, thus trying to establish a connection between these words. In the analysis carried out with VOSviewer, we were able to determine that the consumer was one of the predominant themes in our research, as intended, being mainly related to the themes CE, reuse, and product, as we can see in Figure 6.

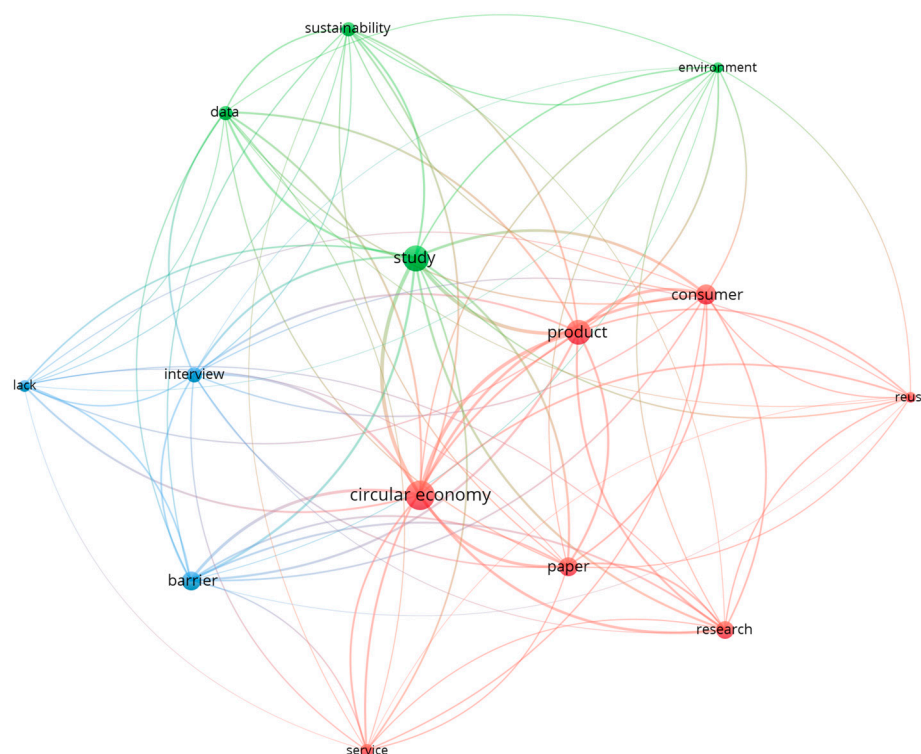


Figure 6. Text Data Occurrence Map.

3.2. State of the Art

3.2.1. Main Findings

Several authors consider that the consumer is generally uninformed about what EC actually is and what its benefits and impacts are, leading them to move away from products or services that favor these practices [20,31–33]; some authors even defend the importance of marketing actions to educate and inform consumers [34]. Some authors argue that an ecolabel that manages to communicate the attributes to the consumer would be an effective solution [35–37].

Companies that implement certification systems now have internal tools to increase customer satisfaction or to stimulate customer behavior; however, the customer does not seem to be the central focus in the certification decision of companies [38], with other factors being used that lead to these certifications, which are related to cost reductions and efficiency increases.

There are several authors who address the issue of digitization as a CE practice; however, consumers' digital confidence in this solution is limited in use, and it brought the process of buying products from EL closer to the solutions presented by products from CE [39,40].

According to several authors, the consumer has a low environmental concern and will not pay more for green products or services, although is willing to solve environmental problems and may be willing to buy green products, so long as the green products work similarly to non-green products in terms of quality, price, durability, and ease of use [29,41–43].

Regarding sustainable products, the low prices of virgin materials do not help the implementation of CE [44]; however, the existing offers tend to be out of sync [45] largely because existing research on the theme relates to the supply side and not the demand

side [33]. The ways of associating the highest quality perceived by consumers is a way of getting consumers to accept what they consider good CE practices, but they accept them for the increase in quality and the increase in confidence in the product [22,46].

Product packaging has a high weight in the consumer's perception of the product itself [26], and its design means that packaging waste is not properly separated and sorted. Packaging waste and the environment has become a very emotional subject, accelerated by the influence of the media, providing consumers with incorrect information, and shaping their knowledge and attitudes toward plastic packaging materials [47]. It was found that, in general, the refillable packaging approach has been well received by consumers [48].

It is necessary to develop access-based product service systems that are better able to compete with products that consumers like to own; thus, it is imperative that companies rethink the format of products and services that they offer to their customers [39]. However, according to several authors, the economic impact on the consumer remains the main factor for him to accept this type of offer [49–52].

Both industry and consumers agree that better product quality is a starting point for increasing product shelf life [53]; however, the reduced price of new products discourages consumers from taking this approach [54]. Price continues to be the consumer choice factor for this option [28,53,55,56]. The inferior characteristics perceived by consumers in used products lead to their being neglected [57]. Consumer expectations regarding the lifetime of products vary and there is no adjusted survey of these consumer expectations; moreover, warranties and the guarantee of repair and the existence of replacement parts influence consumer perception [58–60].

The positive affective experience that arises after the purchase is often for sustainable and ethical reasons, although what initially brought them to the store may be selfish reasons, such as a cheaper price [56,61,62]. The level of consumer acceptance is low, being perceived as less reliable regarding low-quality products [21]. It should be noted that the size of the product to be recycled, according to some authors, interferes with recycling behavior, whereby a car at the end of its life is delivered to a scrapping center, while a can of soda will more easily become residual waste on the roadside instead of being recycled [63].

About remanufactured products, the consumer's choice for this type of offer lies once again in the price [64,65]. The lack of interest in this type of product is based on the consumer's lack of knowledge and misinformation about this topic [66]. The industry has tried to influence the consumer's decision through other attributes such as design [67], quality [68], durability [69], and product certification [70]. Price as a decision factor can be influenced by offering subsidies for the purchase of this type of article [71] or by increasing the price of new products while keeping remanufactured products at lower prices [25].

3.2.2. Sub-Themes: Proposal and Validation

Based on the analysis of the abstracts of the 1131 articles obtained during the SLR after excluding duplications (see Figure 2), an attempt was made to identify how much attention the subject was given in each of them. In the end, the list of subjects listed amounted to 49. Subsequently, considering the level of similarity between several of the subjects listed and the reduced number of articles associated with some of them, a critical reflection was conducted that led to the reduction of the list of subjects to just 9, which came to be designated as sub-themes [72], and whose latest version is shown in Figure 7.

More recently, the authors tried to validate the previously obtained list of sub-themes, having carried out a new search in the Scopus database, which had proved to be predominant throughout the investigation conducted. With the expressions “circular economy” and “consumer” present in the title, abstract, or keywords, 1840 articles were found. For each of the sub-themes in question, three more expressions were added (presented below, in the text), requiring that at least two of them be present in the title, abstract, or keywords. The various sets of three expressions used resulted from the knowledge and sensitivity accumulated over the previous stages of the investigation.

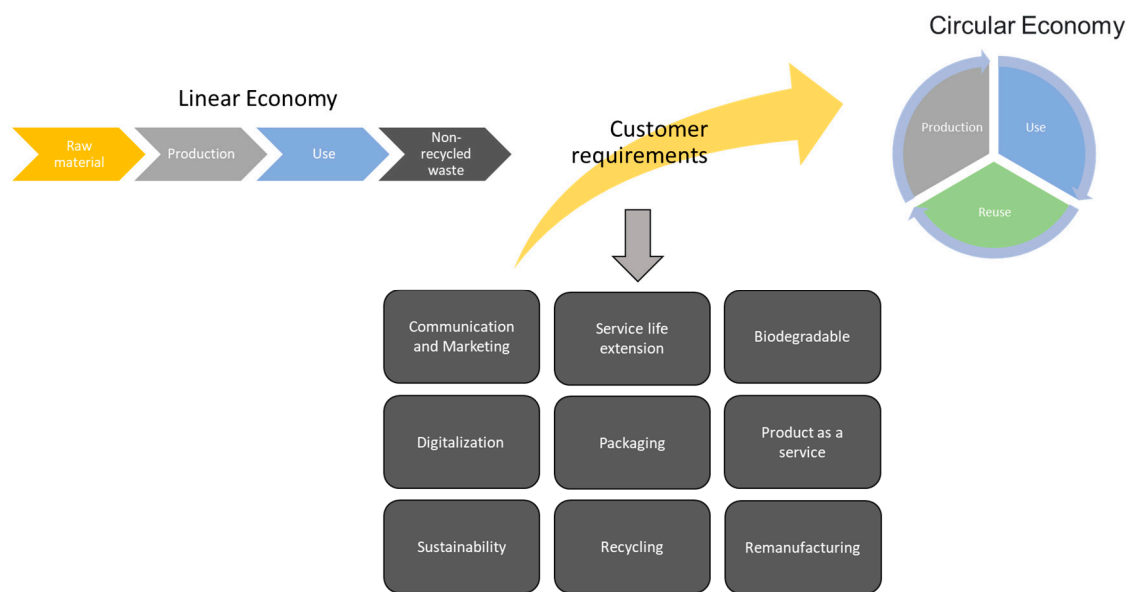


Figure 7. Sub-themes found within the main theme investigated—adapted from [72].

Then, the results obtained for each of the nine sub-themes are analyzed separately, concluding with an overall balance.

Communication and Marketing

Regarding this sub-theme, the search words, Communication, Marketing, and Ecolabel, were considered, being mandatory that there be two of the three search words, as previously mentioned. As can be seen in Figure 8, there has been an increase in the number of published articles regarding this sub-theme, with a decrease only in 2022. Business, Management, and Accounting.

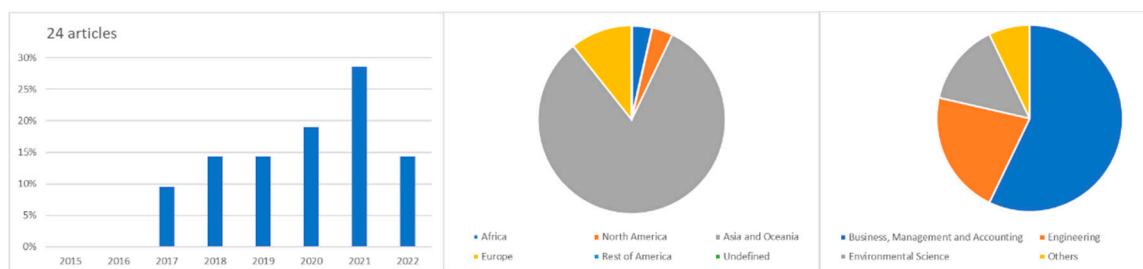


Figure 8. New search for articles in the Communication and Marketing subtopic.

Communication and marketing is the tool that transmits to consumers the attributes of a product or service, being one of the main factors for the customer's choice for a particular product or service. Marketing must communicate and meet what the customer's requirements are. In the implementation of EC, marketing is a tool that informs the customer, usually uninformed, about the circularity of a product or service. According to the authors in [31], products are acquired primarily by design, followed by the mission of social responsibility and quality, with CE not being a decision motive. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [20,31,33,34,36–38,73].

Digitalization

Regarding this sub-theme, the search words, Technology, Internet of Things, and 4.0, were considered. As can be seen in Figure 9, there has been an increase in the number of

articles published in relation to this sub-theme, and a predominance in the origin affiliation of the authors—Europe.

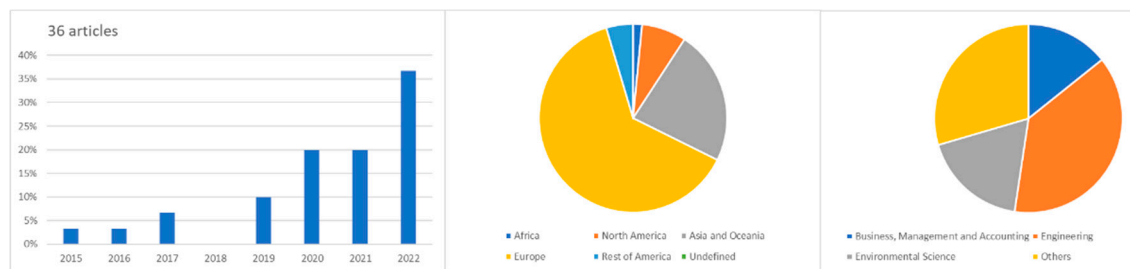


Figure 9. New search for articles in the Digitalization subtopic.

Digitization is one of the solutions that lead to CE, either through the replacement of products or services by digital solutions in which the product or service is dematerialized, or the combination of digitization platforms that allow reducing the impact, leading to more circular product solutions or services. According to the authors in [74], the inconvenience of digitalization is the barrier that digital tools can face more effectively: digitalization has transformed the way we buy recycled or remanufactured products and made it more like buying new products. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [39,40].

Biodegradable

Regarding this sub-theme, the search words, Green Products, Environment, and Biodegradable, were considered. As can be seen in Figure 10, regarding this subtopic, articles have only been published since 2019, there is a predominance in the origin affiliation of the authors—Europe—and the thematic area of the articles—Engineering.

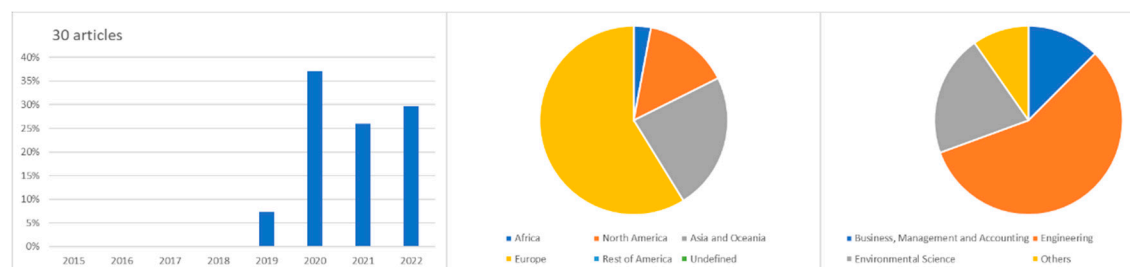


Figure 10. New search for articles in Biodegradable subtopic.

Biodegradable or environmentally friendly products are one of the solutions presented to implement a business model that respects EC principles, and there is widespread confusion between EC and biodegradable products. Consumers are willing to solve environmental problems and may be willing to buy green products if green products work similarly to non-green products in terms of quality, price, durability, and ease of use [41]. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [29,42,43].

Sustainability

Regarding this sub-theme, the search words, Sustainability, Future generations, and Resources, were considered. As can be seen in Figure 11, there has been an increase in the number of articles published in relation to this subtopic, and there is a predominance in the origin and affiliation of the authors—Europe—and in the thematic area of the articles—Engineering.

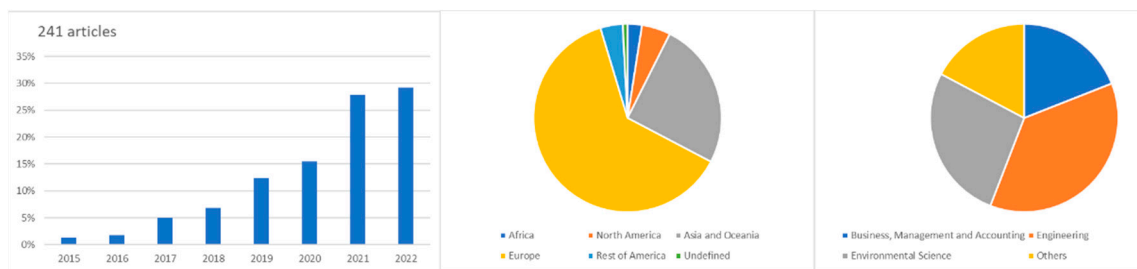


Figure 11. New search for articles in Sustainability subtopic.

Sustainability is in itself a global objective, reinforcing the relevance of CE implementation. However, according to most of the analyzed articles, the option for sustainable consumption is not one of the requirements of consumers. The option for sustainable consumption is not one of the requirements of consumers, and the low prices of virgin materials favor linear products, resulting in a lack of interest and awareness of consumers about EC products, causing hesitation in companies that keep them operating in a linear system [44]. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [22,33,45,46].

Packaging

Regarding this sub-theme, the search words, Packaging, Waste, and Plastic free, were considered. As can be seen in Figure 12, there has been a marked growth in the number of articles published in relation to this subtopic, and there is a predominance in the origin affiliation of the authors—Europe—and of the thematic area of the articles—Engineering.

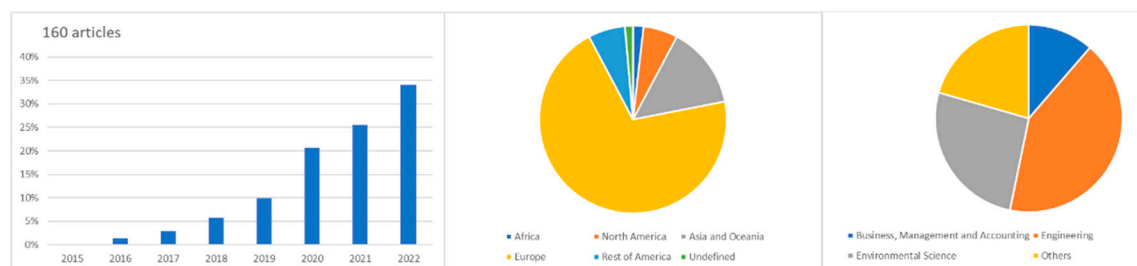


Figure 12. New search for articles in Packaging subtopic.

According to the authors in [26], product packaging has a high weight in the consumer's perception of the product itself and has a high weight in the circularity of the product. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [47,48].

Product Service System

Regarding this sub-theme, the search words, Product, Service, and Ownership, were considered. As can be seen in Figure 13, there has been a sharp growth in the number of articles published in recent years about this sub-theme, having had a decrease in 2022, and there is a predominance in the origin affiliation of the authors—Europe—and of the thematic area of the articles—Engineering.

One of the aspects of EC is clearly that of the product as a service, leaving the consumer to be the owner of the product and becoming a user, exclusive or shared. This formula is effective from a CE and sustainability point of view, reducing the consumption of goods and benefiting sustainability. Financial aspects are of great relevance for creating the customer experience in the product as a service, related to used products [52], so it is not possible to dissociate the financial aspect from the customer's requirement by CE. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [39,50,51].

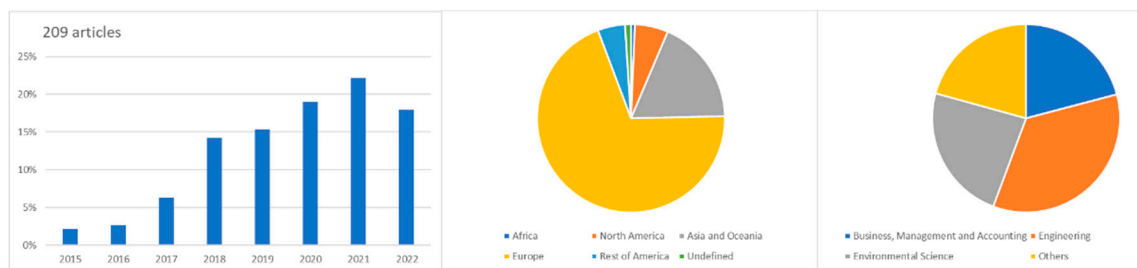


Figure 13. New search for articles in the Product Service System subtopic.

Extend End of Life

Regarding this sub-theme, the search words, Repair, Used, and Spare parts, were considered. As can be seen in Figure 14, there has been a sharp growth in the number of articles published in recent years regarding this sub-theme, and there is a predominance in the origin of the authors' affiliation—Europe—and from the thematic area of the articles—Engineering.

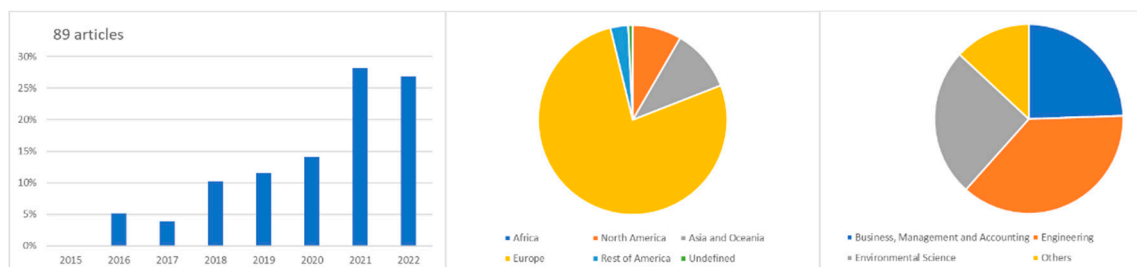


Figure 14. New search for articles in the Extend end of life subtopic.

Extending the shelf life of products is one of the most efficient ways to implement CE to reduce the consumption of products by consumers. However, price remains the consumer's choice factor for this option. Both industry and consumers agree that better product quality is a starting point for extending product life, which will also increase motivation and the number of profitable repairs. The main barrier to extending the useful life of products is the consistently low price of new products, and often their low quality, which contributes to the low profitability of repair work for companies and to the low motivation of consumers for this option [54]. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [28,55–60].

Recycling

Regarding this sub-theme, the search words, Recycling, Reuse, and End of life, were considered. As can be seen in Figure 15, regarding this subtopic, there has been a sharp growth in the number of articles published in recent years, and there is a predominance in the origin affiliation of the authors—Europe—and of the thematic area of the articles—Engineering.

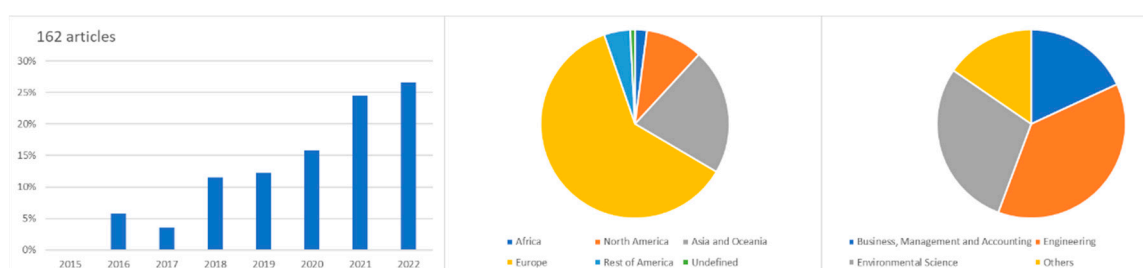


Figure 15. New search for articles in the Recycling subtopic.

Recycling is the process of converting waste into raw materials or products with potential for use, thus making it possible to reduce the consumption of virgin raw materials and pollution. Although this theme is already widely publicized and debated, its practices are not always in a desirable quantity, and consumers still have some barriers regarding their use. The dimension of the product to be recycled, according to some authors, interferes with the recycling behavior, whereby an end-of-life car is delivered to a scrapping facility, while a soda can will more easily become residual waste on the side of a road instead of being recycled [63]. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [21,56,61,62].

Remanufacturing

Regarding this sub-theme, the search words, Remanufactured, Refurbished, and Remanufacturing, were considered. As can be seen in Figure 16, there has been a sharp growth in the number of articles published in recent years in relation to this sub-topic, and there is a predominance in the origin affiliation of the authors—Asia and Oceania and Europe—and of the thematic area of the articles—Engineering.

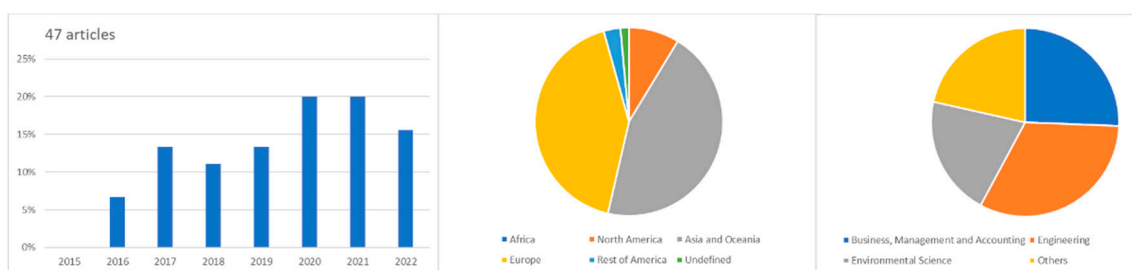


Figure 16. New search for articles in the Remanufacturing subtopic.

One of the ways to implement CE is the remanufacturing of products, thus reducing the consumption of new products. The option for these products is made by consumers for reasons that differ from their requirements by the EC, with the lowest price being one of the variables that prevails at the time of the decision. One of the main challenges for remanufactured products lies in the need to signal to customers that they are as good as new [68]. In addition to the reference mentioned above, the following articles were cataloged as belonging to this sub-theme [25,64–67,69–71].

General Balance

The sum of the articles associated with each of the sub-themes makes 998, registering only 212 repetitions. The intersection between sub-themes is, therefore, small, validating the conviction of the desirable independence between them.

Of the nine sub-themes in question, four stand out: Refillable packaging, Product as a service, Sustainability, and Recycling. Together, they obtain 77% of the articles, with a natural and expected emphasis on Sustainability (24%). Even the least represented subtopic, Communication and Marketing, is relevant, with 24 associated articles.

About 90% of the articles were published in the last 8 years, and 73% in the last 4 years, confirming the enormous relevance of the general theme under investigation.

Geographically, Europe is largely in the lead, with 64% of published articles, confirming an expected dominance, but not necessarily positive for a cause that is intended to be “universal”. Next are Asia and Oceania (22%).

Of the articles identified, 37% are connoted with Engineering, 25% with the Environment, and 19% with Management, which may come as a surprise.

Finally, the preponderance of two editorial supports is highlighted, the *Journal of Cleaner Production*, present in the top 3 in eight of the sub-themes and leader in six of them, and *Sustainability*, present in the top 3 in seven of the sub-themes and leader in two of them.

3.2.3. Future Research

From the research carried out and presented here, little research was found that is centered on the consumer; the majority is centered either on companies or on barriers or policies to accelerate the CE implementation process. Although the benefits promoted by solutions that include CE are widely discussed, there is little consideration for the variables that influence Consumer Acceptance of such solutions and CE-oriented value propositions [50].

It should be noted that the regenerative aspect of CE (minimizing the use of natural resources) is not effectively measured by customers or suppliers, unlike economic value, so environmental value is more of an intuitive or intuitively perceived issue [68].

Based on existing research on the Theory of Planned Behavior, Persuasive Communication, and human values, the hypothesis is that these tools, when combined in a framework, could identify, change, and maintain pro-circular behaviors. However, there are few existing studies on this subject [75].

Past efforts that only consider people's rationality and conscious logic are not enough to understand how purchase decisions, consumption, and human behavior are processed. Thus, the use of neuromarketing tools brings countless possibilities, as they can contribute to a better awareness of the adoption of green technologies and sustainability in organizations and their stakeholders, can help to understand how to increase emotional involvement and what really motivates people to make certain decisions in a context of sustainability and the need for a CE and, thus, through marketing mix activities, lead people and organizations to a more sustainable world [76].

It is our belief that it is necessary to investigate whether the CE can become a consumer requirement, serving as a trigger for the implementation of these practices by companies in general, and more importantly, whether the consumer is willing to pay any price increase to ensure the implementation of the CE.

4. Conclusions

From the SLR carried out, we are able to discern that the CE is not yet one of the consumer's requirements. However, it is possible to perceive that for the majority of authors, CE is an imperative of society, given environmental concerns, and is beginning to be an imperative of industry, given the scarcity of resources. However, the consumer decides based on factors other than CE, weighing much more in his decision, for example, price, quality, design, and factors such as durability [7]. Associated with the sale price of the products, there is a higher cost to industry to produce solutions that respect the CE than to produce with virgin materials [3]. The lack of consumer interest leads to the implementation of EC-related practices being driven by economic and non-environmentally conscious behaviors [44,77,78]. The lack of pressure and market demand are serious obstacles to the implementation of CE, where most of the public does not care much about protecting the environment. Although many people claim to care about it, their behavior shows that littering is common in many parts of the world [79,80].

However, small segments of customers interested in circular products are starting to appear, regardless of the higher price, contrary to the majority, which remains mainly motivated by low prices [73], some due to sustainability issues, others due to innovation and design of the products offered [81], and others for the relationship between luxury and sustainability [23,82].

According to [27], cognitive bias can be defined as a systematic error in human decision making that stems from heuristics, mental shortcuts, and rules of thumb that limit the need for effective information processing, eventually leading to mistakes in decision making. We conceptualize that cognitive bias plays an important role in the non-acceptance of circular business models. Consumer behavior is difficult to adjust, and this affects the potential success of any circular business model. Whether or not a particular type of circular business model succeeds depends on a myriad of subtle and often subconscious human behaviors that can be perceived from multiple psychological,

sociological, and cultural perspectives. Furthermore, we are using cognitive biases as a unifying factor that can create barriers to the transition to a CE [24]. There are also several authors who argue that the implementation of good EC practices can be achieved through legal impositions, subsidies, and society as a whole. According to [83], cooperation between government, academia, and the private sector, based on the principles and tools of industrial ecology, has been able to significantly improve the management performance of waste since the end of the 1990s, making the sector an important player in the green economy, by combining better environmental performance with economic growth and job creation, critical dimensions to enable sustainable development. A new proposal for a theoretical approach considers sustainable territorial development as a five-dimensional concept, which should contribute to supporting a CE, socio-environmental awareness, environmental conservation, sustainability of global governance, and sustainability of global spatial planning [38]. Some companies perceive CE as an opportunity to retain their customers, as it has the potential to attract new customers and strengthen or improve their relationships with existing customers [84]. Consumers have demonstrated a high level of awareness of the value of sustainability and have demanded that organizations implement it in general. Government investments in subsidy plans, which underpin tax breaks across different sectors, are having real impacts on organizations. This finding can be used to encourage policy makers to continue to build support for SMEs' transition to sustainability [85]. Although most decision makers in organizations have positive intentions to implement plastic recycling best practices, most organizations seem to be failing to implement them. This intention-behavior gap is mainly due to existing barriers to recycling [86].

From the investigation carried out, the initial step of a broader process in progress, the verification of a weak current disposition of the consumer to assume the CE as a requirement to be paid does not weaken our conviction that the future and the new generations that it brings will make the consumer a relevant lever in the affirmation of an effective CE. Moreover, it is thought to have contributed both to the clarification of promising keywords to be used in new research, and to the identification of active and relevant authors in the matter in question. Finally, the nine proposed sub-themes intend to be a valid, albeit not definitive, contribution to the structuring of future investigations, analyses, and discussions.

This SLR allows us to investigate the research that has been carried out over time on the relationship between the consumer and the implementation of the CE. In this way, it will be possible to extrapolate about the CE accelerators and the real position of the consumer regarding the topic in question.

This SLR's strong point is that it was based on an extensive search of articles, with transversal keywords to be able to include a wider spectrum of articles; however, given that the topic in question has had exponential growth in articles, it will need to be updated in a short period of time.

In this research, we can see that very little has been investigated from the point of view of the consumer and their preferences. There is space to investigate which consumer preferences are related to CE, what consumer behaviors are, and what leads consumers to make decisions for items that respect circularity. And, finally, to understand what perception SMEs have for that which is requested by their customers in terms of circularity.

As a conclusion of this SLR, the consumer's general lack of interest in CE stands out, with CE not being a consumer requirement. Therefore, most people are not willing to pay more for their products or services to comply with circularity.

Supplementary Materials: The supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su152015040/s1>.

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