

# 10. SHAPING SUSTAINABLE FOOD CONSUMPTION ATTITUDES: BIBLIOMETRIC LITERATURE REVIEW

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## Abstract

Sustainable food consumption is a crucial aspect of achieving a sustainable future. However, changing people's attitudes towards food can be a difficult task. In this article, we will conduct a bibliometric literature review to explore the current state of research on shaping sustainable food consumption attitudes. The study uses a sample of 922 papers in various bibliometric analyses. The authors use citation and collaboration analysis to determine the most significant authors and journals, and examine the relationships between the main authors and institutions. Next, they conduct content analysis, using bibliographic coupling, to determine the main areas of research within sustainable food consumption attitudes. The chapter attempts to identify the most important authors, journals and trends in each field.

**Keywords:** sustainable food consumption, consumer attitudes, bibliometric literature review, sustainability.

**JEL codes:** D12, Q01, Q18.

## Introduction

Our planet's diverse and fragile life-support systems are under threat from global warming, which causes more severe and frequent weather disasters, lowers the variety of living species and challenges our existing lifestyles (Koide et al.,

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2021). The food consumed in households contributes to over 60% of the world's greenhouse gas emissions and uses up between 50 and 80% of the total resources (Poore & Nemecek, 2018). Therefore, it is increasingly important to make consumer dietary habits more compatible with environmental sustainability (Roh et al., 2022). Especially in wealthy countries, changing food consumption is seen as a key requirement for achieving global sustainability goals (Balvanera et al., 2022).

Making decisions related to food is complex and influenced by various social, cognitive, emotional and environmental factors (Leng et al., 2017). The significance of food preferences, choices and habits in human cultures is substantial, extending beyond the basic need for survival (Enriquez & Archila-Godinez, 2022). Additionally, food choices are influenced by marketing strategies employed by food companies, which have impacted dietary norms, population-level preferences for specific food and drink categories, and the cultural values associated with food behaviours (Hemmerling et al., 2015). Shaping sustainable food consumption (SFC) attitudes is a challenging task due to their integral role in people's lifestyles and the sociocultural environment they are part of (Köster, 2009). Therefore, efforts to promote SFC environmentally face competition from other contextual influences on people's food choices.

The aim of the study is to analyse the current state of knowledge and to indicate future directions of research on shaping SFC attitudes. To meet this challenge, a bibliometric literature review was conducted. The scientific database Scopus was used as the data source. A sample of several hundred articles obtained in this way was analysed using the Biblioshiny—Bibliometrix and VOSviewer applications. The formulated research questions concern the identification of the leading authors of the research and their countries of nationality, as well as getting to know the most important journals and future research directions:

1. Who are the leading authors of research on shaping SFC attitudes?
2. What is the nationality of the leading authors of research on shaping SFC attitudes?
3. What are the most important magazines that publish articles on shaping SFC attitudes?
4. What are the main directions of future research on shaping SFC attitudes?

## **10.1. Definition of shaping sustainable food consumption**

In the literature on the subject, there is no single definition of sustainable food consumption (SFC) that would be common to all researchers (Kamenidou et al., 2019; Lorenz & Langen, 2018; Thøgersen, 2017). The richness of terminology

results to a large extent from the existence of many currents of chemical, biological, psychological and economic research. Although the general characteristics of SFC are perceived in a similar way by most authors, it can be noticed that almost all of them define these characteristics in a different way—appropriate to a certain area of science (Annunziata & Scarpato, 2014; Kamenidou et al., 2019). In order to carry out a bibliometric review, the subject scope of SFC, adopted for the purposes of this work, in accordance with FAO (FAO, 2010), should be approximated.

SFC is a category that includes the choice of environmentally friendly food (including organic food) (Scalvedi & Saba, 2018; Vittersø & Tangeland, 2015), animal welfare (Lorenz & Langen, 2018; Miranda-de la Lama et al., 2018) and fair trade (Clarke et al., 2007). This concept has entered a broader context of theoretical explanations of human behaviour by linking it to various dimensions of consumption, which include reducing the consumption of meat and processed products (Clonan et al., 2015; Vainio et al., 2016), increasing the consumption of fruit and vegetables, as well as consuming products that have a lower carbon footprint (Hartikainen et al., 2014). SFC has also become a core category in empirical studies relating to the consumption of locally produced food (Feldmann & Hamm, 2015; Scalvedi & Saba, 2018). Furthermore, some scientific reports refer to the behaviour of buyers related to waste management, including not wasting food (Lorenz & Langen, 2018; Song et al., 2015). Among the ranges of contemporary definitions of SFC, such aspects as attitudes, perceptions and other aspects of consumer behaviour are also indicated (Salazar et al., 2013; Wang et al., 2014), pointing to the influence of social norms (De Maya et al., 2011; Richter & Klöckner, 2017) or profiling the green consumer (Akehurst et al., 2012).

## 10.2. Description of the method and procedure for data acquisition

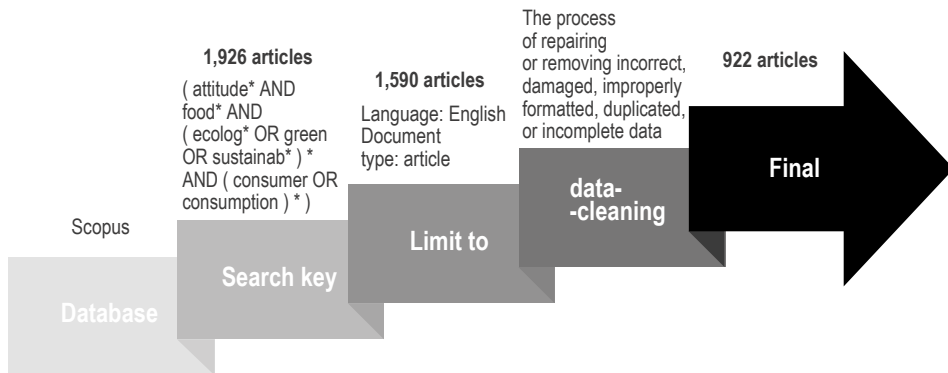
The conducted research was guided by the indications of Zupic and Čater (2015), who suggest that the process of bibliometric analysis should include a number of stages, such as research planning, bibliometric data collection, analysis (including data cleaning), visual presentation and interpretation of the results (Kryszak et al., 2021).

Bibliometric analysis provides an advantage over a systematic review (Fan et al., 2022; Lim et al., 2022) by providing the productivity and impact of existing research and exploring major themes and patterns of collaboration (Mukherjee et al., 2022).

Scopus database was used for the analysis. It is a multidisciplinary bibliographic and citation database that contains abstracts and references of scientific articles, conferences, books and patents in various fields. The choice was also guided

by the greater complexity of this database, compared to Web of Science (WoS) (Levine-Clark & Gil, 2009). At the same time, the scope of Scopus is wider than that of WoS, as it includes journals with good citations that are usually ignored by WoS (Vieira & Gomes, 2009). Another database that can provide greater depth of information is Google Scholar (Franceschet, 2010), but it does not provide data ready for analysis and includes many journals of purely local interest, as well as duplicate records (Mingers & Leydesdorff, 2015).

In order to find all relevant documents, we used the following expression: (attitude\* AND food\* AND (ecolog\* OR green OR sustainab\*)\* AND (consumer OR consumption)\*). The search was based on “title, abstract, keywords”. In order to ensure coverage of related publications, the “OR” logical operator was used to combine all combinations. Figure 10.1 shows a graphical view of searching for data by the “title, abstract and keywords”.



**Figure 10.1. The process of obtaining data for analysis**

Source: own compilation.

After the initial search, 1,926 documents were obtained. However, in the next step, only research articles published in English were left. At that time, 1590 articles remained. Bibliometric methods depend to a large extent on the quality of data, so the next step was to clean the database. Data cleaning and disambiguation is a necessary and time-consuming process (Besselaar & Sandström, 2016).

To clear the data, we applied the following main rules:

- an article had to comply with the definition of SFC chosen during the literature review (overly broad research scope was excluded),
- an article was rejected if it was incomplete, badly formatted or duplicated,
- articles related to sustainable consumption in the field of medicine and agriculture were excluded,
- selected articles focused on human food (animal food articles were excluded).

After eliminating irrelevant papers, removing any articles not directly related to the research topic, as well as corrupted, incorrectly formatted, duplicate or incomplete data, a sample of 922 articles was obtained and used for the analysis.

The following programs were used for the analysis: Bibliometrix and Biblioshiny in the RStudio as well as VOSviewer.

### 10.3. Results

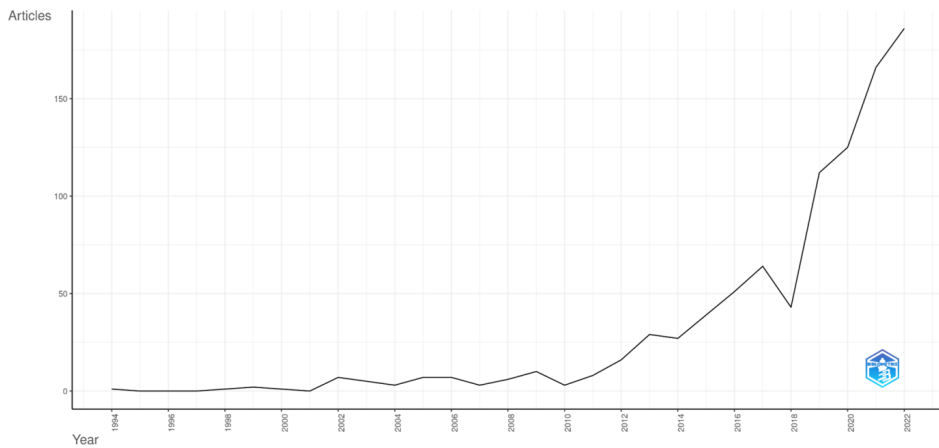
Table 10.1 presents the main structure of the collected data. Publications cover the years 1994–2022 and consist of 922 articles published in 309 journals, written by 2,919 authors. Only 59 articles are attributed to individual authors, which confirms the general trend of cooperation also in the field of SFC. The average citation rate is relatively high, at around 34 citations per article, indicating a growing influence and interest in this field of research.

**Table 10.1. Main information on the topic of SFC**

Description	Results
<b>MAIN INFORMATION ABOUT DATA</b>	
Timespan	1994–2022
Sources (journals, books, etc.)	309
Documents	922
Annual growth rate %	20.52
Documents' average age	4.78
Average citations per doc	34.45
References	52656
<b>DOCUMENT CONTENTS</b>	
Keywords plus (ID)	3056
Author's keywords (DE)	2559
<b>AUTHORS</b>	
Authors	2919
Authors of single-authored documents	59
<b>AUTHORS' COLLABORATION</b>	
Single-authored documents	65
Co-authors per document	3.76
International co-authorships %	26.25
<b>DOCUMENT TYPES</b>	
Article	922

Source: own compilation.

Figure 10.2 shows the development of published articles on SFC. Since 2018, there has been a clear upward trend in which the number of articles on SFC is definitely growing. This tendency suggests that this topic has become an important and relevant issue in scientific and social discussions.



**Figure 10.2. Number of publications on the SFC topic from 1994 to 2022**

Source: own compilation.

The surge in publications reflects increased public interest in SFC issues. This phenomenon can be the result of many factors. Growing ecological awareness and care for the environment, changing consumer preferences as well as technological and scientific progress are just some of the possible reasons for the increased interest in the subject.

Table 10.2 shows ten scientific journals that have published the most articles on SFC. *Sustainability* is in the first place with 92 published articles, followed by *Appetite* with 71 articles and *British Food Journal* with 61 articles.

**Table 10.2. Sources with the most published articles**

Sources	Articles
<i>Sustainability</i> (Switzerland)	92
<i>Appetite</i>	71
<i>British Food Journal</i>	61
<i>Journal of Cleaner Production</i>	37
<i>International Journal of Environmental Research and Public Health</i>	35
<i>Nutrients</i>	27
<i>Food Quality and Preference</i>	23
<i>Foods</i>	21
<i>PLoS ONE</i>	20
<i>Food Research International</i>	18

Source: own compilation.

Table 10.3 shows countries in which the research topic in question was most often covered in scientific articles. Italy is in first place with 404 publications, the USA is in second place with 334 publications and China is in third place with 273 publications.

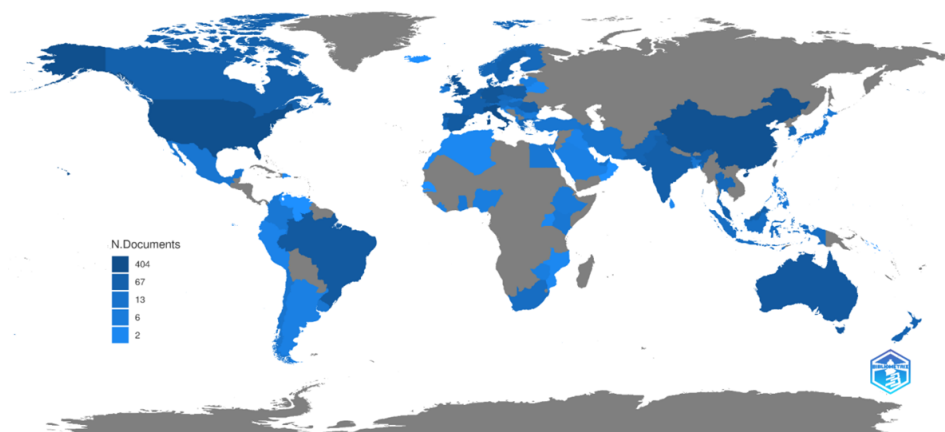
**Table 10.3. Countries with the highest number of published articles on the research topic**

Region	Articles
Italy	404
USA	334
China	273
UK	226
Germany	196
Australia	139
Brazil	126
Spain	120
Netherlands	117
Poland	92

Source: own compilation.

The following places belong to: Great Britain with 226 publications, Germany with 196 publications, Australia with 139 publications, Brazil with 126 publications, Spain with 120 publications, the Netherlands with 117 publications and Poland with 92 publications. The analysis of this table shows that research on SFC has been conducted on a large scale in various countries around the world. Italy, the USA and China stand out as the countries with the most articles published on this topic. This is a sign of global interest in the issues of SFC and its impact on the environment.

Countries where the research topic has been published in scientific articles are shown in Figure 10.3. It is worth noting that the list includes both countries with



**Figure 10.3. Countries where the research topic has been published in scientific articles**

Source: own compilation.

large global economies and smaller countries, which shows that SFC is a research topic of international importance.

Table 10.4 shows ten authors with the most published papers on SFC. Verbeke is in first place with 11 published articles and Spiller is in second place with 9 articles. The listed authors are important researchers in the field of SFC, contributing to the scientific literature on the subject. The number of papers published by these authors shows their commitment to research into sustainable nutrition and the impact of consumption on social and ecological aspects. It is worth noting that the table reflects the diversity of the authors, both in terms of their nationality and research fields. This proves the international nature of research on SFC and the involvement of many scientists from different countries and specialisations.

**Table 10.4. Top ten authors according to the number of published documents about SFC**

Authors	Articles	Fractionalized frequency*
W. Verbeke	11	3.95
A. Spiller	9	3.25
M. Siegrist	7	2.33
H. S. Chen	6	3.08
S. Hercberg	6	1.04
A. Krystallis	6	1.77
A. Annunziata	5	2.50
Q. Chen	5	0.69
J. De Boer	5	2.00
K. G. Grunert	5	1.02

\* The fractionalized frequency quantifies the individual contribution of each author by assuming equal shares among all co-authors of the affiliated papers.

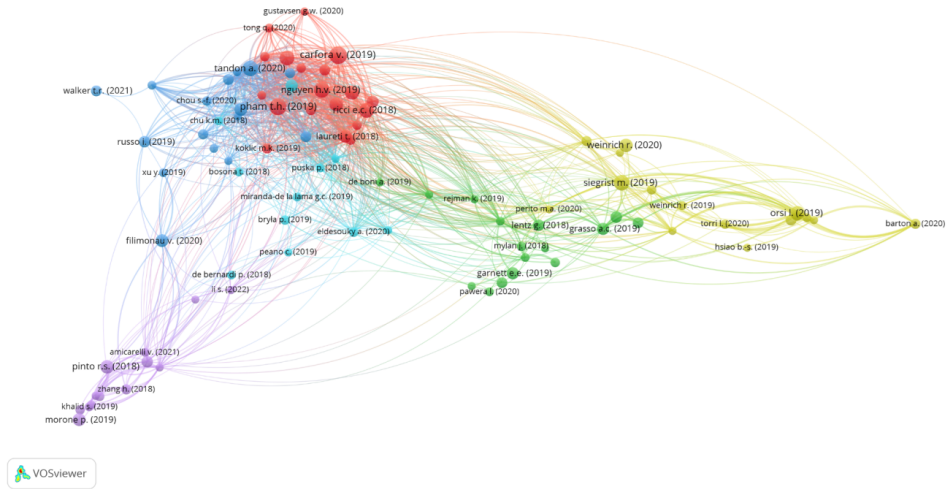
Source: own compilation.

## 10.4. Bibliography coupling and content analysis

To identify articles on a given topic that are most cited and impactful, the time range of the analysis was shortened to the last five years. This avoids a situation where a much older article would have more citations than a newer one. Limiting the analysis to the last five years allows more accurate identification of the latest and most important publications in a given field. This, in turn, facilitates the understanding of current trends and research approaches in a given field, which is important for further scientific work and research.

The main purpose of using bibliographic coupling is to clarify the dimensions and streams of literature in a given research field (Chiaramonte et al., 2023). Figure 10.4 shows the results of our bibliographic linkage analysis, using colours to distinguish streams in the SFC literature.





**Figure 10.4. Visualisation of most cited articles**

Source: own compilation.

Six streams have been identified in a sample of 922 papers that exceed 30 citations (Chiaromonte et al., 2023; Khan et al., 2020) to guide future research directions.

### 10.5. Setting future research directions

The use of both bibliometric analysis and content analysis allows us to detect possible gaps in scientific research and determine future research directions. Table 10.5 presents a summary of the future research agenda for each research stream, based on three most cited documents within each stream.

**Table 10.5. Future research agenda**

Cluster No	Author and year of publication	Aim of article	Directions of future research
1	Nguyen et al. (2019)	The aim of this article is to identify the influence of personal factors (care, knowledge, etc) and contextual and environmental factors on consumer decisions regarding the purchase of organic food.	The future direction of research results from the limitations of the research sample (especially comparative analysis of rural versus local). In addition, it is suggested to explore the interconnectedness of determinants of consumer attitudes towards organic food to further address the motivational complexity of organic food consumption. Furthermore, the authors suggest focusing on changes in attitudes and behaviour over time.

Table 10.5 – cont.

Cluster No	Author and year of publication	Aim of article	Directions of future research
1	Carfora et al. (2019)	The aim of this article is to investigate, from a psychological perspective, the elements (determinants) that can predict attitudes to and purchases of organic products (organic milk). The study is based on the Theory of Planned Behaviour, which was extended to include trust in the supply chain actors and self-identity of the consumers in question as “green consumers”.	Future research could control the role of other important consumer predispositions. The authors suggest focusing on affective components, utilitarian versus hedonic aspects, self-efficacy in eating and performance intentions, especially based on the context of pro-health and pro-environmental activities.
	Pham et al. (2018)	The aim of this article is to investigate how different factors may enhance or impede young consumers’ intentions to purchase a specific type of eco-friendly product. The authors focus on factors such as: health consciousness, media exposure, consumers’ environmental concern and food taste perceived barriers (i.e. high price, inadequate availability, poor labelling and extra time required).	It is suggested to examine changes in consumer attitudes and identify how their intentions turn into reality in purchasing behaviour. Given the complexity of consumer behaviour towards organic products, future research may also test modified models that take into account interconnections between the previous ones, such as between media exposure and food safety concerns. Additionally, some moderating factors, such as past behaviour, knowledge, gender and income, can be examined. Finally, there is also a need for a comparative study of organic food purchases and consumption in both developed and developing countries.
2	Garnett et al. (2019)	The aim of this article is to examine the impact of attempting to nudge meal selection by increasing the proportion of vegetarian meals.	Future research could replicate the study using another sample. The authors suggest focusing on low- and middle-income groups, other countries and availability of meat-free choices.
	Grasso et al. (2019)	The aim of this article is to investigate the readiness of older consumers to accept the consumption of the following sources of alternative, more sustainable protein: plant-based protein, insects, single-cell protein and in vitro meat. The authors focus on the associations of different food-related attitudes and behaviours as well as socio-demographics with older consumers’ acceptance to consume protein from such sources.	Future research could identify the impact of other possible determinants of acceptance of eating sustainable sources of protein, such as familiarity, social norms, awareness, perceived consumer effectiveness and perceived product availability. In addition, the authors suggest conducting studies in which sustainable food choices are put in context by providing pictures of meals or products, or real products, i.e. insects or insect-based protein as an added ingredient.
	Lentz et al. (2018)	The aim of this article is to identify potential drivers for the reduction of meat consumption. Based on the Theory of Planned Behaviour (TPB) and the Meat-Attachment Questionnaire (MAQ), this study investigated consumers’ attitudes, motivations and behaviours in regard to meat consumption.	Future research directions are very embedded in the limitations of the research, i.e. its methods and scopes (measuring meat consumption accurately with “consumption diaries”). In addition, it is suggested to examine the changes in attitudes. The authors suggest focusing on interventions and media campaigns, which can imitate these changes.

Table 10.5 – cont.

Cluster No	Author and year of publication	Aim of article	Directions of future research
3	Tandon et al. (2020)	The aim of this article is to examine consumers' motivations for purchasing organic food and to explore the relationship between motivation, attitude and buying behaviour. Using the self-determination theory, the study addresses the knowledge gap regarding the factors driving the actual consumption of organic food, particularly in emerging economies.	The authors suggest conducting cross-cultural studies to investigate whether and how cultural differences affect the consumption of organic food. They suggest similar research among consumers living in smaller cities and semi-urban regions. Future research should focus on evaluating legal policy and government support for the marketing and production of organic food.
	Woo & Kim (2018)	The aim of this article is to apply the multidimensional concept of perceived value (GPV) in the context of purchasing eco-friendly food products in order to better understand consumer behavioural intentions and explain the formation of purchase intentions for these products. The study examines the relationships between GPV, consumer attitudes and purchase intentions.	Future research could replicate the study using a probabilistic sampling frame. Moreover, it was noticed that consumers' attitudes and intentions do not always reflect their actual purchasing behaviour. Therefore, future research should focus on examining the actual purchasing behaviour through observation or interviews.
	Filimonau et al. (2020)	The aim of this article is to examine factors influencing consumer engagement in reducing food waste in restaurants in Poland and to provide recommendations for policies and management practices that strengthen consumers' intentions and pro-environmental behaviours in this area.	There is a need for more detailed research on the factors determining consumer involvement in reducing food waste in restaurants, both in Poland and in other consumer markets, preferably by developing, testing and validating dedicated measurement scales.
4	Orsi et al. (2019)	The aim of the article is to investigate perspectives and factors determining the acceptance of insect consumption as a food source in Germany, with a particular focus on processed insect products.	The authors suggest conducting representative studies that use methods other than online questionnaires. Future research should focus on observing the actual insect-eating intentions and behaviours rather than rely solely on self-reported willingness. In addition, qualitative research, taking into account a wider range of attributes and analysis of long-term or panel data, could better contribute to understanding the dynamics of insect food acceptance in European markets.
	Siegrist & Hartmann (2019)	The aim of the article is to examine how consumers perceive the environmental impact of different foods, specifically meat substitutes and organic meat, and to determine the factors influencing their consumption choices. The study also highlights the importance of consumer knowledge regarding the environmental impact of food in promoting more SFC.	The text highlights the need for further research to better understand the impact of meat substitute consumption on the amount of meat consumed and the role of environmental and health motives in making sustainable food choices. The authors encourage further research into the relationship between consumers' knowledge of sustainable nutrition and their eating behaviour, as well as the development of measurement scales that measure consumers' knowledge of the environmental impact of different food products.

Table 10.5 – cont.

Cluster No	Author and year of publication	Aim of article	Directions of future research
4	Weinrich & Elshiewy (2019)	This article aims to analyse consumer preferences for microalgae-based meat substitutes as a sustainable alternative to traditional meat consumption, addressing environmental concerns and health issues.	Future research in food engineering and sensory marketing is needed to understand consumer preferences for microalgae-based meat substitutes.
5	Pinto et al. (2018)	The aim of this article is to demonstrate how a simple and inexpensive educational campaign can effectively reduce food waste in university canteens by raising awareness and suggesting actionable steps, highlighting the importance of collaboration between canteen staff and students for long-term sustainability.	It is suggested that further and future research on the relationship between plate waste and the dining atmosphere is needed to clarify this relationship as it is not the focus of this article.
	Fami et al. (2019)	The aim of this article is to examine the relationship between food consumption management and food waste in households in Tehran, Iran, with a specific focus on women. The article aims to develop a model and identify key factors influencing food waste, considering the socio-economic and environmental consequences as well as the need for a sustainable food waste prevention plan.	This study was aimed at people who took care of home meal planning and preparation. Some error may have occurred in the study resulting from the fact that the person responsible for the household may have been more or less aware of food planning and waste control. Therefore, it is advisable to adopt arrangements from other countries and draw on the experience of local and international communities. In order to better understand the behavioural intentions of households in the food waste reduction program, the authors recommend that a more detailed study be carried out locally, and the data collected can be carried out more efficiently and extensively with the support of the government.
	Morone et al. (2019)	This article aims to identify effective policy actions and private initiatives that can change the current unsustainable food consumption model in high-income countries to significantly reduce food waste. The results provide valuable information for policymakers and contribute to filling the knowledge gap regarding policy strategies to combat food waste.	Assessing the effectiveness and impact of different public food waste legislation and private initiatives in different contexts and regions using common frameworks and indicators. Investigating the barriers and drivers for adopting and upscaling bio-refining technologies and practices, and their implications for food security, nutrition and environmental sustainability. Developing and testing innovative approaches and tools to raise awareness and change consumer behaviour towards more SFC patterns, taking into account cultural, social and psychological factors. Assess trade-offs and synergies between food waste reduction/valorisation and other policy objectives such as climate change mitigation, biodiversity protection, circular economy and social justice.

Table 10.5 – cont.

Cluster No	Author and year of publication	Aim of article	Directions of future research
6	Watanabe et al. (2020)	The aim of this article is to investigate the impact of perceived value on consumers' trust and purchase intention in the Brazilian organic food market, thereby enhancing our understanding of consumer behaviour in this context.	Despite the diligence and methodological meticulousness adopted in conducting the research, it has some limitations: first, a non-probability convenient sampling technique, which makes it impossible to generalise the results. Regarding this limitation, the sample focused on younger consumers from one Brazilian metropolitan city. Therefore, a more heterogeneous sample can be targeted for future research to determine the stability of the observed results. The predictors of consumers' purchase intention and trust may also be explored in further research, including, for example, health issues. In addition, the direct relationship between trust and purchase intention could also be deepened in other studies, as this relationship has not been not confirmed in this study.
	Eldesouky et al. (2019)	The aim of the article is to investigate consumers' perceptions and attitudes towards environmental labels on food products and their impact on purchasing decisions.	Research on different types of food products marked with "sustainable" labels.
	Bryła (2019)	The goal of the article is to assess the level and predictors of regional ethnocentrism on the market of regional food products in the context of sustainable consumption, thus contributing to the understanding of consumer ethnocentrism by exploring its regional dimension and its relation to sustainable development.	Future research may address the phenomenon of regional ethnocentrism in other countries and in relation to other categories of products and services. The phenomenon of regional ethnocentrism can be studied in an experimental setting using real or fictitious brands associated with different regions. The role of text references to the region of origin on the product packaging can be compared to visual stimuli with the same purpose, such as logos, pictures, maps or symbols. Eye tracking can be used to investigate the attention given to the region of origin information on packaging.

Source: own elaboration.

## Conclusions

In this chapter, we examine the bibliometric features of the literature on SFC. Focusing on the period 1994–2022, we have found 922 papers involving 2,919 authors, which allowed us to detail the state of the art in the field and future research opportunities.

Interest in SFC has increased in recent years. Data analysis shows an increase in the number of publications on this subject, which proves the growing

environmental awareness and changing consumer preferences. In total, 922 articles published in 309 journals by 2,919 authors were collected. Many of these authors have collaborated, which reflects the trend of collaboration in the research on this topic. Italy, the USA and China are countries with the most articles on SFC. The research is conducted on a large scale, both in countries with large global economies and smaller countries. It is worth noting that many authors from different nationalities and research fields are involved in the research on this topic, which underlines the international importance of SFC. The leading scientific journal in the field of SFC is *Sustainability*, which has published the most articles (92). Among the authors who have made a significant contribution to the study of SFC, the most distinguished ones are: Verbeke, Spiller and Siegrist.

Last but not least, another contribution of this article is the agenda for future research, developed on the basis of cluster analysis. It is indicated that identifying the determinants of SFC (including, e.g., factors resulting from health problems of an individual or consumer knowledge and/or awareness of organic food), as well as the links between these factors, should be given more attention in the future.

Furthermore, more discussion should also be conducted on the actual purchasing behaviour of consumers in order to understand whether their attitudes and intentions are in line with the actual purchasing decisions (attitude-behaviour gap). Staying within the issue of attitudes towards SFC, the need to examine changes in consumer attitudes over time is indicated, including interventions that cause these changes.

Subsequently, due to the constant increase in food waste, it becomes important to develop a scale for measuring this phenomenon and factors that could build consumer involvement in the process of reducing food waste. An equally important issue is biorefining, which is a key pillar of the bioeconomy.

The last direction of future research, extending its subject scope, is the assessment of legal policy and government support for marketing activities and production of organic food, because it is legal regulations that largely regulate consumer awareness of sustainable development.

The authors of the analysed works also emphasise that their research is characterised by limitations resulting from the subjective scopes. They indicate that efforts should be made to eliminate narrow subjective scopes in order to conduct research on a representative group of recipients (e.g., extending research to include rural residents or citizens of other countries).

There are some limitations to the performed bibliometric analysis. The first one is the analysis of articles from the Scopus database, which does not include all scientific journals. It should also be remembered that this database may contain errors, as the items contained therein are not created for bibliometric analysis and may contain repetitions, for instance. It is indicated that future bibliometric research could be based on another database, such as the Web of Science, or on triangulation of several databases. The second research limitation is related to the nomenclature

of clusters and the interpretation of future research directions, which remain biased because they depend on the subjectivity of the authors of the analysis.

## References

- Akehurst, G., Afonso, C., & Martins Gonçalves, H. (2012). Re-examining green purchase behaviour and the green consumer profile: New evidences. *Management Decision*, *50*, 972–988.
- Anunziata, A., & Scarpato, D. (2014). Factors affecting consumer attitudes towards food products with sustainable attributes. *Agricultural Economics*, *60*, 353–363.
- Balvanera, P., Brauman, K. A., Cord, A. F., Drakou, E. G., Geijzendorffer, I. R., Karp, D. S., Martín-López, B., Mwampamba, T. H., & Schröter, M. (2022). Essential ecosystem service variables for monitoring progress towards sustainability. *Current Opinion in Environmental Sustainability*, *54*, 101152. <https://doi.org/10.1016/j.cosust.2022.101152>
- Besselaar, P., & Sandström, U. (2016). What is the required level of data cleaning? A research evaluation case. *Journal of Scientometric Research*, *5*(1), 7–12. <https://doi.org/10.5530/jscires.5.1.3>
- Bryła, P. (2019). Regional ethnocentrism on the food market as a pattern of sustainable consumption. *Sustainability*, *11*(22), 6408. <https://doi.org/10.3390/su11226408>
- Carfora, V., Cavallo, C., Caso, D., Del Giudice, T., De Devitiis, B., Viscecchia, R., Nardone, G., & Cicia, G. (2019). Explaining consumer purchase behavior for organic milk: Including trust and green self-identity within the theory of planned behavior. *Food Quality and Preference*, *76*, 1–9. <https://doi.org/10.1016/j.foodqual.2019.03.006>
- Chiaromonte, L., Dreassi, A., Piserà, S., & Khan, A. (2023). Mergers and acquisitions in the financial industry: A bibliometric review and future research directions. *Research in International Business and Finance*, *64*, 101837. <https://doi.org/10.1016/j.ribaf.2022.101837>
- Clarke, N., Barnett, C., Cloke, P., & Malpass, A. (2007). The political rationalities of fair-trade consumption in the United Kingdom. *Politics and Society*, *35*, 583–607.
- Clonan, A., Wilson, P., Swift, J. A., Leibovici, D. G., & Holdsworth, M. (2015). Red and processed meat consumption and purchasing behaviours and attitudes: Impacts for human health, animal welfare and environmental sustainability. *Public Health Nutrition*, *18*, 2446–2456.
- De Maya, S. R., López-López, I., & Munuera, J. L. (2011). Organic food consumption in Europe: International segmentation based on value system differences. *Ecological Economics*, *70*, 1767–1775.
- Eldesouky, A., Mesias, F. J., & Escribano, M. (2019). Perception of Spanish consumers towards environmentally friendly labelling in food. *International Journal of Consumer Studies*, *44*(1), 64–76. <https://doi.org/10.1111/ijcs.12546>
- Enriquez, J. P. & Archila-Godinez, J. C. (2022). Social and cultural influences on food choices: A review. *Critical Reviews in Food Science and Nutrition*, *62*(13), 3698–3704. <https://doi.org/10.1080/10408398.2020.1870434>
- FAO. (2010). *Definition of sustainable diets*. Food and Agriculture Organization of the United Nations. Presented at International Scientific Symposium: Biodiversity and

- Sustainable Diets United Against Hunger, Rome, Italy, 3–5 November 2010. <https://www.fao.org/ag/humannutrition/28507-0e8d8dc364ee46865d5841c48976e9980.pdf>
- Fami, H. S., Aramyan, L. H., Sijtsema, S. J., & Alambaigi, A. (2019). Determinants of household food waste behavior in Tehran city: A structural model. *Resources, Conservation and Recycling*, 143, 154–166. <https://doi.org/10.1016/j.resconrec.2018.12.033>
- Fan, D., Breslin, D., Callahan, J. L., & Iszatt-White, M. (2022). Advancing literature review methodology through rigour, generativity, scope and transparency. *International Journal of Management Reviews*, 24(2), 171–180. <https://doi.org/10.1111/ijmr.12291>
- Feldmann, C., & Hamm, U. (2015). Consumers' perceptions and preferences for local food: A review. *Food Quality and Preference*, 40, 152–164.
- Filimonau, V., Matute, J., Kubal-Czerwińska, M., Krzesiwo, K., & Mika, M. (2020). The determinants of consumer engagement in restaurant food waste mitigation in Poland: An exploratory study. *Journal of Cleaner Production*, 247, 119105. <https://doi.org/10.1016/j.jclepro.2019.119105>
- Franceschet, M. (2010). A comparison of bibliometric indicators for computer science scholars and journals on Web of Science and Google Scholar. *Scientometrics*, 83(1), 243–258. <https://doi.org/10.1007/s11192-009-0021-2>
- Garnett, E. E., Balmford, A., Sandbrook, C., Pilling, M. A., & Marteau, T. M. (2019). Impact of increasing vegetarian availability on meal selection and sales in cafeterias. *Proceedings of the National Academy of Sciences*, 116(42), 20923–20929. <https://doi.org/10.1073/pnas.1907207116>
- Grasso, A. C., Hung, Y., Olthof, M. R., Verbeke, W., & Brouwer, I. A. (2019). Older consumers' readiness to accept alternative, more sustainable protein sources in the European Union. *Nutrients*, 11(8), 1904. <https://doi.org/10.3390/nu11081904>
- Hartikainen, H., Roininen, T., Katajajuuri, J. M., & Pulkkinen, H. (2014). Finnish consumer perceptions of carbon footprints and carbon labelling of food products. *Journal of Cleaner Production*, 73, 285–293.
- Hemmerling, S., Hamm, U., & Spiller, A. (2015). Consumption behaviour regarding organic food from a marketing perspective—a literature review. *Organic Agriculture*, 5(4), 277–313. <https://doi.org/10.1007/s13165-015-0109-3>
- Kamenidou, I. C., Mamalis, S. A., Pavlidis, S., & Bara, E. Z. G. (2019). Segmenting the Generation Z cohort university students based on sustainable food consumption behavior: A preliminary study. *Sustainability*, 11, 837. <https://doi.org/10.3390/su11030837>
- Khan, A., Hassan, M. K., Paltrinieri, A., Dreassi, A., & Bahoo, S. (2020). A bibliometric review of takaful literature. *International Review of Economics and Finance*, 69, 389–405.
- Koide, R., Lettenmeier, M., Akenji, L., Toivio, V., Amellina, A., Khodke, A., & Kojima, S. (2021). Lifestyle carbon footprints and changes in lifestyles to limit global warming to 1.5°C, and ways forward for related research. *Sustainability Science*, 16(6), 2087–2099. <https://doi.org/10.1007/s11625-021-01018-6>
- Köster, E. P. (2009). Diversity in the determinants of food choice: A psychological perspective. *Food Quality and Preference*, 20(2), 70–82. <https://doi.org/10.1016/j.foodqual.2007.11.002>
- Kryszak, Ł., Świerczyńska, K., & Staniszewski, J. (2021). Measuring total factor productivity in agriculture: a bibliometric review. *International Journal of Emerging Markets*, 18(1), 148–172. <https://doi.org/10.1108/ijoem-04-2020-0428>



- Leng, G., Adan, R. A. H., Belot, M., Brunstrom, J. M., De Graaf, K., Dickson, S. L., Hare, T., Maier, S., Menzies, J., Preissl, H., Reisch, L. A., Rogers, P. J., & Smeets, P. A. M. (2017). The determinants of food choice. *Proceedings of the Nutrition Society*, 76(3), 316–327. <https://doi.org/10.1017/S002966511600286X>
- Lentz, G., Connelly, S., Miroso, M., & Jowett, T. (2018). Gauging attitudes and behaviours: Meat consumption and potential reduction. *Appetite*, 127, 230–241. <https://doi.org/10.1016/j.appet.2018.04.015>
- Levine-Clark, M., & Gil, E. (2009). A comparative analysis of social sciences citation tools. *Online Information Review*, 33(5), 986–996. <https://doi.org/10.1108/14684520911001954>
- Lim, W. M., Kumar, S., & Ali, F. (2022). Advancing knowledge through literature reviews: ‘what’, ‘why’, and ‘how to contribute. *The Service Industries Journal*, 42, 481–513. <https://doi.org/10.1080/02642069.2022.2047941>
- Lorenz, B. A., & Langen, N. (2018). Determinants of how individuals choose, eat and waste: Providing common ground to enhance sustainable food consumption out-of-home. *International Journal of Consumer Studies*, 42, 35–75.
- Mingers, J., & Leydesdorff, L. (2015). A review of theory and practice in scientometrics. *European Journal of Operational Research*, 246(1), 1–19. <https://doi.org/10.1016/j.ejor.2015.04.002>
- Miranda-de la Lama, G. C., Estévez-Moreno, L. X., Villarroel, M., Rayas-Amor, A. A., María, G. A., & Sepúlveda, W. S. (2018). Consumer attitudes toward animal welfare-friendly products and willingness to pay: Exploration of Mexican market segments. *Journal of Applied Animal Welfare Science*, 22(1), 13–25. <https://doi.org/10.1080/10888705.2018.1456925>
- Morone, P., Falcone, P. M., & Lopolito, A. (2019). How to promote a new and sustainable food consumption model: A fuzzy cognitive map study. *Journal of Cleaner Production*, 208, 563–574. <https://doi.org/10.1016/j.jclepro.2018.10.075>
- Mukherjee, D., Lim, W. M., Kumar, S., & Donthu, N. (2022). Guidelines for advancing theory and practice through bibliometric research. *Journal of Business Research*, 148, 101–115. <https://doi.org/10.1016/j.jbusres.2022.04.042>
- Nguyen, H., Nguyen, N., Nguyen, B., Lobo, A., & Vu, P. (2019). Organic food purchases in an emerging market: The influence of consumers’ personal factors and green marketing practices of food stores. *International Journal of Environmental Research and Public Health*, 16(6), 1037. <https://doi.org/10.3390/ijerph16061037>
- Orsi, L., Voegelé, L. L., & Stranieri, S. (2019). Eating edible insects as sustainable food? Exploring the determinants of consumer acceptance in Germany. *Food Research International*, 125, 108573. <https://doi.org/10.1016/j.foodres.2019.108573>
- Pham, T. H., Nguyen, T. N., Phan, T. T. H., & Nguyen, N. T. (2018). Evaluating the purchase behaviour of organic food by young consumers in an emerging market economy. *Journal of Strategic Marketing*, 27(6), 540–556. <https://doi.org/10.1080/0965254x.2018.1447984>
- Pinto, R. S., Pinto, R. M. de S., Melo, F. F. S., Campos, S. S., & Cordovil, C. M. (2018). A simple awareness campaign to promote food waste reduction in a University canteen. *Waste Management*, 76, 28–38. <https://doi.org/10.1016/j.wasman.2018.02.044>

- Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987–992. <https://doi.org/10.1126/science.aaq0216>
- Richter, I., & Klöckner, C. (2017). The psychology of sustainable seafood consumption: A comprehensive approach. *Foods*, 6, 86.
- Roh, T., Seok, J. & Kim, Y. (2022). Unveiling ways to reach organic purchase: Green perceived value, perceived knowledge, attitude, subjective norm, and trust. *Journal of Retailing and Consumer Services*, 67, 102988. <https://doi.org/10.1016/j.jretconser.2022.102988>
- Salazar, H. A., Oerlemans, L., & van Stroe-Biezen, S. (2013). Social influence on sustainable consumption: Evidence from a behavioural experiment. *International Journal of Consumer Studies*, 37, 172–180.
- Scalvedi, M. L., & Saba, A. (2018). Exploring local and organic food consumption in a holistic sustainability view. *British Food Journal*, 120, 749–762.
- Siegrist, M., & Hartmann, C. (2019). Impact of sustainability perception on consumption of organic meat and meat substitutes. *Appetite*, 132, 196–202. <https://doi.org/10.1016/j.appet.2018.09.016>
- Song, G., Li, M., Semakula, H. M., & Zhang, S. (2015). Food consumption and waste and the embedded carbon, water and ecological footprints of households in China. *Science of The Total Environment*, 529, 191–197.
- Tandon, A., Dhir, A., Kaur, P., Kushwah, S., & Salo, J. (2020). Why do people buy organic food? The moderating role of environmental concerns and trust. *Journal of Retailing and Consumer Services*, 57, 102247. <https://doi.org/10.1016/j.jretconser.2020.102247>
- Thøgersen, J. (2017). Sustainable food consumption in the nexus between national context and private lifestyle: A multi-level study. *Food Quality Preference*, 55, 16–25.
- Vainio, A., Niva, M., Jallinoja, P., & Latvala, T. (2016). From beef to beans: Eating motives and the replacement of animal proteins with plant proteins among Finnish consumers. *Appetite*, 106, 92–100.
- Vieira, E. S., & Gomes, J. A. N. F. (2009). A comparison of Scopus and Web of Science for a typical university. *Scientometrics*, 81(2), 587–600. <https://doi.org/10.1007/s11192-009-2178-0>
- Vittersø, G., & Tangeland, T. (2015). The role of consumers in transitions towards sustainable food consumption. The case of organic food in Norway. *Journal of Cleaner Production*, 92, 91–99.
- Wang, P., Liu, Q., & Qi, Y. (2014). Factors influencing sustainable consumption behaviors: A survey of the rural residents in China. *Journal of Cleaner Production*, 63, 52–165.
- Watanabe, E. A., Alfinito, S., Curvelo, I. C. G., & Hamza, K. M. (2020). Perceived value, trust and purchase intention of organic food: a study with Brazilian consumers. *British Food Journal*, 122(4), 1070–1184. <https://doi.org/10.1108/bfj-05-2019-0363>
- Weinrich, R., & Elshiewy, O. (2019). Preference and willingness to pay for meat substitutes based on micro-algae. *Appetite*, 142, 104353. <https://doi.org/10.1016/j.appet.2019.104353>
- Woo, E., & Kim, Y. G. (2019). Consumer attitudes and buying behavior for green food products. *British Food Journal*, 121(2), 320–332. <https://doi.org/10.1108/bfj-01-2018-0027>
- Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), 429–472. <https://doi.org/10.1177/1094428114562629>