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# Consumer protection and sustainable development: key green research areas

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## Abstract

Motivation: Consumers are an important link in the socio-economic system. In the literature, there is a noticeable increase in interest on the part of researchers in shaping consumer attitudes and behaviour in various markets, including the issue of pro-environmental attitudes and behaviour. In the context of contemporary transformations and challenges of sustainable development, the importance of solutions aimed at providing consumers with adequate protection against a variety of unfair market practices misleading consumers on the issue of green products and services is growing. The motivation for undertaking this research was the need to highlight the complexity of green issues around consumer protection and, at the same time, to address them from a sustainability perspective. This can be an important step in discussing and setting further research directions in this area.

**Aim:** The aim of this article is to identify key green research areas undertaken around consumer protection issues while addressing them from a sustainable development perspective. The implementation of this objective consisted of a literature review of the subject listed in the Scopus database and the Web of Science database. The methods adopted were a Structured Literature Review with original Q1-Q4 queries and a Classic Literature Review.

**Results:** In economic reality, it can be observed that an increasing number of economic actors are offering products and services that are labelled green. They support the transformation of the current economy toward a green economy. However, the analyses show that consumers are increasingly confronted with the phenomenon of greenwashing. This requires the creation of new solutions to protect consumers against such unfair practices. The results of the considerations undertaken show the interdisciplinary character of the undertaken considerations around the issue of consumer protection in the field of greenwashing. They may form the basis for further in-depth research on the issue of consumer protection in an economy focused on sustainable development (especially in consumer decisions to purchase green goods and services). Furthermore, the authors note that in the future it would be advisable to conduct sectoral research aimed at assessing and identifying practices that are oriented towards consumer protection and, at the same time support the transformation towards a green economy (e.g., in the financial sector).

**Keywords:** consumer protection; green consumer; green economy; green products and services; sustainable development

**JEL:** D18; 044; Q56; Q57

## **1. Introduction**

Consumers play a very important role in socio-economic life. Through their consumption decisions, they influence, among other things, the state and quality of the environment (Chuah & Lu, 2019). Therefore, growing interest in the issue of environmentally oriented consumer attitudes and behaviour, which are called sustainable (Antonides, 2017; Elhoushy & Jang, 2023; Trudel, 2018), pro-environmental (Gainsburg et al., 2023; Majumder et al., 2023), or green (Sinha & Annamdevula, 2023; Trong Nguyen et al., 2023), can be observed in the scientific literature. Furthermore, the attention of researchers is increasingly focused on the issue of ensuring adequate consumer protection in the context of the new challenges arising from the implementation of sustainable development in socio-economic life (Shymon et al., 2021). The indicated studies are based on mechanisms related to the protection of consumer rights in both in individual countries and in a much broader area context (Best et al., 2019; Leary, 2019; Syurikpayeva et al., 2021). These studies often concern individual product and service markets. Therefore, it is necessary to indicate here, for example, scientific considerations focused on the issue of consumer behaviour patterns aimed at sustainable development in the food market

(Garcia-Garcia et al., 2017; Lencucha & Thow, 2020; Siraj et al., 2022), or the problem of identifying key challenges to ensure consumer protection in the market for financial products and services (Colaert, 2022; Morgan, 2022; Vergara & Agudo, 2021).

Ensuring adequate consumer protection is dictated by an imbalance between the consumer and the provider of a product or service in terms of access to information, knowledge, or expertise. The problem may be exacerbated when the provider of the product or service prevents or impedes the consumer's access to complete and clearly formulated information. This situation may result in the consumer not being able to make the right choices for himself/herself, i.e., choices that are, for example, in line with his/her pro-environmental convictions. Furthermore, the authors of this article recognise that the current dynamic development of science is overtaking solutions aimed at consumer protection. Increasingly, the consumer who wants to act pro-environmentally encounters the term green in the context of various products and services and, at the same time is not sufficiently protected against unfair practices in this matter. Getting to know the green issues created around consumer protection issues is therefore an important step for the discussion around the problems that arise in this area both from the perspective of researchers and consumers. Therefore, the aim of this article is to identify the key green research areas undertaken around consumer protection issues while addressing them from a sustainable development perspective.

The article is divided into five sections, which are interrelated and aim to address the research objective set. The first section introduces the nature and complexity of the research problem and identifies the aim of the research. The second section, in turn, presents a review of the literature related to the topic under discussion. The research methodology is described in the third section. An important element of the presented methodology is the indication and detailed description of the different stages of the research. The research methods are also indicated here. The fourth section describes the results obtained from the qualitative analyses carried out. A discussion is also undertaken here by indicating research areas that are, in the opinion of the authors of this article, important and which are already developing dynamically or will be. Therefore, this section may be useful for researchers to observe the interdisciplinarity of consumer protection issues and different green research areas. The final section of the article is devoted to the conclusions.

## **2. Literature review**

In everyday socio-economic reality, one can see more and more implemented solutions aimed at the green transformation of the economy. The indicated aspect undoubtedly, in the opinion of the authors of this article, translates into an increase in interest of the scientific community in the indicated area. Therefore, at least in the scientific literature, there is a wide spectrum of studies referring to the issue of sustainable consumption (Issock et al., 2023; Thakur et al., 2023; Vidal-Ayuso et al., 2023), or outright green consumption (Peattie, 2010; Risitano et al., 2023;

Shehawy, 2023). One can see that this is undoubtedly an interdisciplinary research area, which is also recognised by numerous researchers (Huang et al., 2022; Zhao et al., 2020). One of the research areas addressed in this area is the issue of shaping green consumer awareness (Dai et al., 2017; Hong & Guo, 2019; Suki, 2013). Furthermore, it is also worth noting considerations aimed at identifying the role of individual socio-demographic variables characterising consumers in the process of shaping sustainable consumption (Ibok & George, 2014; Lazaric et al., 2020). For example, Mohr & Schlich (2016) analysed which socio-demographic variables influence the sustainable consumption of food products among consumers in Germany. In studies focussing on the issue of sustainable consumption, researchers also address the broader issue of consumer lifestyles (Aydın & Ünal, 2016; Lubowiecki-Vikuk et al., 2021; Matharu et al., 2021), which can influence the pace of the ongoing green transformation of the economy. In such targeted studies, it is even possible to encounter the phrase green lifestyle directly (Mohd Suki, 2016; Zheng et al., 2023).

A concept juxtaposed by researchers with the issue of sustainable consumption is also fair trade (Bhavsar et al., 2021; Canova et al., 2023; Connolly & Shaw, 2006). In the context of the issue of consumer protection in a sustainable economy, special attention should also be paid to issues devoted to corporate social responsibility and the need to eliminate unfair business practices (Beckers, 2017; Mihajlovic, 2020; Vítová, 2022). Around the issue of unfair practices related to the green transformation of the economy, scientific considerations focus on the problem of nondisclosure of full information in the reporting of corporate performance and the phenomenon of greenwashing (Bothello et al., 2023; Gatti et al., 2019). Such actions can cause a loss of confidence among consumers in the validity of sustainability-oriented actions (Parguel et al., 2011), with a consequent negative impact on the bottom line. On the other hand, behave in a fair manner towards the recipients of products and/or services can be an important factor in gaining a competitive advantage in an economy undergoing a green transition. Hence, as the authors of this article note, clear green communication strategies about the products and services offered should be implemented in business entities (Hur & Faragher-Siddall, 2022; Testa et al., 2011).

Due to the ongoing digitalisation and globalisation of many markets for goods and services, the consumer is gaining more and more choice. Therefore, the issue of the safety of purchases made through online channels is not insignificant in the context of consumer issues related to sustainability (Abdul-Rahim et al., 2022; Tsai & Yeh, 2010). The challenges of ensuring consumer protection in the modern product market are recognised by policy makers at both national and international levels (Busch & Mak, 2021; Izaguerri Vila, 2020; Mak & Terryn, 2020). In this context, the importance of empowering consumers in the market through better information and education, which can influence the ability to make informed choices, is particularly highlighted (Malady, 2017; Süle, 2012). This aspect is very important, especially since the consumer increasingly has a choice also in his purchases between traditional and green products and financial services (Brühl, 2022; Gáspár et al.,

Zhang et al., 2022). All the issues cited above underline the already indicated interdisciplinary nature of the considerations undertaken around the issue of consumer protection regarding sustainability issues. At the same time, it is important to note the increasingly frequent appearance of various green terms for individual products and services offered by economic operators, which also further complicates the issue of consumer protection in the market. The complexity of the indicated issue will be discussed in the context of the discussion undertaken around the results of the analysis undertaken.

### 3. Methods

To achieve the research objective, a bibliographic analysis of scientific publications collected in two multidisciplinary scientific databases was carried out. These were the Scopus database and the Web of Science database. The main rationale for choosing these databases is the fact that, due to the procedures involved in indexing individual journals in them, they are considered by many researchers to be a reliable and quality source of information for conducting bibliometric analyses (Haba et al., 2023; Kozar & Sulich, 2023). In addition, it can be pointed out that the literature emphasises that the results of bibliometric analyses obtained between these databases may differ (Popescu et al., 2022), so combining data from these databases with appropriate research procedures (e.g., paying attention to repetition between databases of scientific publications) may lead to more comprehensive results. This positive indication of the quality of the data analysed is also a limiting aspect of the study, as a significant number of scientific journals, and especially new scientific journals in which articles relevant to the research topic in question may be published, may not yet be indexed in these databases.

In terms of the research procedure carried out, three main research stages were identified (Figure 1). The conceptualisation of the study constituted the first stage of the research. During this stage, the literature related to consumer protection in the context of sustainable development was reviewed in general to identify a current and still little explored research area. As a result, a research gap was observed in the form of the need to identify key green research aspects addressed in the academic literature on consumer protection. To realise the research direction outlined in this way, a Structured Literature Review (SLR) method was chosen, which allows the identification of a given research problem based on scientific studies in a synthetic and reproducible manner. Therefore, research queries to the Scopus and Web of Science databases were constructed by the authors of this article to generate scientific articles and conference proceedings for bibliometric analyses.

In the second stage of the research, four sets of results were extracted based on the queries formulated, which are presented in Table 1. The queries presented have a syntax corresponding to the databases in the scope of which they were used. Hence, it is possible to see within them the operators specific to these databases, which must be applied to generate the desired set of scientific papers. The queries presented in Table 1 were designed to search the Scopus database and the Web of Science database

for the titles of the indexed publications and their abstracts. As the next stage of the study analysed the content of entire scientific articles and conference proceedings, it was assumed that only articles written in English would be considered. Furthermore, because the study is being conducted during 2023, only scientific papers published in scientific journals up to the end of 2022 were considered (inclusion of full-year periods in the analyses for the possibility of repetition and subsequent comparison by other researchers). The use of two different queries to two different scientific databases necessitated a procedure to remove duplicate scientific publications for further analyses. Hence, 89 unique scientific publications were finally qualified for the next stage of the study.

The final stage of the research, presented in Figure 1, began with a content analysis of the scientific publications selected for analysis to identify studies in which the authors refer to different areas of green research when discussing consumer protection from a sustainable development perspective. The Classical Literature Review (CLR) method was used for this review. As a result, a combination of research methods (triangulation) contributed to the identification of a final database of 23 publications for further in-depth analysis based on the CLR method.

## 4. Results

In the 23 scientific publications selected for analysis, a total of 84 different original green authorial words/phrases were identified, which will be identified as green research areas in the following argument. The number of such areas identified within each scientific publication varied, which is also shown in Figure 2. The highest number of such research areas per scientific publication was 20 (Vergara & Agudo, 2021), while the lowest was only 1 (Burgehelea & Aceleanu, 2014; Chasovschi et al., 2016; Gazzola et al., 2017; Kurz, 2015; Terryn, 2019; Voinea et al., 2016). Each of the green research areas identified based on the in-depth content analysis of scientific publications was assigned exclusively to one of the following seven categories: consumer, economy, enterprise, environmental claims, finance, marketing, and product. This mapping is authoritative, with the aim of ensuring transparency in the presentation of the results obtained and in the discussion. The same quality objectives contributed to the fact that in Figures 2-9 the individual publications have been labelled with their authors (in the case of more than two authors, the name of one author is given with the addition of et al.).

The consumer category included 10 different green research areas, which were directly related to the consumer in the market (Figure 3). The largest number of researchers in the analysed scientific publications referred to the issue of the increasingly observed consumer category in the market as green consumers (Kindylidi & Cabral, 2021; Mak & Terryn, 2020), also known as green-oriented consumers (Vergara & Agudo, 2021). A very important research area here is the exploration of the prerequisites that condition the transformation of the consumer into a green consumer. Therefore, research is increasingly concerned with identifying the reasons for green behaviour and the choices made by consumers

(Akenji, 2014; Danish et al., 2019; Niedermeier et al., 2021).

The next category indicated in Figure 2 comprises a set of different concepts and economic issues. As shown in Figure 4, some researchers addressing the issue of consumer protection in the category of sustainability have referred to the issue of the green transition of the current economy (Casarosa, 2022; Kindylidi & Cabral, 2021; Marcatajo, 2022), that is, the gradual move away from the brown economy to achieve a green economy state. This transition is supported by the implementation of various sustainable development goals, e.g., those set out in Agenda 2030 (Department of Economic and Social Affairs of United Nation, 2022). The issue of building a green market for products and services (Nguyen et al., 2023), in which the consumer would be adequately protected, plays an important role in this process. Also, a significant number of researchers draw attention to the issue of so-called green growth, a situation in which economic growth and development are pursued, while at the same time preventing environmental degradation, loss of biodiversity, and unsustainable use of natural resources (OECD, 2010). Green growth understood in this way represents a kind of pathway towards a green economy.

In turn, as shown in Figure 5 in the enterprise category, green research areas directly related to the issue of the functioning of green enterprises were assigned. Within the scope of the analysed scientific publications, the most frequent discussion was around the issue of implementing green technologies (Vergara & Agudo, 2021). These are such technological solutions, which contribute to minimising the negative impact of the operation of business on the environment. Furthermore, the issue of green management and the implementation of various types of green practices in business entities (Hu et al., 2019; Kovilage, 2021), which is increasingly being raised more and more widely in the scientific literature. These practices may concern various areas of market functioning of a given economic entity, e.g., production, distribution of manufactured products. Therefore, the issue of greening the supply chain is increasingly being pointed out (Sujatha & Uma Maheswari, 2023; Zhu et al., 2023). The authors of this article recognise that with the increasing environmental awareness of society, consumers are increasingly paying attention not only to how the product was manufactured but also how it reached them (e.g., the issue of the carbon footprint of the product from producer to consumer). Thus, this research area will undoubtedly be increasingly addressed in scientific studies and the question of the consumer's right to know about this issue will be increasingly raised.

The increase in consumer interest in green products and services means that market players competing for customers are increasingly seeking to present their products in the so-called green light. Hence, an increase can be observed in various types of green claims about various products or services. Some of such claims turn out to be false and thus should be categorised as unfair practices. It should also be noted that within the issue of consumer protection in a sustainability-oriented economy, the problem of protection against the so-called greenwashing phenomenon is increasingly being raised (Klp & Shoduo, 2023; Marcatajo, 2023). As shown in Figure 6, this problem was discussed very often and extensively in the analysed scientific articles. Developing effective solutions to protect consumers from

greenwashing will be a challenge for decades to come. Dealing effectively with these unfair practices is an important issue in the green transformation of the current economy. Thus, research in this area should not only be aimed at identifying effective methods of identifying greenwashing practices but should above all lead to the development of effective solutions aimed at protecting consumers against such unfair practices. Such solutions should be designed to be an effective deterrent to those who seek to mislead the green consumer. At the same time, these solutions should be realistic and implementable by decision-makers.

Figure 7, on the other hand, shows the issues raised in the analysed scientific articles, which were assigned to the category of finance. It should be noted that this category includes, among others, instruments aimed at providing financial support for green transformation projects (e.g., green bonds). Furthermore, the role of green public procurement (Bucea-Manea-Țoniș et al., 2020; Halonen, 2021; Wang et al., 2021) identified in the analyses undertaken should not be underestimated, which, when properly implemented in public entities, can support the creation of new green businesses, as well as the further development of green companies already operating in the market. Consumers should be aware of the different types of financial solutions that are designed to develop the green economy. However, also regarding existing or newly emerging green financial services, unfair practices should not occur. As the authors of this article recognise, the green financial market and related instruments are increasingly becoming the subject of scientific inquiry by researchers. This area should therefore be considered as one of the key areas for future interdisciplinary research, as it includes not only specific green financial services but also, *inter alia*, research on green awareness of financial services among consumers or research on the green competence of sellers of individual green financial services.

Nowadays, it can be seen more and more often that pro-environmental issues are communicated in advertisements for various types of products or services (Lima et al., 2023; Santa & Drews, 2023). Therefore, in the scientific literature, the issue of green marketing activities has become an important area of interest in the context of consumer protection in an economy focused on sustainable development (Liu et al., 2023), which is also confirmed by the analyses of selected scientific publications (Figure 8). Such activities should be free from greenwashing and be understandable to potential consumers. They can take the form of green marketing strategies (Bertelli, 2021; Yuningsih & Silaningsih, 2019). In addition to official channels for the provision of information on the environmental properties of products and services, information provided by the so-called 'word-of-mouth' is also important (Ahmed et al., 2023; Román-Augusto et al., 2023; Vergara & Agudo, 2021). In the opinion of the authors of this article, the emerging future direction of research in the above-mentioned area will be green marketing strategies and their impact on building competitive advantage in the market by the economic entities that apply them. It will also be important to conduct research on whether economic entities conduct appropriate green communication with potential consumers, considering their different degree of environmental awareness and intergenerational differences



in approach to pro-environmental issues.

In the last category, the green research areas identified in the analysed scientific publications related to the issue of green products/services and their green characteristics are indicated (Figure 9). Nowadays, more and more products and services are referred to as green (Bravo et al., 2022; He & Wang, 2023; Ogiemwonyi & Jan, 2023). However, with technological development and increasing environmental awareness, there is a constant redefinition of what we can call a green product or service. Furthermore, one can encounter different, co-existing rating systems to determine whether a product or service can be called green or not. Thus, it may be the case that one classification may indicate a green product/service to the consumer, but not to another. These aspects of the green attribution issue present significant challenges for both researchers and consumers.

Providing comprehensive product information to the consumer on the label is also an important aspect in terms of protecting consumer rights (Figure 9). However, it is important to note that the issue of green products goes significantly beyond the informational capacity of the label. In the opinion of the authors of this article, research will increasingly go beyond the mere aspect of producing a given product in a green way. Increasingly, the issue of appropriate working conditions and remuneration of the workers who produced the product will be raised. The analysis may also include the issue of green jobs. Hence, as information becomes available on production conditions, the boundary for calling a product or service green will change. Thus, in the future, it will be increasingly possible to observe in scientific research a shift away from single-factor analyses (usually through the prism of whether a product is eco-friendly) to multifactor analyses assessing a product/service in terms of its green character.

## 5. Conclusions

The CLR and SLR methods were used in the study. Exploration of the Scopus and Web of Science databases made it possible to identify and group the green research areas appearing in the scientific publications selected for analysis. In addition, the triangulation of the research methods used allowed us to show the complexity of consumer protection issues in the context of sustainable development.

The analyses carried out demonstrate the need to develop effective solutions aimed at protecting consumers in the gradual process of green transformation of the economy. The phenomenon of greenwashing is of particular concern. In the opinion of the authors of this article, this phenomenon may not only contribute to misleading potential consumers by suggesting that a given product has been manufactured in compliance with pro-ecological standards, but it also negatively affects the very process of greening the economy. By purchasing non-green products, the green consumer does not support the development of a green economy, despite his or her pro-environmental convictions. The consumer's right to express his or her convictions through well-defined market behaviour is thus undoubtedly violated here. In the scientific field, on the other hand, greenwashing may lead to

overestimation of individual processes towards sustainability. Hence, there is a noticeable need for those working on sustainability issues in the scientific field not only to be mindful of the existence of such phenomena but also to continue to make appropriate efforts to develop their competences in this area.

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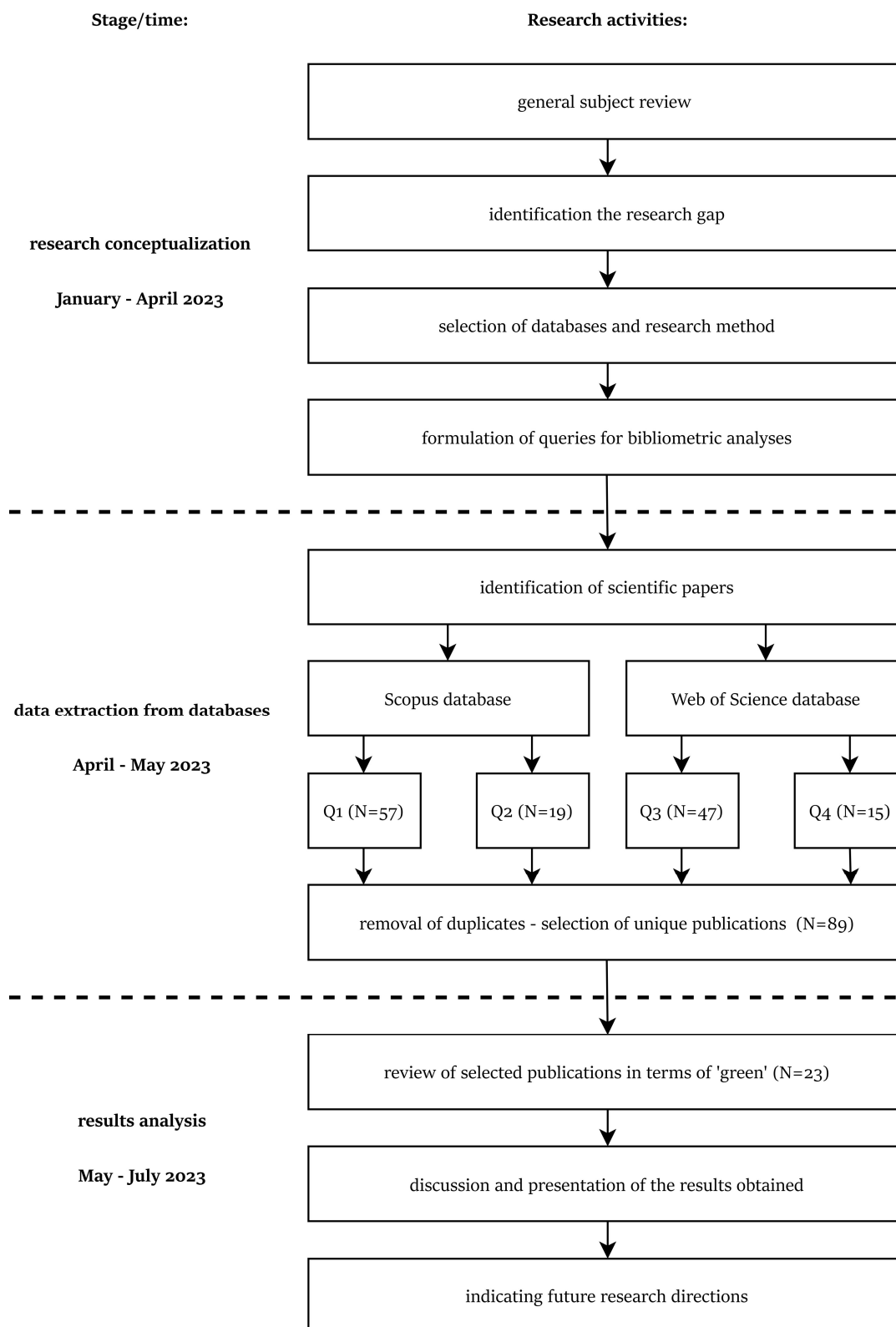
**Author contributions:** authors have given an approval to the final version of the article. Authors contributed to this work as follows: E.J.K. and M.P. developed the concept and designed the study, E.J.K. collected the data, E.J.K. analysed and interpreted the data, E.J.K. and M.P. prepared the draft of the article, E.J.K. and M.P. revised the article critically for important intellectual content.

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## Appendix

Figure 1.  
Stages of the research procedure and timeline



Source: Own preparation.

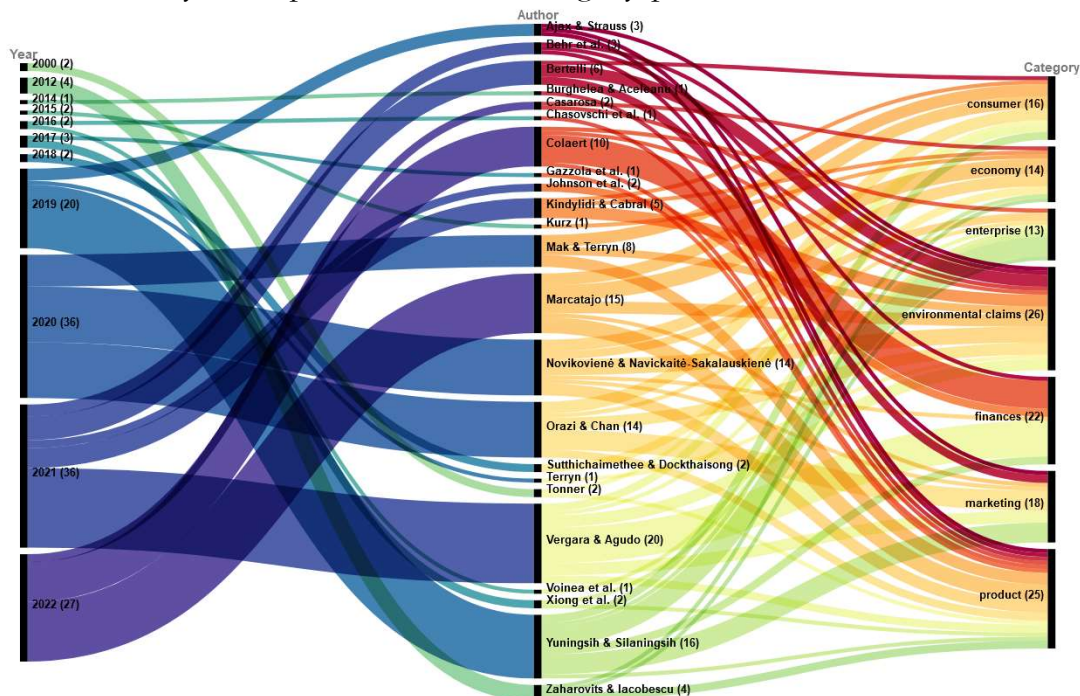
Table 1.  
Search queries syntax details

Database	Symbol	Query syntax	No. results
Scopus	Q1	TITLE-ABS ("consumer protection*") AND (sustainability OR "sustainable development") AND (EXCLUDE (PUBYEAR, 2023)) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j") OR LIMIT-TO (SRCTYPE, "p"))	57
Scopus	Q2	TITLE-ABS ("consumer protection*" AND green) AND (LIMIT-TO (SRCTYPE, "j") OR LIMIT-TO (SRCTYPE, "p")) AND (EXCLUDE (PUBYEAR, 2023)) AND (LIMIT-TO (LANGUAGE, "English"))	19
Web of Science	Q3	((SO="consumer protection" OR AB="consumer protection") AND (SO=sustainability OR AB=sustainability OR AB="sustainable development" OR SO="sustainable development")) exclude publication year: 2023; refine languages: English	47
Web of Science	Q4	((SO="consumer protection" OR AB="consumer protection") AND (SO=green OR AB=green)) exclude publication year: 2023; refine languages: English	15

Source: Own preparation.

Figure 2.

Number of identified green research areas in analysed scientific publications with allocation to year of publication and category procedure and timeline

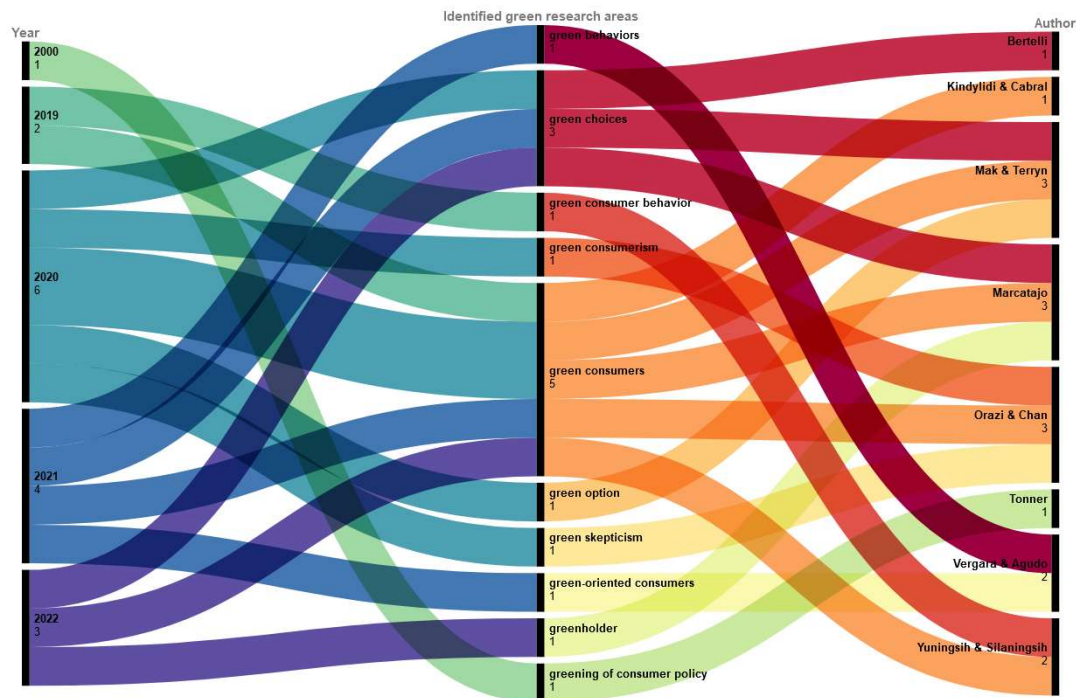


Source: Own preparation using the RAWGraphs 2.0 beta based on (Ajay & Strauss, 2019; Behr et al., 2021; Bertelli, 2021; Burghilea & Aceleanu, 2014; Casarosa, 2022;

Chasovschi et al., 2016; Colaert, 2022; Gazzola et al., 2017; Johnson et al., 2021; Kindylidi & Cabral, 2021; Kurz, 2015; Mak & Terry, 2020; Marcatajo, 2022; Novikovienė & Navickaitė-Sakalauskienė, 2020; Orazi & Chan, 2020; Sutthichaimethee & Dockthaisong, 2018; Terry, 2019; Tonner, 2000; Vergara & Agudo, 2021; Voinea et al., 2016; Xiong et al., 2017; Yuningsih & Silaningsih, 2019; Zaharovits & Iacobescu, 2012).

Figure 3.

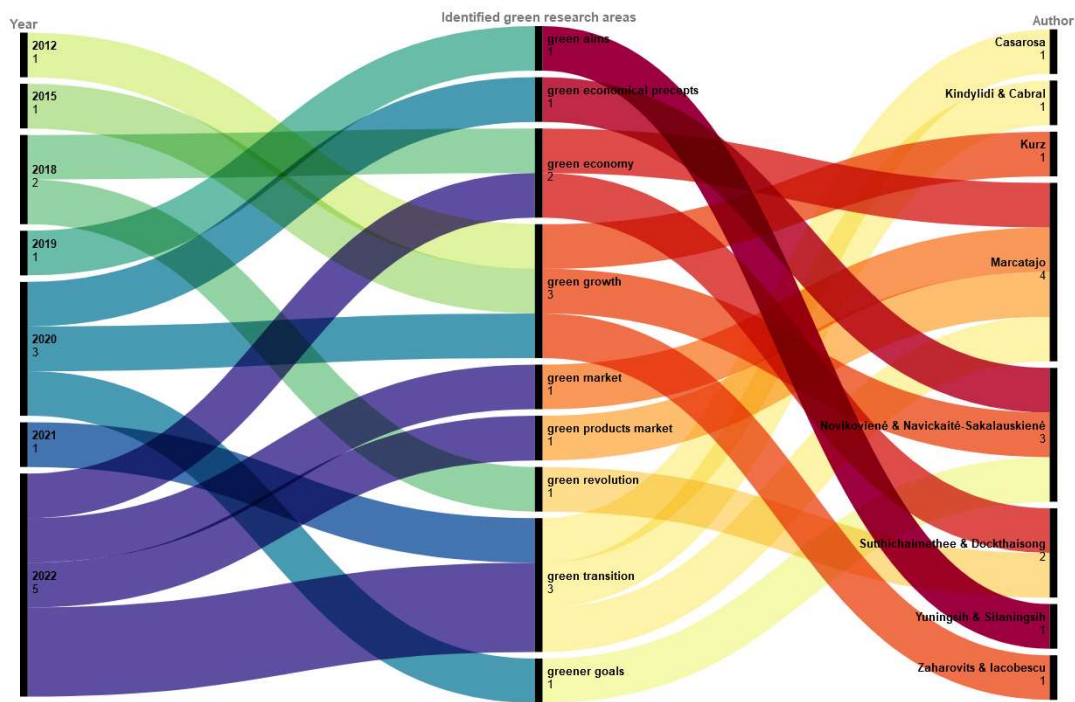
Identification of green research areas addressed in the consumer category by year of publication and scientific publications analysed



Source: As mentioned above.

Figure 4.

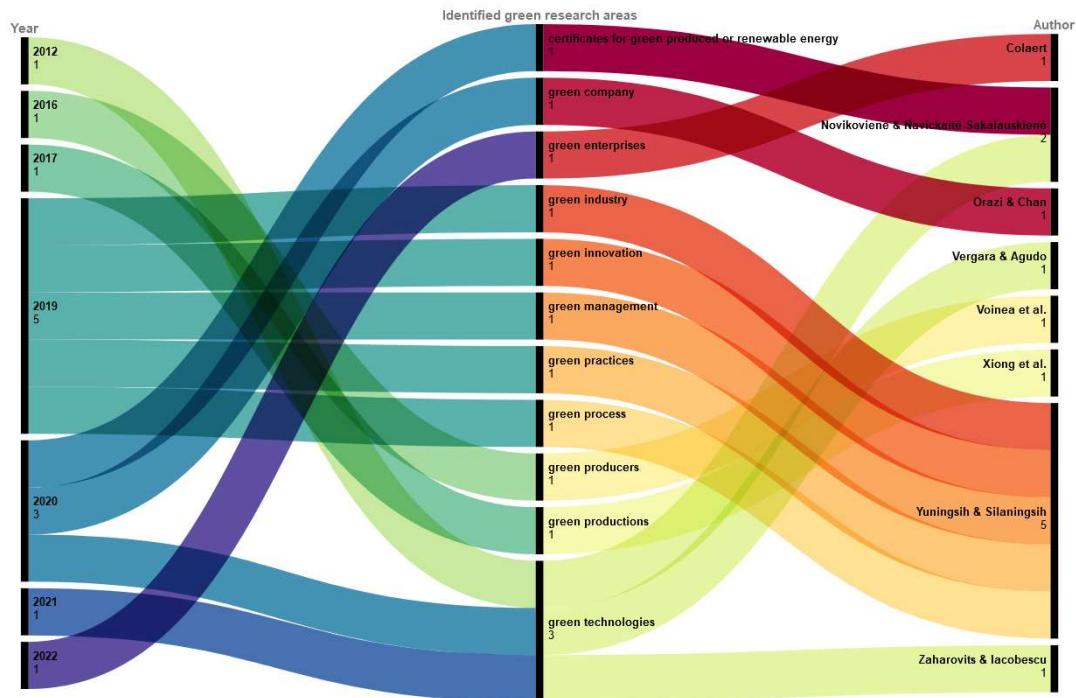
Identification of green research areas addressed in the economy category by year of publication and scientific publications analysed



Source: As mentioned above.

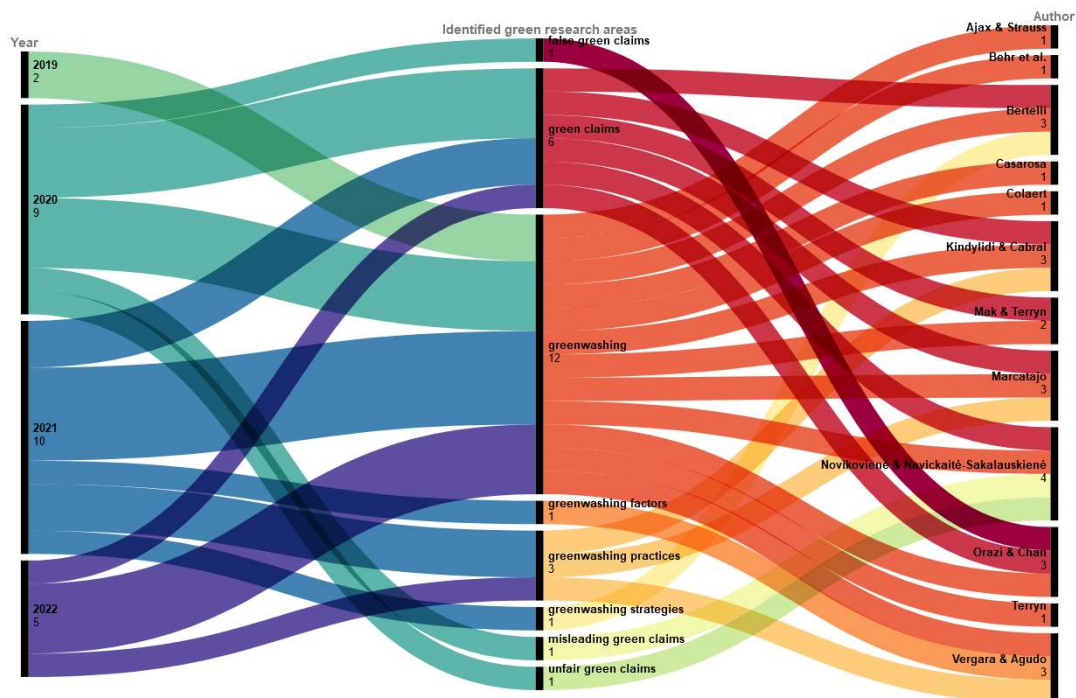
Figure 5.

Identification of green research areas addressed in the enterprise category by year of publication and scientific publications analysed



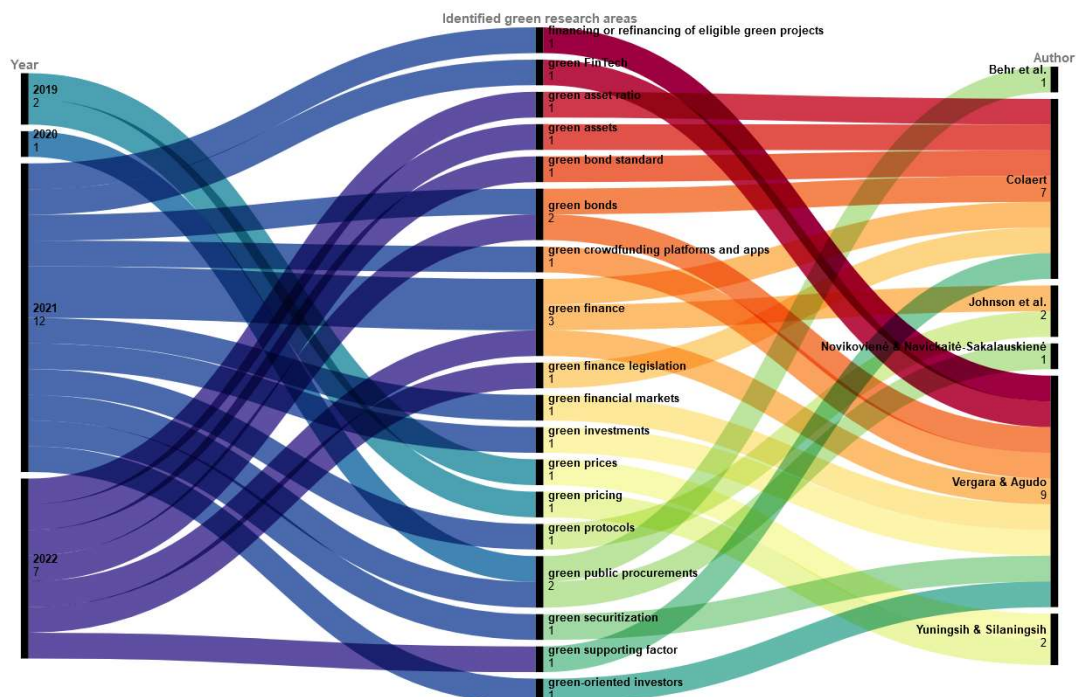
Source: As mentioned above.

Figure 6.  
Identification of green research areas addressed in the environmental claims category by year of publication and scientific publications analysed



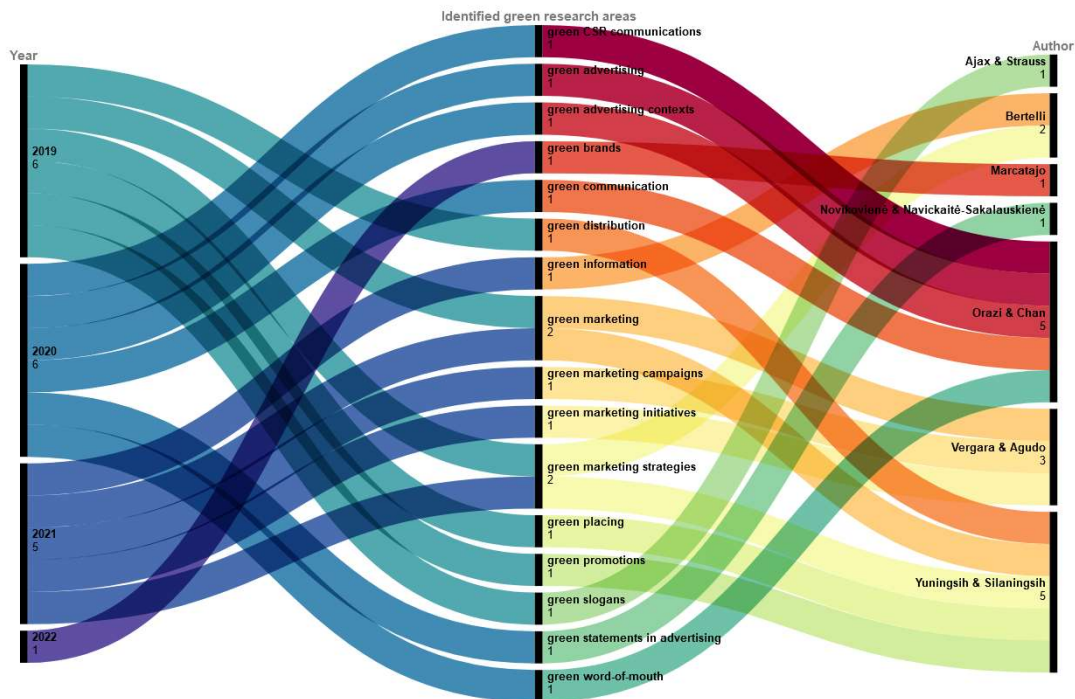
Source: As mentioned above.

Figure 7.  
Identification of green research areas addressed in the finance category by year of publication



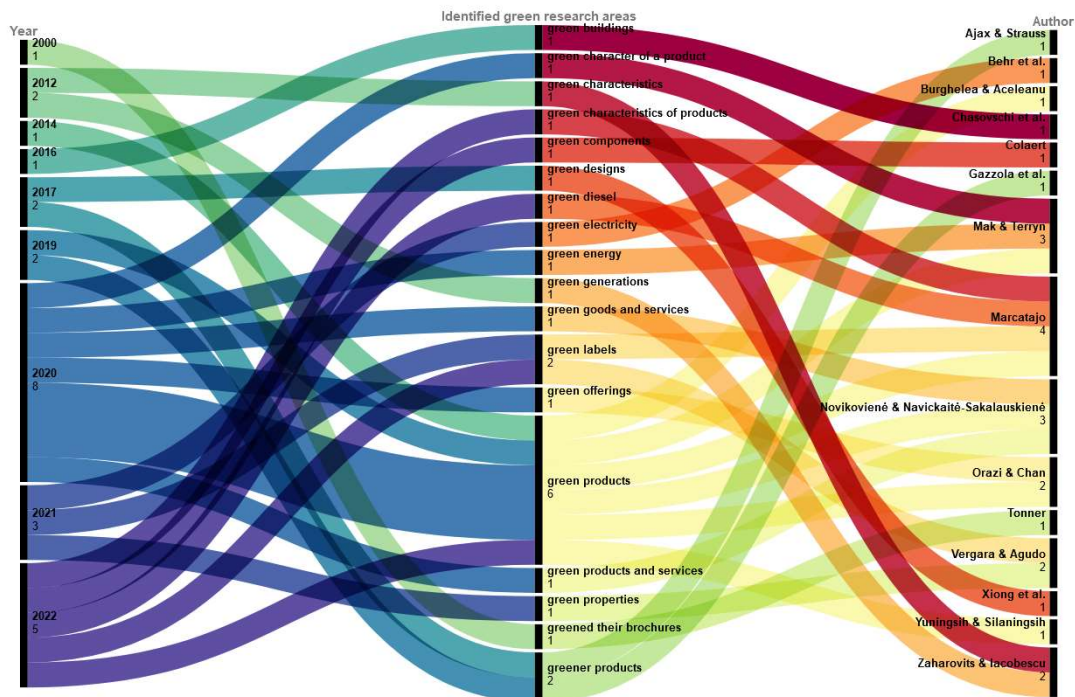
Source: As mentioned above.

Figure 8.  
Identification of green research areas addressed in the marketing category by year of publication and scientific publications analysed



Source: As mentioned above.

Figure 9.  
Identification of green research areas addressed in the product category by year of publication and scientific publications analysed



Source: As mentioned above.