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Food Waste and Loss Management in HORECA: The 5C's Route Guidance

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Abstract:

Purpose: The consumption of high levels of natural resources by Hotels, Restaurants and Catering –HORECA– has a significant impact on the environment. This paper examined the evolution of food waste and loss management in HORECA Supply Chain.

Design/methodology/approach: A mixed methodology is used: bibliometric analysis with SciMat software and a narrative analysis, employing both quantitative and qualitative techniques.

Findings: Authors devise a general model that encompasses the fundamental research areas: the context, internal and external stakeholders, approach, drivers, process management, product or service and results or performance. Furthermore, they present the 5C's Route Guidance, which emphasises the importance of context, raising consciousness, identifying circular models by connecting the different stages of the supply chain, and creating sustainability-oriented methods, models and products, to collectively facilitate the reduction of food waste and loss.

Research limitations/implications: The article's academic implications include defining and positioning the core issues in HORECA supply chain management, providing future research questions, conceptual guidance, and advancing the theory of food waste reduction. On a practical level, it highlights the need to improve management in HORECA companies, raise awareness and call for collaboration between academia and professionals to advance practices to reduce food waste and loss from HORECA. Socially, the use of the 5C's Route Guidance can actively contribute to the achievement of the Sustainable Development Goals.

Originality/value: To identify the current knowledge structure of a complex sector such as HORECA and its role for sustainability through the application of quantitative and qualitative methodologies. The findings aid researchers in achieving more robust studies, expanding the literature on the HORECA sector and its supply chain, and guiding them to focus their studies.

Keywords: HORECA, hospitality, food-waste, food-losses; supply-chain management, resilience, circular economy

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1. Introduction

The commitment to environmental preservation has been evidenced on a global scale through the implementation of various institutional agreements aimed at mitigating the impact of humans on the planet. These include the Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs), and the Kyoto Protocol (UN, 2015). However, the process of urbanisation and the rising incomes of individuals in developed countries have resulted in an escalation in consumer food waste. In industrialised countries, where food is considered "plentiful", consumer attitudes, as well as quality standards such as best-before-dates, can contribute to significant levels of wastage (Wang, Xue, Li, Liu, Cheng & Liu, 2018). This poses significant challenges for restaurants, hotels, and catering companies, with a considerable proportion of their costs stemming from overproduction, leftovers, and food wastage during the preparation and service of food.

The efficient management of resources has been demonstrated to result in substantial financial savings for companies (Pirani & Arafat, 2014). In addition, the benefits related to health, safety, and carbon emissions reduction by decreasing waste transportation in the sector are evident (Ball & Taleb, 2011). Consequently, there has been a marked improvement in waste management processes over the past two decades. However, while some hotels and restaurants have implemented strategies to reduce waste, including food waste (Pirani & Arafat, 2014), others have been reluctant mainly because of the large investments involved (Wang, Chen, Lee & Tsai, 2013). To achieve substantial food waste reduction and cost reductions, it is imperative that organisations enhance their management systems, particularly regarding their supply chain management (Gladysz, Buczacki & Haskins, 2020).

Recent studies (e.g., Dhir, Talwar, Kaur & Malibari, 2020) on food waste in the hospitality and food service sector have revealed a dearth of academic literature and an underdeveloped state in terms of breadth and depth. Dhir et al. (2020) identifies two key gaps in the existing literature: firstly, the lack of generalisability of the data, and secondly, the absence of both quantitative analysis and theoretical frameworks to support the research.

The companies that constitute HORECA are all those involved in the supply of food to consumers outside their homes. This includes suppliers, distributors and operators. Despite the presence of a diversity of applications in various establishments, particularly within the HORECA sector, there is a paucity of development in the field of studies. Significantly, there is a paucity of scientific research focusing on the HORECA sector and its pivotal role in the reduction of food waste and loss. Consequently, there is a necessity to augment the number of insightful articles to obtain an updated picture of the progress that has been made.

Furthermore, it has been determined that there is a paucity of quantitative articles, with some of the extant ones being research with dated data (e.g., Iraldo, Testa, Lanzini & Battaglia, 2017; Li, Wang & Cheng, 2019). Consequently, it is imperative to examine how academia is responding to the transformations of this era. The application and development of circular models in various companies within the sector serves as a case in point. Although such initiatives have been proposed in the hospitality sector (e.g., Sorin & Sivarajah, 2021), they are not yet widespread.

Moreover, while HORECA sector stakeholders could imagine at the beginning of 2020 how the sector was going to function in the future, the sudden pandemic of COVID-19 transformed what were previously considered trends (delivery, digitalisation, etc.) As a result, changes have accelerated, transforming the sector rapidly and forcing the actors involved to "play the game" without being clear about the rules of the game (Kiriom-Iri Observatory, 2022). To achieve this, it is necessary to deepen HORECA value chain relationships and to join forces.

Moreover, the paucity of research on the role of internal stakeholders (employees) is emphasised, despite their pivotal function in food reduction. Conversely, studies pertaining to the three pillars – economic, social and environmental – are deemed essential. While the social impact of the sector under scrutiny is evident, there is a paucity of literature that offers empirical evidence to support this phenomenon. Considering the unprecedented challenges posed by the global pandemic, there is an imperative for the advancement of strategies that enhance organisational resilience. Considering the above and building on the work of Dhir et al. (2020), this study proposes a research agenda specific to HORECA, which synthesises the extant literature on the subject.

The extant literature has focused on the environmental aspects of the HORECA Supply Chain, neglecting others such as social, economic, or managerial. Consequently, the present study aims to provide a comprehensive review of the research field of waste and loss management in the HORECA Supply Chain. The aim of this paper is threefold: firstly, to investigate the knowledge structure; secondly, to propose a future agenda; and thirdly, to present a model for progressing in the waste and loss management in the HORECA Supply Chain research line. The study will address two research questions:

RQ 1: Which is the knowledge structure of the research on waste and loss food management in the HORECA supply chain?

RQ 2: What is the future for research on waste and loss food management in the HORECA supply chain?

To address the questions, the subsequent section presents the background, commencing with a delineation of the HORECA sector and the value chain issue that has precipitated the identification of the necessity to study the issue of food and waste in this channel. The third section employs the PRISMA process to elucidate the methodology applied. The fourth section presents the results obtained from both the bibliometric and narrative analysis of themes. The final section proposes a general model of analysis and a research agenda to underpin the advancement of this research trajectory. The section concludes with a new guide to develop this research line: The 5C's Route Guidance. The final section provides a summary of the main results, exploring their theoretical, practical, and social implications, as well as discussing the limitations of the study and potential future directions for research.

This work constitutes an original contribution due to the relevant themes it combines and the application of mixed methodology (bibliometric and qualitative techniques). It also demonstrates the significance of defining the HORECA sector, from both academic and business perspectives, whose supply chain can play a crucial role in achieving sustainability goals for the future. The study further proposes the 5C's Route Guidance, a framework designed to facilitate the identification of theoretical, practical, and societal implications of the research line. In summary, this work offers a valuable opportunity for reflection, with the potential to stimulate more productive and valuable progress in this field of research.

2. Background

Supply Chain can be defined "as a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer" (Mentzer, DeWitt, Keebler, Min, Nix, Smith & Zacharia, 2001: page 4) According to Zhang, Song and Huang (2009), Supply Chain can be approached by through two perspectives: macro -network of firms engaged in various functions that aim to manufacture and deliver the final product to customers- and micro -a network of nodes that perform activities aimed at delivering finished products to distribution centres or clients-.

An aspect that has been gaining relevance in recent years is sustainability (e.g., Xu & Gursoy, 2015; Modica, Altinay, Farmaki, Gursoy & Zenga, 2020) that ca be identified as a competitive advantage, due to the global drive for environmental awareness (Wang et al., 2013). Also, the profitability and survival of all members of the Supply Chain could be linked to sustainable business practices (e.g., Molina-Azorin, Claver-Cortés, López-Gamero & Tarí, 2009) or even image and reputation enhancement (e.g., Han, Hsu, Lee & Sheu, 2011). Despite hospitality businesses consumed significant amounts of natural resources and directly influencing the sustainability of the environment, research on green supply chain management was very scarce. It was necessary to establish a framework regulation for green restaurants (Wang et al., 2013; Al-Aomar & Hussain, 2017) and the integration of ecology in all marketing programmes, the reduction of waste, saving of energy and materials in cooking, as well as the protection of endangered animals as food material (Wang et al., 2013). Al-Aomar and Hussain (2017) build on the theory of value creation by focusing on ecological know-how and applications and ecological awareness.

A Green Supply Chain Management restaurant is one that controls its Supply Chain activities in an environmentally friendly way. This process also involves other practices such as marketing, purchasing, design, and production from a green perspective (Wang et al., 2013). Customers also have a fundamental role to play within Green Supply Chain in all supply chain processes, so this establishments take them into account in the development of sustainable practices. In fact, thanks to technological advances, customers may be considered as participants in the design,

production, and advertising of sustainable service systems (Sigala, 2014). Also, increased satisfaction, loyalty, and willingness to pay higher prices by customers are associated with economic sustainability practices (Xu & Gursoy, 2015; Modica et al., 2020).

Food service establishments generate a significant proportion of food waste (Buczacki, Gladysz & Palmer, 2021). The importance of food waste lies in losing an opportunity to feed the growing population, in addition to the additional consumption of scarce resources that are used in all activities related to food production and consumption (Martin-Rios, Hofmann & Mackenzie, 2021). Still, more reliable data is needed for the hospitality and restaurant sector (Parry, Harris, Fisher & Forbes, 2020). Despite these reductions, due to the booming hospitality sector and its high impact on the environment, it is necessary to study its responsibility for food waste. Increased waste is understood as an increase in the environmental footprint and its negative consequences on the ecosystem (Pirani & Arafat, 2014). The SDGs are closely linked to food waste, for example, target 12.3 is about halving food waste by 2030, bypassing both consumers and retailers (UN, 2020), where we would include the HORECA sector.

To gain an understanding of where, how, and why food waste is generated, consumption and waste generation must be studied together (Papargyropoulou, Wright, Lozano, Steinberger, Padfield & Ujang, 2016). Waste food could be defined as any by-product or waste product from the production, processing, distribution, and consumption of food (Okazaki, Turn & Flachsbart, 2008). Moreover, the types of waste food can be classified into unavoidable (expired products, leftover food, or vegetables...) and avoidable (overproduction, peeling waste...) (Kaur, Dhir, Talwar & Alrasheedy, 2021).

Efficient resource management not only has a positive impact on the environment, i.g., by diminishing the carbon footprint by reducing orders to suppliers, but also for companies, in the form of cost savings, improved image and relations with different stakeholders, and health and safety advantages (Ball & Taleb, 2011).

Although some researchers differentiate between food loss and food waste, according to Dhir, et al. (2020) they could be the same. The authors look at different stages of the food chain, highlighting the consumption stage, which can be classified according to waste in the home or outside the home (Betz, Buchli, Göbel & Müller, 2015). In the latter case, we would be talking about the consumption in HORECA sector.

Regarding the types of establishments and their sustainable management, the results of Carlisle, Zaki, Ahmed, Dixey and McLoughlin (2021) argue that restaurants have more green competence deficiencies than hotels. Also, the establishment that has been the subject of study in most of the analysed papers are hotels. According to Acampora, Lucchetti, Merli and Ali (2022), several hotels are adopting green practices with the aim of attracting conscientious consumers and improving their economic performance. In this sense, the authors consider the hotel sector as pioneers in the development of sustainable practices.

Furthermore, the sustainable management of food waste is attaining prominence in the context of the circular economy, so many studies are based on this (Alonso-Muñoz, García-Muiña, Medina-Salgado & González-Sánchez, 2022). However, the relevance and applicability of the circular economy in service-dominated industries (e.g., tourism and hospitality) is understudied (Sorin & Sivarajah, 2021). In relation to hospitality and tourism, Camilleri (2021) states that to improve operational efficiency and reduce waste from both production processes and product life cycle, circular economy systems need to be applied (Brown, Bocken & Balkenende, 2019; Camilleri, 2018). Therefore, it is considered that the application of circular economy principles could facilitate the complex management of food waste (Alonso-Muñoz et al., 2022).

3. Methodology

To present a comprehensive overview of extant literature on waste and loss management in the HORECA supply chain, a dual methodological design was employed. Firstly, a quantitative bibliometric analysis was conducted, followed by a qualitative thematic narrative analysis.

Figure 1 describes the process followed to obtain the sample and the different phases of the study. This approach is based on the adaptation of Rickly (2022) under the PRISMA process (Moher, Liberati, Tetzlaff, Altman & Prisma Group, 2010). It is intended to provide clarity and transparency regarding the search and the steps followed to obtain the result of our study.

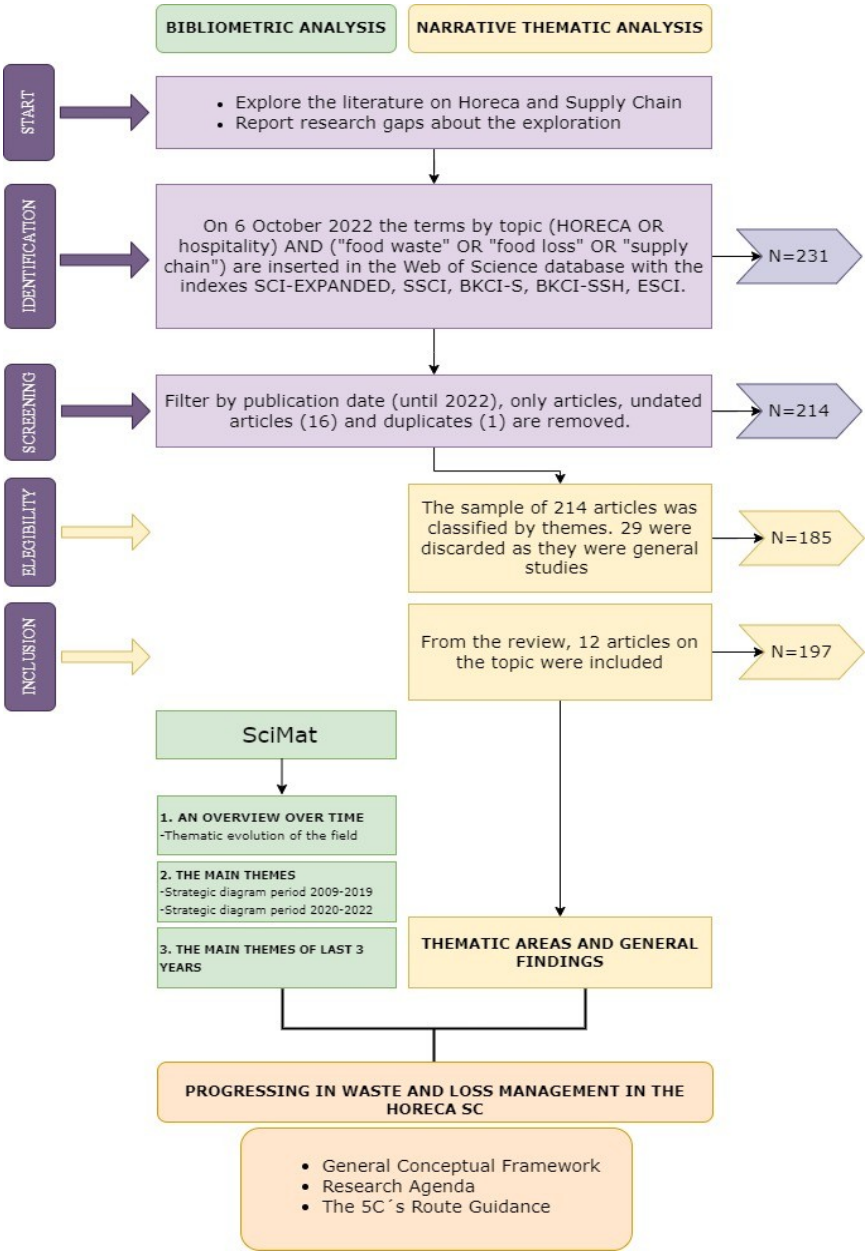

Figure 1. Methodological Process. Own Elaboration considering PRISMA Process

In the initial phase, following the completion of the search (Figure 1) and the retrieval of a sample of 214 articles, a bibliometric analysis was conducted.

To detect the main themes, a co-word analysis was performed using SciMAT software. This technique, which was first described by Callon, Courtial and Laville (1991) and subsequently developed by Cobo, López-Herrera, Herrera-Viedma and Herrera (2011), classifies the relationships of ideas by means of co-occurrence models of pairs of terms from a set of papers. The co-occurrence analysis approach is essential for visualizing emerging trends and guiding future research (Pestana, Wang & Parreira, 2019).

The subsequent filtering process of keywords was conducted in accordance with the following criteria: terms that are synonyms or belong to the same family are grouped in a key word (e.g., "tourist" and "tourists"), and singular or plural terms are grouped in the singular form (e.g., "hotel", "hotels"). Consequently, the initial 1022 keywords were reduced to 746 after the filtration and manual grouping process. Finally, the matrix of co-occurrences and the equivalence index were calculated using the simple centre algorithm and the thematic networks with a minimum network size of 3 and a maximum of 12.

Moreover, this study delves into the analysis of thematic networks created using SciMat. The thematic networks are based on two criteria: density, which measures internal network strength, and centrality, which gauges network interaction. Themes are categorized as motor themes (high centrality and density), basic/transversal themes (underdeveloped but valuable), emerging/disappearing themes (low centrality and density), and well-developed but isolated themes (strong internal links, weak external ones) (Cobo et al., 2011).

The time evolution of the sample is shown in Figure 2. The first publication appears in the year 2009, with significant growth from the year 2019 onwards. It has also been observed that more than half of the documents (131, 60.93%) have been published between 2020 and 2022.

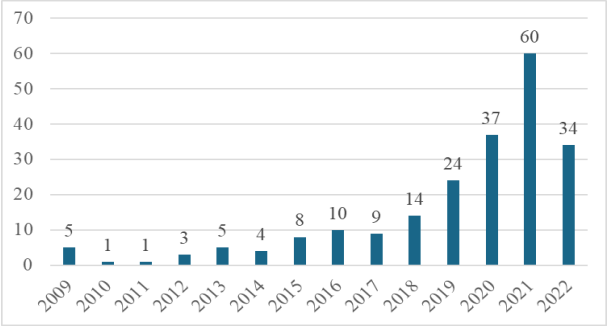

Figure 2. Number of documents per year

The researchers aimed to complement the co-word analysis conducted with SciMat with a qualitative analysis to achieve a more comprehensive understanding of the thematic progress. Therefore, the second part of the study consists of a thematic-narrative analysis.

To carry out this analysis, all the articles in the sample were carefully examined to identify thematic categories to better understand the state of the literature. This involved a thorough reading of the full texts of the sample articles. Following an in-depth review of 214 works, 29 articles were excluded. The authors determined that their main content did not specifically align with the object of study. Although some keywords were related, they were not deemed relevant for the narrative analysis. The exclusion criteria were as follows: the articles addressed the HORECA sector from other perspectives (7 articles) (e.g., focusing on marketing rather than supply chain management), referred to general business rather than supply chain management (8 articles), dealt with the general application of new technologies (2 articles), analysed other sectors (5 articles), or focused on the tourism industry in general (7 articles). Ultimately, 185 articles were selected based on their main theme. Following this exhaustive review, some additional articles were identified as relevant and timely for narrative analysis. Therefore, 197 articles were analysed and grouped. These are presented in the results of each narrative thematic group.

4. Results

4.1. Co-Word Analysis Results

4.1.1. An Overview Over Time

An analysis of the evolution of the themes for the periods (Figure 3) is presented. According to the research of Cobo et al. (2011), the inclusion index of Sternitzke and Bergmann (2009) to determine the level of similarity between two thematic networks is used. Then, a graphic is developed which represents each theme with circles and the lines between thematic networks show the inclusion index. The central nodes are represented by a solid line and non-central nodes by a dashed line. For each network, the number of documents is represented by the size of the circle. The evolution shown in Figure 3 is evidence of the growing interest in the theme. On the one hand, there is a strong relationship between FOOD-LOSS AND WASTE and SUSTAINABILITY, as well as BEHAVIOUR. On the other hand, SUPPLY-CHAIN-MANAGEMENT evolves to ORGANISATIONAL-PERFORMANCE. There is a close relationship between GREEN BUSINESS STRATEGIES and HOSPITALITY and WASTE MANAGEMENT, as well as between ATTITUDES and WASTE MANAGEMENT and GREEN BUSINESS STRATEGIES. For obvious reasons of temporality, it is not possible to observe any relationship or evolution with

CORONAVIRUS. Finally, EMPIRICAL ANALYSES are related in the second period to the nodes of SUPPLY CHAIN MANAGEMENT and HOSPITALITY-AND-TOURISM-INDUSTRY.

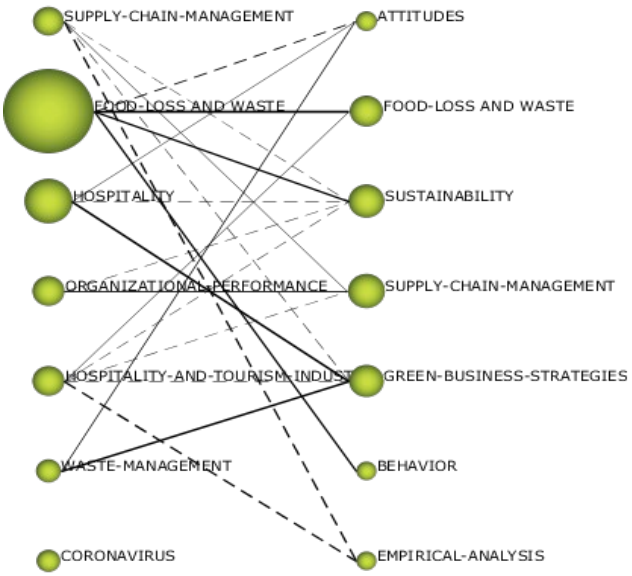

Figure 3. Thematic evolution of the field (number of documents)

4.1.2. A Topic Overview

In this field the last 3 years (2020-2022) account for 60.93% (131 articles) of the papers in the sample analysed. Therefore, to identify the different thematic groups, a strategic diagram of the last three years is represented (Figure 4) based on centrality and density (Callon et al., 1991). This diagram classifies thematic networks into four groups (Figure 4): well-developed and isolated themes (CORONAVIRUS and ORGANISATIONAL PERFORMANCE), motor themes (SUPPLY CHAIN MANAGEMENT and FOOD-LOSS AND WASTE basic themes (HOSPITALITY and HOSPITALITY-AND-TOURISM-INDUSTRY) and emerging themes (WASTE MANAGEMENT).

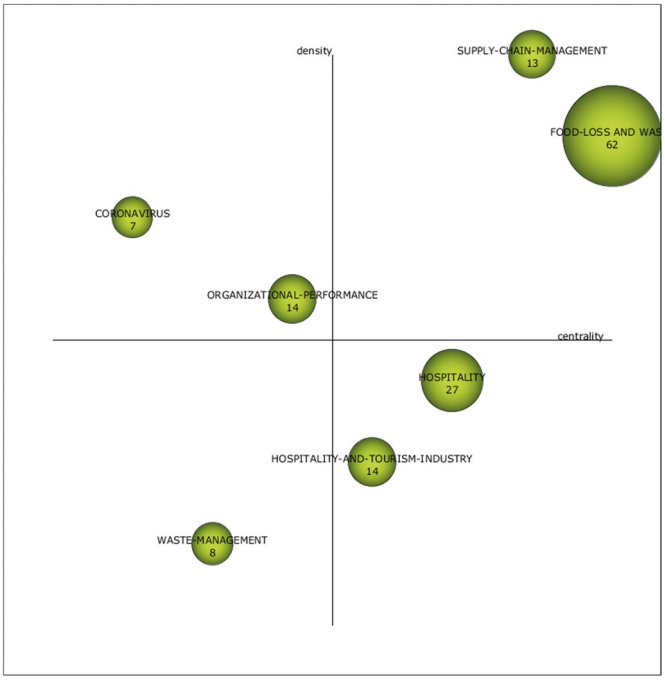

Figure 4. Strategic diagram by number of documents for the period 2020-2022

4.1.3. The Main Themes of the Last Three Years

The subsequent section will present the clusters for the final period analysed. For each identified cluster, an appendix (Appendix A) containing seven tables has been prepared. This appendix comprises a list of the papers that have the greatest impact. This information can be obtained from the corresponding author.

Firstly, Figure 5 shows the thematic networks of the motor themes. Regarding **SUPPLY CHAIN MANAGEMENT** (Appendix A.1) studies have especially focused on studying its relationship with both FINANCIAL and ENVIRONMENTAL performance and ECONOMIC IMPACTS AND RESULTS. Also, studies have focused on three main theoretical approaches to management: CORPORATE SUSTAINABILITY, CORPORATE SOCIAL RESPONSIBILITY, and the RESOURCE BASED VIEW. Although it has also been studied in relation to SUSTAINABLE DEVELOPMENT. Regarding the supply structure, only ENERGY CONSUMPTION has been studied upstream. CUSTOMER MANAGEMENT focused on their EXPERIENCE has been explored. Finally, concerning the sectorial context, only the HOTEL INDUSTRY is addressed in the study of the supply chain.

For **FOOD LOSS AND WASTE** (Appendix A.2), the objective is to achieve SUSTAINABILITY, the context is about RESTAURANTS and FOOD SERVICES within the framework of TOURISM. The mean is REDUCTION and PREVENTION, and the agent is the CONSUMER. In the latter case, issues such as BEHAVIOUR, SERVICES, CONSUMPTION MANAGEMENT, or social patterns, for example, GENDER DIVERSITY, have been considered.

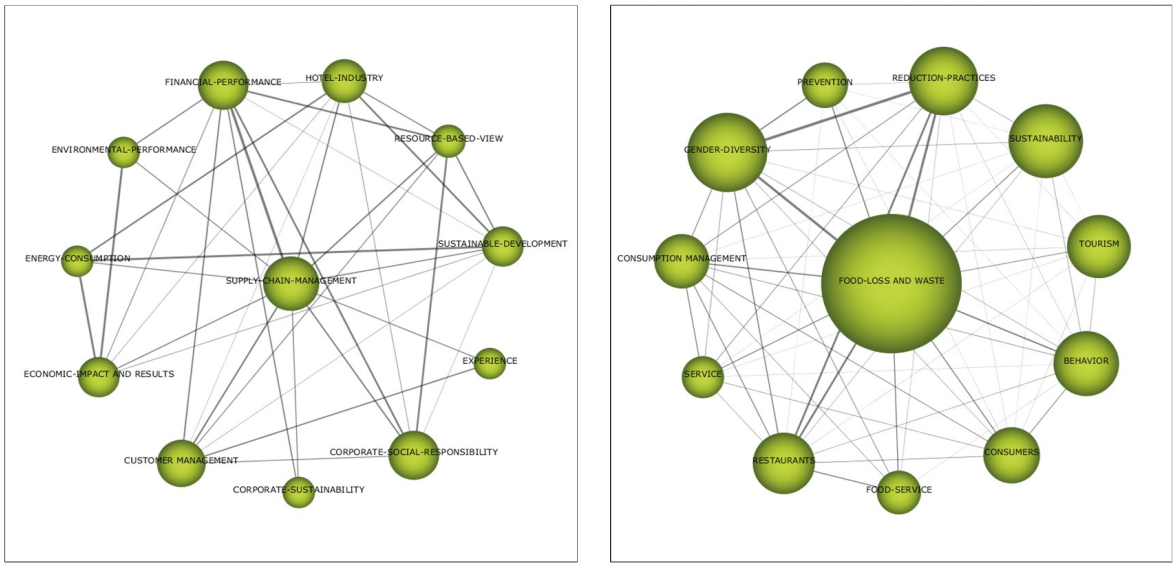

Figure 5. Thematic networks of SUPPLY CHAIN MANAGEMENT and FOOD-LOSS AND WASTE (2020-2022)

The basic groups thematic networks are depicted on Figure 6. For **HOSPITALITY** (Appendix A.3) cluster, most of the issues are related to how to incorporate food loss management into business strategy or operations. Whether as BUSINESS STRATEGIES, GREEN MANAGEMENT, ENVIRONMENTAL or BUSINESS MODELS or at the level of the SUPPLY CHAIN and OPERATIONAL or LEFTOVERS MANAGEMENT. It has also been studied in the setting of two contexts, that of CATERING and INTERMEDIATION in the TOURISM INDUSTRY.

The thematic group **HOSPITALITY-AND-TOURISM-INDUSTRY** (Appendix A.4) which covers a large part of the tourism industry, has many aspects that are treated, mostly in silos. While they could be grouped into 1) environmental sustainability issues such as GREEN HOTELS, ENVIRONMENTAL MANAGEMENT SYSTEMS, ENVIRONMENTAL SUSTAINABILITY or WATER CONSERVATION, 2) Challenges, and 3) consumer issues such as PLANNED BEHAVIOUR, INTENTION or SATISFACTION. In addition, CIRCULAR ECONOMY and the relationship between HOTELS and COLLABORATIVE NETWORKS stand out.

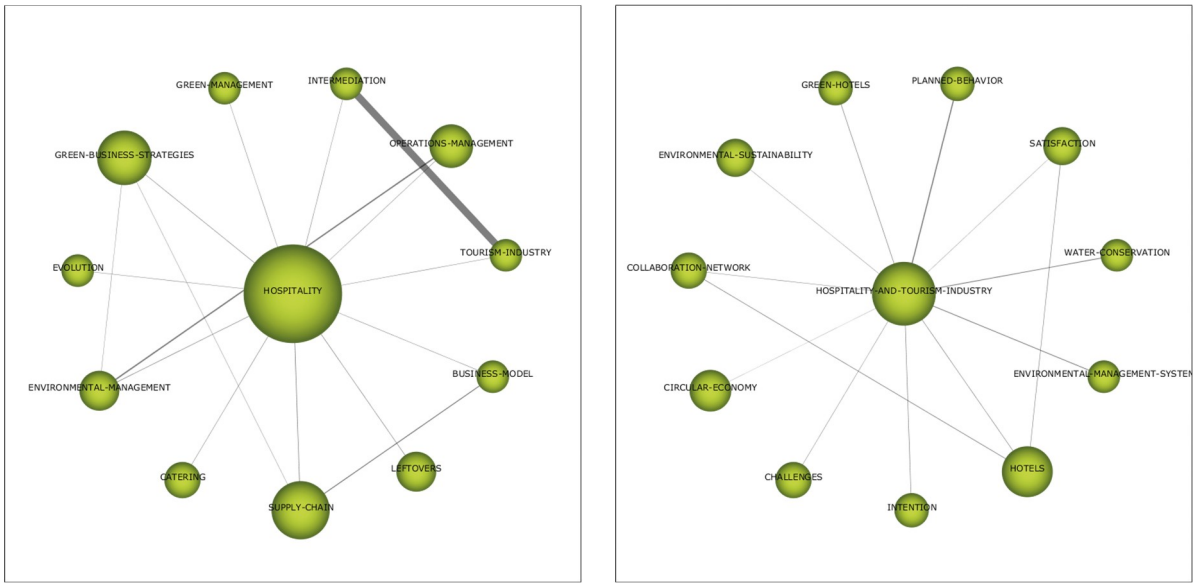

Figure 6. Thematic networks of HOSPITALITY-AND-TOURISM-INDUSTRY and HOSPITALITY (2020-2022)

Figure 7 present well-developed thematic networks. For **ORGANISATIONAL PERFORMANCE** (Appendix A.5) studied themes appear more isolated and can be grouped into three elements. Innovation and related elements such as TECHNOLOGY, ECO INNOVATION or PRODUCT INNOVATION strongly linked to GREEN INNOVATION. Human Resource Management and EMPLOYEE BEHAVIOUR and PERSPECTIVE of study from SOCIAL RESPONSIBILITY or from GREEN SUPPLY CHAIN MANAGEMENT.

For the case of the **CORONAVIRUS** (Appendix A.6) the studies are focused on BUSINESS MANAGEMENT and RESILIENCE. There is an application to the case of one of the agents of the system, the FARMERS, and their effects on AGRICULTURAL SUPPLY CHAIN MANAGEMENT.

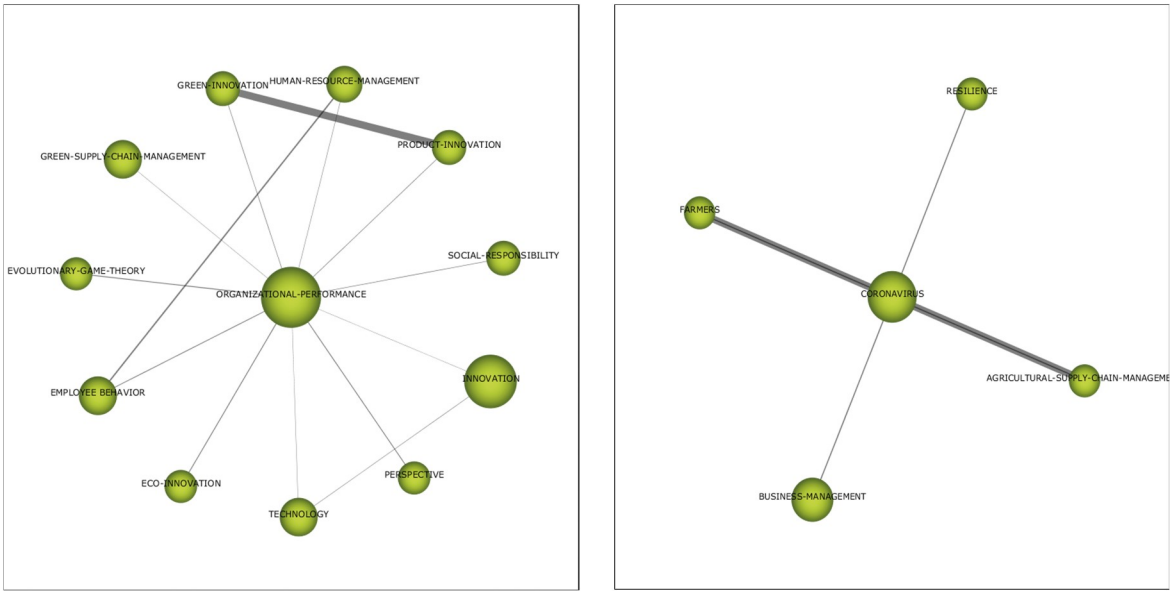

Figure 7. Thematic networks of CORONAVIRUS and ORGANIZATIONAL-PERFORMANCE (2020-2022)

The last thematic network of Figure 8 presents the emerging thematic networks. This is **WASTE-MANAGEMENT** (Appendix A.7) cluster. The LOSS, PLATE WASTE and ATTITUDES are the factors analysed in the FOOD-SERVICE-INDUSTRY to develop STRATEGIES to help improve ENVIRONMENTAL IMPACT.

Figure 8. Thematic networks of WASTE-MANAGEMENT (2020-2022)

4.1.4. A General Conceptual Framework for the Management of Food Waste and Loss in the Hospitality and Restaurant Industry Supply Chain

In accordance with Patriotta's (2020) standpoint, a literature review facilitates a retrospective analysis, introspection, acquisition of insights, evaluation, and, in certain instances, enhancement of prevailing theories pertaining to a particular phenomenon. Building upon this perspective, the aim of this section is to construct a comprehensive model based on the identified themes from the bibliometric analysis. To facilitate this endeavour, a general framework has been developed, encompassing the identified themes and their interrelationships (Table 1).

In relation to the context or industry, the Coronavirus pandemic has indicated a process of change, with particular emphasis on the hotel and restaurant sectors, and even on the sustainability of these through the concept of "Green Hotels". However, the food-service industry, which is expected to experience significant growth in the coming years, has already been identified as an emerging issue and should be the focus of future studies. In relation to stakeholders, the study of consumers as external stakeholders in a sector that is particularly consumer-driven is of particular importance. The analysis of their behaviour is now being superseded by research into their attitudes towards food waste and their new view of sustainability. However, it is recommended that other actors who play a relevant role in the management of the food supply chain, such as producers and intermediaries, be reintroduced to the field. With respect to the analysis of internal stakeholders, research has been conducted on the behavioural patterns of employees. Nevertheless, these individuals have not been recognised as fundamental or emerging concerns. This reveals a paucity of research on internal stakeholders, who could be central to the development of sound supply chain management practices in the sector.

Furthermore, an evolution in terms of approach is evident. This progression encompasses a transition from conventional business management or social responsibility models, through green strategies and business models, to more contemporary paradigms underpinned by a resource-based view or sustainability. Concomitantly, strategies are being formulated to address the issue of real food waste management. Consequently, adopting a more strategic stance, we propose a reversion to fundamental themes, namely collaborative business models within the value chain, alongside the incorporation of the study of business symbiosis, a concept more prevalent in other industrial sectors.

In terms of drivers, the study of resilience as a dynamic capacity to survive turbulent situations, such as the health crisis, as well as the use of green technologies, can be detected. These findings are particularly significant in the context of a resource-based view (RBV) and the development of waste reduction practices. It is noteworthy that no emerging themes have been identified in this regard, although their relevance is noteworthy.

Another subject that has been the focus of much discussion is the management process. Research on the agricultural supply chain and sustainability-related terms such as "green supply chain", "green operation" or

"environmental system" have evolved towards the circular economy and customer supply chain. The role of human resources and consumption in process management within the context of a circular supply chain remains a subject that requires further exploration.

Themes	Well-developed	Basic	Motor	Emerging
Contexts/Industries	Coronavirus	Hospitality Hospitality-and-tourism-industry Challenges Green Hotels Hotels	Tourism Hotel industry **Hotel** **Restaurants**	**Food-service-industry**
External Stakeholders	**Farmer**	Catering **Intermediation** Planned behaviour. Intention	Customer (Gender diversity) **Consumers** **Behaviour**	**Attitudes**
Internal Stakeholders	Employee Behaviour			
Approach	Business Management Social Responsibility	Green business strategies **Business model** **Collaboration network**	**RBV** Corporate Social Responsibility Corporate Sustainability **Sustainability** **Sustainability development**	Strategies
Drivers	**Resilience** **Technology** Innovation (Eco, Green)		Reduction practices	
Process Management	Agricultural supply chain Green supply chain **Human Resource**	Green Operation Environmental System **Supply chain** **Circular Economy**	Customer Supply Chain **Consumption**	Waste-management
Product/Service	Product innovation	**Leftover** Water conservation Satisfaction	Energy consumption Experience Service **Food service** **Food-loss and Waste**	**Plate waste** **Losses**
Results/Performance	Organizational performance	Environmental sustainability	Financial Environmental **Economic impacts** and results	**Environmental impact**

Table 1. A general conceptual framework for the management of food waste and loss in the hospitality and restaurant industry supply chain

A close examination of products and services has been undertaken to adapt them to innovations related to resource conservation (water, electricity, etc.) and to the satisfaction derived from service experiences. Furthermore, leftovers and food waste in food service represent a pivotal component of research in this domain, underscoring the emergence of the issue of Plate Waste Losses. Further research into the various forms of food loss or waste in relation to emerging food consumption trends will facilitate a more comprehensive understanding of the mechanisms for their mitigation.

Finally, in the results and performance section, studies on organisational performance and environmental sustainability are highlighted, as well as their impacts, especially economic ones. The further development of models that explain and measure these results and consider the important social impacts of these processes remains a priority.

4.2. Narrative Thematic Analysis

A narrative examination was conducted to gain a deeper insight into the literature previously analysed. The team of researchers has reviewed systematically the selected documents (197) to identify the main themes and their findings. A conceptual categorisation of the documents by fields of study has been carried out (Table 2).

Thematic area (Nº docs.)	General findings
General Management (11)	• Collaboration with internal and external actors is necessary to improve the quality of services, ensure survival and enhance innovation capabilities.
HORECA (9)	• Reducing food waste is a great solution for the environment and the economic savings of companies.
Technology and Innovation (20)	• Increased participation in green innovation is needed. • Increasing use of smart applications: supply chain, smart farming. • To adopt environmental technologies, firms need information on ecology, feasibility of projects and government support. • New technologies, such as the use of big data, can improve competitive advantage and company performance.
Stakeholders (48)	• People need to be informed about food waste by companies to modulate behaviours, attitudes, and preferences.
Supply Chain in Hospitality (25)	• Better results for companies with high environmental initiatives. • All Members of the supply chain must be immersed in sustainable practices to achieve true sustainability.
Sustainable Management (31)	• Increasing importance of environmental issues in different business areas and strategy levels • Use of green marketing. • Sustainable behaviour may vary depending on the type of establishment.
Waste Management (53)	• Strong relationships are needed: government support, employee, and customer collaboration. • Initial investment needed.

Table 2. Thematic Analysis: areas and findings

The analysis of the published literature shows that the study of the supply chain in the HORECA sector is not very extensive. However, it is more frequent in hotels. The global economic crisis has compelled supply chains to become more profitable and sustainable (Malik, Abdallah & Hussain, 2016; Al-Aomar & Hussain, 2017), which may have increased interest in studying their management. Stakeholder perspectives have gained more attention since 2020, with the highest number of publications in 2021 (14) and with consumer behavior being the most widely studied. Some studies suggest that the way we consume (Okumus, Taheri, Giritlioglu & Gannon, 2020) and purchase food (Parfitt, Croker & Brockhaus, 2021) are directly related to food waste. Also, technological advancements and the Internet of Things (IoT) are making supply chains highly efficient and smart (Shamim, Cang, Yu & Li, 2017). As a result, literature highlights the growing interest in technology and innovation. In 2020, more than 50% of article production (12 in total) focused on this topic. Technological trends related to blockchain (e.g., Rashideh, 2020; Filimonau & Naumova, 2020), big data (e.g., Horng, Liu, Chou, Yu & Hu, 2022), and green technologies (e.g., Gurlek & Koseoglu, 2021; Sun, Cao & Xing, 2021) stand out in the tourism sector and particularly in the hotel sector. Aragón-Correa, Martin-Tapia and de-la-Torre-Ruiz (2015) indicate that environmental issues were growing in the field of tourism and hospitality, coinciding with the publication of the UN SDGs for the 2030 Agenda. This trend has grown since the COVID-19 pandemic, with 17 articles published in

2020 on sustainability. The literature on waste management is particularly notable for its emphasis on food waste, which is especially relevant in the HORECA sector. According to Malefors, Callewaert, Hansson, Hartikainen, Pietiläinen, Strid et al. (2019), as much as 20% of food goes to waste, while Fieschi and Pretato (2018) recommend combining biodegradable and compostable products to be recycled together with organic waste. Finally, other articles that are difficult to classify are grouped under general management, reflecting the general idea that sustainable management can be beneficial for the company in economic terms.

5. Insights for Advancing Research on Food Loss Food Management in the HORECA Sector

5.1. A Research Agenda for Studying Food Waste and Loss Management in the HORECA Supply Chain

In that section, a research agenda with five main research lines (RL) are proposed (Table 3). Firstly, circular models (RL1) are identified. Circular economy is a current context, and an instrumental paradigm based on eco-efficiency from two perspectives: cost reduction and environmental sustainability. They may be implemented to improve losses in Supply Chain and technology could be a key mechanism to achieve it. Both to innovate in products and/or services and to improve communication and collaboration between all actors in Supply Chain. In this sense, the development of technological applications that build a community among all the agents involved in Supply Chain is a fundamental step towards reaching circularity. Among other issues, it would be possible to identify opportunities to share or transfer unused materials between actors in the chain with the consequent cost savings and food losses reduction.

Resilience (RL2) is defined as the organisational capacity that enhances sustainability in terms of permanence in the face of disruptive changes. The main problem identified in the Supply Chain is that in critical situations they do not have enough capacity to operate. In short, more agile, and flexible Supply Chain should be created, that allow them to get closer to producers to develop reuse strategies. In addition, as Dhir et al. (2020) argue, contribute at the social level. Those elements that are going to be left over in the Supply Chain could also be donated to town councils, schools, or different NGOs. In this sense, it avoids waste and acts in a socially responsible behaviour. The proper management of food and waste helps to make a Supply Chain more resilient and generates resilience at a general level in society.

The HORECA Supply Chain is composed of different stakeholders (RL3): Producers (farmers, stockbreeders, fishermen...), suppliers (bakery, butchers, fisheries...), which according to AECOC (2022) are usually small, although there is coexistence between large and small suppliers. Distributors, who are responsible for distribution to companies in the channel (restaurants, bars, schools, hospitals, etc.) As far as companies are concerned, an important stakeholder group to consider is the employees. Finally, the consumers, who are the end clients of these establishments. To achieve higher-order objectives related to, for example, poverty reduction or zero hunger, all actors in the chain must be involved. Deepening mechanisms that enable greater engagement of the stakeholder ecosystem is a must. Frameworks such as the stakeholder identification model or the stakeholder engagement standard can be a starting point. Concepts such as power, legitimacy, and urgency can be a valuable reference for identifying the most relevant actors in the design of business strategy. Likewise, achieving an integrated approach to stakeholder engagement is a fundamental accountability mechanism for dealing with sustainability concerns. In the case of consumers, for example, the responsibility of business is to be open to their preferences and needs, giving them the power to impose certain consumption requirements. Thus, its values become urgent and legitimacy. Meeting these demands can help a socially responsible company to maintain a significant competitive advantage.

The research carried out shows the need for food waste reduction strategies and practices (RL4). In line with the need to migrate to circular models and to deeply involve stakeholders, it is proposed to deepen collaborative strategies. Both in vertical relationships, which are more cooperative, and in horizontal relationships, which are more coopetitive. Strategies might be different for food loss than for food waste. In this case, practices associated with improving food loss would be oriented towards harnessing all food and improving cooking techniques, while practices that reduce food waste should be oriented towards the quantities or portions of food served, the orders placed and, in short, circular proposals that connect the members of the sector's Supply Chain. To implement food waste reduction practices, all stakeholders must be aware of the need to reduce food waste. Including these objectives in the strategic process and achieving some alignment between the different actors can help to move to action.

More strategic theoretical approaches such as coopetition and the management of inter-firm alliances can provide new insights. Likewise, concepts such as industrial symbiosis could reveal new contributions from industrial ecology in other sectors such as HORECA.

In addition, economic, social, and environmental impacts (RL5) should be highlighted. The literature review shows that the HORECA channel is aware of its negative impacts. However, studies are needed to demonstrate this situation. Thus, knowing what the impacts are in economic terms will serve as a starting point to justify and raise awareness towards the implementation of the designed strategies. The social and environmental impacts of this sector are closely linked to the 2030 Agenda and the SDGs. In terms of social impacts, food waste reduction practices in HORECA can contribute to the reduction of poverty (SDG1) and hunger (SDG2) in the world through cooperative partnerships between actors in the Supply Chain (SDG17). Consequently, reducing inequalities (SDG10). Also, in terms of environmental impacts, these practices are directly related to energy and resource savings (SDG6, 7, 13) which translate into responsible and sustainable destinations and cities (SDG11) through the implementation of more responsible consumption and production (SDG12). The importance of this relationship lies in the need for research to collaborate in creating a better world.

Based on the lines of research carried out, a series of research questions are proposed to assist in the development of future research (Table 3).

Research lines	Research questions (RQ)
Circular models (RL1)	Which circular models could be implemented? How can new technologies help develop circular models? Are circular models cost-effective?
Resilience (RL2)	What are the problems that can lead to less resilient actors in the supply chain? What are the constraints that can lead to less resilient actors in the Supply chain? How can Supply Chain be improved to become resilient companies? What kind of strategies contribute to making the sector more resilient?
Stakeholders (RL3)	How is the HORECA supply chain constituted? How important are the different stakeholders? What role do human resources play in food reduction? How could stakeholders' awareness and engagement mechanism could be developed? How can be customers' demands met under sustainability criteria?
Strategies and practices (RL4)	In what form could partnerships for collaboration and cooperation be established between the actors that make up the HORECA supply chain? What cooperation and coopetition strategies are currently being developed between the agents of the HORECA supply chain? How are the relationships between the actors that constitute the HORECA supply chain? Could be the strategies for food waste and food loss different?
Economic, social and environmental impacts (RL5)	How engaged is the HORECA sector with the economic, environmental, and social impact of food waste and loss? How aware of food waste is the HORECA sector? How can technology influence the achievement of more sustainable HORECA sector? What is the impact on Sustainable Development Goals?

Table 3. Research lines and future research questions

5.2. The 5C's Route Guidance

To achieve meaningful scientific advancements, it is imperative not only to formulate focused research questions but also to present them in a manner that is applicable to real-world practices. Through a deeper analysis of the overall findings derived from the document sample, we have been able to develop an action roadmap for mitigating food waste in HORECA supply chain management. The proposed framework, called the "The 5C's Route Guidance," is built upon five key factors: context, awareness, circularity, connection, and creation (see Figure 9).

(C1) **Context.** The context is relevant for the development of any of the actions in the model. After the COVID-19 pandemic, we must be aware of the change of era we are going through. Moreover, supply chains must become more profitable and sustainable because of the significant global economic crisis (Malik et al., 2016; Al-Aomar & Hussain, 2017). Thus, the sector must be resilient and adapt to the changes that are taking place to survive.

(C2) **Consciousness.** Environmental issues in hospitality are on the rise (Aragón-Correa et al., 2015). Therefore, environmental awareness must be reflected in all aspects of the supply chain. For example, food waste may be related to the way we consume (Okumus et al., 2020) and the way we acquire food (Parfitt et al., 2021). Thus, the habits that employees develop outside of work, as consumers, could be significant for their professional development training courses related to the environment, food waste and its consequences are suggested. It is necessary for consumers, employees and society to be informed about food waste. Communication is a must to achieve improvements in behaviour, attitudes, and preferences, especially when people come to travelling.

(C3) **Circularity.** Supply chains are evolving towards greater efficiency and intelligence thanks to technological advancements (Shamim et al., 2017). However, there is a need to move towards the circular economy as a process within the management model. Circular models should be used to improve food waste and harnessing resources more efficiently. The transition to circular models is beneficial not only for the environment but will also be reflected in the company's profits, as it will result in significant cost savings.

(C4) **Connection.** The green supply chain approach also includes practices such as marketing, purchasing, design, and production, all from a sustainable perspective (Wang et al., 2013). Therefore, connectivity among all supply chain actors is crucial. All actors involved must be connected and maintain a close relationship. Human resources and technology are of great importance. In this respect, cooperation needs to be generated both inside and outside the company.

(C5) **Creation.** The creation of sustainability-oriented methods, strategies, processes and management models and products in the sector using new technologies. Moving towards green technologies may also lead to an improvement in the company's competitiveness as well as in profits. However, an initial investment is required, for which government support is being sought. In this regard, it could be explored how technological trends that stand out in the tourism sector, such as big data (e.g., Horng et al., 2022), blockchain (e.g., Rashideh, 2020; Filimonau & Naumova, 2020), and green technologies (e.g., Gurlek & Koseoglu, 2021; Sun et al., 2021), can be leveraged.

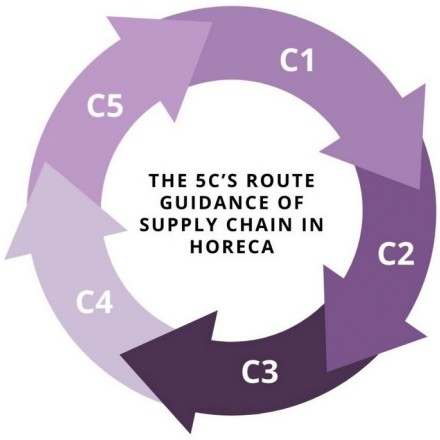

Figure 9. The 5C's Route Guidance of Supply Chain in HORECA

6. Conclusions

The present study has examined the evolution of waste and loss food management in the HORECA supply chain, with a view to offering a model that encompasses the fundamental areas of research.

The academic implications of this work are significant and can be summarized as follows. Firstly, it contributes to the research field of the supply chain, specifically within the HORECA sector, which plays an increasingly crucial

role in reducing food waste and loss. Secondly, through a comprehensive literature review employing both quantitative and qualitative techniques, this work helps to define and position the central research topics within this domain. More specifically, this paper proposes a research agenda and a model that encapsulates the emerging trends in the field. This model serves as a guiding conceptual map for researchers, shedding light on current investigations and pointing towards future research directions. Importantly, the model is designed in line with the essence of the Supply Chain, reflecting a collaborative process that encompasses all lines of research. It identifies key aspects such as the "where" (RL1), the "why" (RL2), the objectives and stakeholders (RL3), the methodology (RL4), and the outcomes (RL5) of the research.

In terms of practical implications, strengthening the management capabilities of companies in the HORECA sector is deemed necessary. This involves considering both the contextual factors (C1) and stakeholders as well as the interconnected operational and management processes. Efforts should be made to raise awareness among all participants in the Value or Supply Chain system (C2), ensuring alignment of objectives regarding waste reduction, zero loss, and the achievement of shared social and environmental goals. Collaboration and partnerships among chain members, prior to reaching the consumer, should be fostered to implement these objectives. Additionally, value chain actors need to work on circularity (C3), developing innovation capacities while leveraging information and communication technologies to enhance information availability and impact measurement. Establishing effective communication channels (C4) among actors and processes can facilitate the delivery of innovative solutions based on consumer needs and preferences, leading to cost reduction and increased resilience to change or crises within the chain. Lastly, efforts should be made to establish simple and shared measures and indicators that enable companies to assess their performance in environmental, social, and economic terms. This will facilitate the measurement of progress towards sustainability goals across the concerned organizations.

This research also contributes to the advancement of more sustainable tourist destinations, in terms of social implications. The development (C5) of systems, supported by new technologies, to reduce food waste and mitigate environmental pollution is viewed as a transformative action that can propel destinations towards becoming smart cities. Additionally, the culinary culture, encompassing food preparation, marketing, and consumption, stands as a vital component in enhancing tourism services (Stankov, Fidan, Toskov, Dimitrova & Nikovska, 2019). Therefore, it is regarded as a key element in tourists' choice of destination. Moreover, recognizing consumers as a crucial stakeholder group, it becomes imperative to foster environmentally sustainable consumption habits. By doing so, consumers actively contribute to the achievement of sustainable development goals, such as the elimination of poverty (SDG1) and zero hunger (SDG2). Simultaneously, professionals within the tourism sector, through the adoption of sustainable practices, play their part in promoting affordable and clean energy (SDG7) as well as responsible production and consumption (SDG12). In particular, the indicator 12.5, which aims to substantially reduce waste generation through prevention, reduction, recycling and reuse by 2030. Furthermore, collaborative efforts between consumers and professionals are crucial for the development of sustainable cities and communities (SDG11). Furthermore, it is worth noting that the HORECA sector is often regarded not as a standalone sector but as a distribution channel, despite its potential to play a significant role in advancing the Sustainable Development Goals (SDGs).

Food policy development is increasingly taking place through collaborative governance, with the aim of promoting healthy lifestyles (Lelieveldt, 2023). Thus, the need for collaboration with public policies to influence citizens' habits is required. Keeping the population aware of food waste and loss will lead to more sustainable habits in people's daily lives and in their workplaces. In this way, the well-being of the population will be reflected.

Moreover, the speed with which new trends have been implemented in the HORECA sector requires the consideration of models such as the one presented in this article. For example, given that 5.2% of sales in the sector correspond to delivery (Kiriom-Iri Observatory, 2022) and that this trend could be increasing, it could contribute to food waste or loss. For this reason, there are calls for models based on circular processes that reduce the impact, such as the 5C's Model. Also, Experts such as Fernando García Baladía (head of the HORECA Channel in the Procurement Department of the Food Bank Foundation of Madrid, Spain) say that artificial intelligence techniques are beginning to be used to combat food waste, in addition to taking measures to address the new Food Loss and Waste Prevention Act (InfoHoreca, 2023).

Hence, it becomes crucial to understand the extent and nature of research being conducted in this area. Therefore, it is highly relevant to acknowledge that this article contributes to the theoretical advancement of the HORECA sector and emphasizes the significance of an efficient Supply Chain in addressing the issue of food waste.

Finally, it is crucial to acknowledge the limitations of this article. While the use of a specific bibliometric software provides a focused perspective, it can be enhanced by considering alternative programs such as VosViewer. Furthermore, employing complementary methodologies like content analysis would offer a more comprehensive understanding of the subject matter. Additionally, incorporating additional information from sources like the grey literature (Adams, Smart & Huff, 2017) would expand the analysis's scope, providing a more practical approach that considers specific regulatory and business management initiatives.

Regarding research development, conducting quantitative studies that specifically focus on identifying relationships within the 5Cs route guidance of the HORECA supply chain would yield valuable and robust research results in this field. Such studies would contribute significantly to advancing our understanding and generating practical insights for both academia and industry.

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References

Acampora, A., Lucchetti, M.C., Merli, R., & Ali, F. (2022). The theoretical development and research methodology in green hotels research: A systematic literature review. *Journal of Hospitality and Tourism Management,* 51, 512-528. https://doi.org/10.1016/j.jhtm.2022.05.007

Adams, R.J., Smart, P., & Huff, A.S. (2017). Shades of grey: guidelines for working with the grey literature in systematic reviews for management and organizational studies. *International Journal of Management Reviews,* 19(4), 432-454. https://doi.org/10.1111/ijmr.12102

AECOC (2022). HORECA. Available at: https://www.aecoc.es/actividad/horeca/ (Accessed: December 2022).

Al-Aomar, R., & Hussain, M. (2017). An assessment of green practices in a hotel supply chain: A study of UAE hotels. *Journal of Hospitality and Tourism Management*, 32, 71-81. https://doi.org/10.1016/j.jhtm.2017.04.002

Alonso-Muñoz, S., García-Muiña, F.E., Medina-Salgado, M.S., & González-Sánchez, R. (2022). Towards circular economy practices in food waste management: a retrospective overview and a research agenda. *British Food Journal,* 124(13), 478-500. https://doi.org/10.1108/bfj-01-2022-0072

Aragon-Correa, J.A., Martin-Tapia, I., & de-la-Torre-Ruiz, J. (2015). Sustainability issues and hospitality and tourism firms' strategies: Analytical review and future directions. *International Journal of Contemporary Hospitality Management,* 27(3), 498-522. https://doi.org/10.1108/ijchm-11-2014-0564

Ball, S., & Taleb, M.A. (2011). Benchmarking waste disposal in the Egyptian hotel industry. *Tourism and Hospitality Research,* 11(1), 1-18. https://doi.org/10.1057/thr.2010.16

Betz, A., Buchli, J., Göbel, C., & Müller, C. (2015). Food waste in the Swiss food service industry–Magnitude and potential for reduction. *Waste management,* 35, 218-226. https://doi.org/10.1016/j.wasman.2014.09.015

Brown, P., Bocken, N., & Balkenende, R. (2019). Why do companies pursue collaborative circular oriented innovation? *Sustainability,* 11(3), 635. https://doi.org/10.3390/su11030635

Buczacki, A., Gładysz, B., & Palmer, E. (2021). HoReCa food waste and sustainable development goals–A systemic view. *Sustainability,* 13(10), 5510. https://doi.org/10.3390/su13105510

Callon, M., Courtial, J.P., & Laville, F. (1991). Co-word analysis as a tool for describing the network of interactions between basic and technological research: The case of polymer chemsitry. *Scientometrics,* 22, 155-205. https://doi.org/10.1007/bf02019280

Camilleri, M.A. (2018). The circular economy's closed loop and product service systems for sustainable development: A review and appraisal. *Sustainable Development,* 27(3), 530-536. https://doi.org/10.1002/sd.1909

Camilleri, M.A. (2021). Sustainable production and consumption of food. Mise-en-place circular economy policies and waste management practices in tourism cities. *Sustainability,* 13(17), 9986. https://doi.org/10.3390/su13179986

Carlisle, S., Zaki, K., Ahmed, M., Dixey, L., & McLoughlin, E. (2021). The imperative to address sustainability skills gaps in tourism in Wales. *Sustainability,* 13(3), 1161. https://doi.org/10.3390/su13031161

Cobo, M.J., López-Herrera, A.G., Herrera-Viedma, E., & Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of informetrics,* 5(1), 146-166. https://doi.org/10.1016/j.joi.2010.10.002

Dhir, A., Talwar, S., Kaur, P., & Malibari, A. (2020). Food waste in hospitality and food services: A systematic literature review and framework development approach. *Journal of Cleaner Production,* 270, 122861. https://doi.org/10.1016/j.jclepro.2020.122861

Fieschi, M., & Pretato, U. (2018). Role of compostable tableware in food service and waste management. A life cycle assessment study. *Waste management*, 73, 14-25. https://doi.org/10.1016/j.wasman.2017.11.036

Filimonau, V., & Naumova, E. (2020). The blockchain technology and the scope of its application in hospitality operations. *International Journal of Hospitality Management,* 87, 102383. https://doi.org/10.1016/j.ijhm.2019.102383

Gładysz, B., Buczacki, A., & Haskins, C. (2020). Lean management approach to reduce waste in HoReCa food services. *Resources,* 9(12), 144. https://doi.org/10.3390/resources9120144

Gürlek, M., & Koseoglu, M.A. (2021). Green innovation research in the field of hospitality and tourism: The construct, antecedents, consequences, and future outlook. *The Service Industries Journal,* 41(11-12), 734-766. https://doi.org/10.1080/02642069.2021.1929930

Han, H., Hsu, L.T.J., Lee, J.S., & Sheu, C. (2011). Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions. *International journal of hospitality management,* 30(2), 345-355. https://doi.org/10.1016/j.ijhm.2010.07.008

Horng, J.S., Liu, C.H., Chou, S.F., Yu, T.Y., & Hu, D.C. (2022). Role of big data capabilities in enhancing competitive advantage and performance in the hospitality sector: Knowledge-based dynamic capabilities view. *Journal of Hospitality and Tourism Management,* 51, 22-38. https://doi.org/10.1016/j.jhtm.2022.02.026

InfoHoreca (2023). La hostelería está dando los primeros pasos para reducir su desperdicio alimentario. Available at: https://www.infohoreca.com/noticias/20230928/hosteleria-ley-desperdicio-alimentario

Iraldo, F., Testa, F., Lanzini, P., & Battaglia, M. (2017). Greening competitiveness for hotels and restaurants. *Journal of Small Business and Enterprise Development,* 24(3), 607-628. https://doi.org/10.1108/jsbed-12-2016-0211

Kaur, P., Dhir, A., Talwar, S., & Alrasheedy, M. (2021). Systematic literature review of food waste in educational institutions: setting the research agenda. *International Journal of Contemporary Hospitality Management,* 33(4), 1160-1193. https://doi.org/10.1108/ijchm-07-2020-0672

Kiriom-Iri Observatory (2022). Nuevos Desafíos de Transformación Comercial en el Canal Horeca. Available at: https://observatoriokiriomiri.com/

Lelieveldt, H. (2023). Food industry influence in collaborative governance: The case of the Dutch prevention agreement on overweight. *Food Policy,* 114, 102380. https://doi.org/10.1016/j.foodpol.2022.102380.

Li, Y., Wang, L.E., & Cheng, S. (2019). Spatiotemporal variability in urban HORECA food consumption and its ecological footprint in China. *Science of the total environment,* 687, 1232-1244. https://doi.org/10.1016/j.scitotenv.2019.06.148

Malefors, C., Callewaert, P., Hansson, P.A., Hartikainen, H., Pietiläinen, O., Strid, I. et al. (2019). Towards a baseline for food-waste quantification in the hospitality sector–quantities and data processing criteria. *Sustainability,* 11(13), 3541. https://doi.org/10.3390/su11133541

Malik, M.M., Abdallah, S., & Hussain, M. (2016). Assessing supplier environmental performance: applying analytical hierarchical process in the United Arab Emirates healthcare chain. *Renewable and Sustainable Energy Reviews,* 55, 1313-1321. https://doi.org/10.1016/j.rser.2015.05.004

Martin-Rios, C., Hofmann, A., & Mackenzie, N., (2021). Sustainability-Oriented innovations in food waste management technology. *Sustainability,* 13, 210. https://doi.org/10.3390/su13010210

Mentzer, J.T., DeWitt, W., Keebler, J.S., Min, S., Nix, N.W., Smith, C.D., & Zacharia, Z.G. (2001). Defining supply chain management. *Journal of Business Logistics,* 22(2), 1-25.

Modica, P.D., Altinay, L., Farmaki, A., Gursoy, D., & Zenga, M. (2020). Consumer perceptions towards sustainable supply chain practices in the hospitality industry. *Current Issues in Tourism,* 23(3), 358-375. https://doi.org/10.1080/13683500.2018.1526258

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G., & Prisma Group (2010). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *International Journal of Surgery,* 8(5), 336-341. https://doi.org/10.1136/bmj.b2535

Molina-Azorín, J.F., Claver-Cortés, E., López-Gamero, M.D., & Tarí, J.J. (2009). Green management and financial performance: a literature review. *Management decision,* 47(7), 1080-1100. https://doi.org/10.1108/00251740910978313

Okazaki, W.K., Turn, S.Q., & Flachsbart, P.G. (2008). Characterization of food waste generators: A Hawaii case study. *Waste management,* 28(12), 2483-2494. https://doi.org/10.1016/j.wasman.2008.01.016

Okumus, B., Taheri, B., Giritlioglu, I., & Gannon, M.J. (2020). Tackling food waste in all-inclusive resort hotels. *International Journal of Hospitality Management,* 88, 102543. https://doi.org/10.1016/j.ijhm.2020.102543

Papargyropoulou, E., Wright, N., Lozano, R., Steinberger, J., Padfield, R., & Ujang, Z. (2016). Conceptual framework for the study of food waste generation and prevention in the hospitality sector. *Waste management,* 49, 326-336. https://doi.org/10.1016/j.wasman.2016.01.017

Parfitt, J., Croker, T., & Brockhaus, A. (2021). Global food loss and waste in primary production: a reassessment of its scale and significance. *Sustainability,* 13(21), 12087. https://doi.org/10.3390/su132112087

Parry, A., Harris, B., Fisher, K., & Forbes, H. (2020). *UK progress against Courtauld 2025 targets and Sustainable Development Goal 12.3*. WRAP. Banbury. Available at: https://bit.ly/3yxalgk

Patriotta, G. (2020). Writing impactful review articles. *Journal of Management Studies,* 57(6), 1272-1276. https://doi.org/10.1111/joms.12608

Pestana, M.H., Wang, W.C., & Parreira, A. (2019), Senior tourism – a scientometric review (1998-2017). *Tourism Review,* 75(4), 699-715. https://doi.org/10.1108/tr-01-2019-0032

Pirani, S.I., & Arafat, H.A. (2014). Solid waste management in the hospitality industry: A review. *Journal of Environmental Management,* 146, 320-336. https://doi.org/10.1016/j.jenvman.2014.07.038

Rashideh, W. (2020). Blockchain technology framework: Current and future perspectives for the tourism industry. *Tourism Management,* 80, 104125. https://doi.org/10.1016/j.tourman.2020.104125

Rickly, J.M. (2022). A review of authenticity research in tourism: Launching the Annals of Tourism Research Curated Collection on authenticity. *Annals of Tourism Research,* 92, 103349. https://doi.org/10.1016/j.annals.2021.103349

Shamim, S., Cang, S., Yu, H., & Li, Y. (2017). Examining the feasibilities of Industry 4.0 for the hospitality sector with the lens of management practice. *Energies,* 10(4), 499. https://doi.org/10.3390/en10040499

Sigala, M. (2014). Customer involvement in sustainable supply chain management: A research framework and implications in tourism. *Cornell Hospitality Quarterly,* 55(1), 76-88. https://doi.org/10.1177/1938965513504030

Sorin, F., & Sivarajah, U. (2021). Exploring Circular economy in the hospitality industry: empirical evidence from Scandinavian hotel operators. *Scandinavian Journal of Hospitality and Tourism,* 21(3), 265-285. https://doi.org/10.1080/15022250.2021.1921021

Stankov, S., Fidan, H., Toskov, G., Dimitrova, E., & Nikovska, K. (2019). Traditional Bulgarian foods in the Horeca sector as a factor of choice for the tourist destination. *Bulgarian Journal of Agricultural Science,* 25(4). https://doi.org/10.1109/crebus.2019.8840044

Sternitzke, C., & Bergmann, I. (2009). Similarity measures for document mapping: A comparative study on the level of an individual scientist. *Scientometrics,* 78, 113-130. https://doi.org/10.1007/s11192-007-1961-z

Sun, K., Cao, X., & Xing, Z. (2021). Can the Diffusion Modes of Green Technology Affect the Enterprise's Technology Diffusion Network towards Sustainable Development of Hospitality and Tourism Industry in China?. *Sustainability,* 13(16), 9266. https://doi.org/10.3390/su13169266

UN (2015). *Do you know all 17 SDGs?* https://sdgs.un.org/goals (Accessed: October 2022)

UN (2020). *Global Indicator Framework for The Sustainable Development Goalsand Targets of the 2030 Agenda for Sustainable Development 2020.* New York, USA: United Nations.

Wang, L., Xue, L., Li, Y., Liu, X., Cheng, S., & Liu, G. (2018). Horeca food waste and its ecological footprint in Lhasa, Tibet, China. *Resources, Conservation and Recycling,* 136, 1-8. https://doi.org/10.1016/j.resconrec.2018.04.001

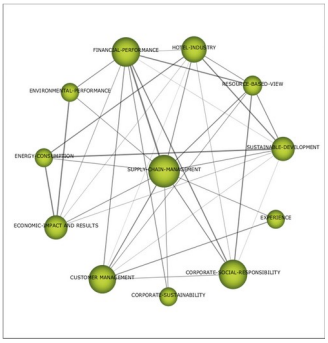
Wang, Y.F., Chen, S.P., Lee, Y.C., & Tsai, C.T.S. (2013). Developing green management standards for restaurants: An application of green supply chain management. *International journal of Hospitality management,* 34, 263-273. https://doi.org/10.1016/j.ijhm.2013.04.001

Xu, X., & Gursoy, D. (2015). Influence of sustainable hospitality supply chain management on customers' attitudes and behaviors. *International journal of hospitality management,* 49, 105-116. https://doi.org/10.1016/j.ijhm.2015.06.003

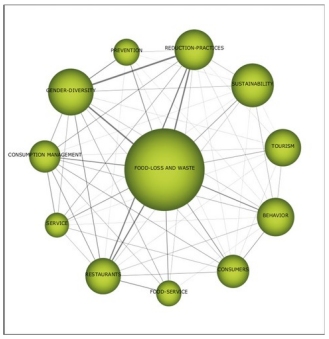
Zhang, X., Song, H., & Huang, G.Q. (2009). Tourism supply chain management: A new research agenda. *Tourism management,* 30(3), 345-358. https://doi.org/10.1016/j.tourman.2008.12.010

Appendix A

Appendix A.1. Core Documents from Supply Chain Management Network

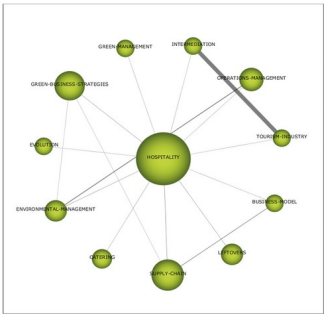
Themes in strategic diagram	Author/Year/Doi
Supply Chain Management 	Asadi, S., Pourhashemi, S.O., Nilashi, M., Abdullah, R., Samad, S., Yadegaridehkordi, E., Aljojo, N, Razali, N.S. (2020). https://doi.org/10.1016/j.jclepro.2020.120860
	Modica, P.D., Altinay, L, Farmaki, A, Gursoy, D, Zenga, M. (2020). https://doi.org/10.1080/13683500.2018.1526258
	Olya, H., Altinay, L., Farmaki, A., Kenebayeva, A., Gursoy, D. (2021).https://doi.org/10.1080/09669582.2020.1775622
	Eid, R., Agag, G. (2020). https://Doi.Org/10.1016/J.Ijhm.2020.102642
	Galeazzo, A., Ortiz-de-Mandojana, N., Delgado-Ceballos, J. (2021). https://doi.org/10.1080/13683500.2020.1734546
	Yousaf, Z., Radulescu, M., Sinisi, C.I., Serbanescu, L., Paunescu, L.M. (2021). https://doi.org/10.3390/su13126592
	Shi, Y., Tsai, K.H. (2020). https://doi.org/10.1002/jtr.2365
	Myung, E., Kim, Y.S., Barrett, S. (2020). https://doi.org/10.1080/1528008x.2020.1740132
	Chen, Y.A, Chen, C.L. (2022). https://doi.org/10.1108/cms-08-2020-0320
	Kaur, P., Talwar, S., Madanaguli, A., Srivastava, S., Dhir, A. (2022). https://doi.org/10.1016/j.jbusres.2022.01.067
	Acampora, A., Lucchetti, M.C., Merli, R., Ali, F. (2022). https://doi.org/10.1016/j.jhtm.2022.05.007
	Gao, Y., Zhang, Q., Xu, X.F., Jia, F., Lin, Z.B.(2022). https://doi.org/10.1080/10941665.2022.2046119
	Adu-Yeboah, S.S., Jiang, Y.C., Frempong, M.F., Hossin, M.A., Amoako, R. (2022). https://doi.org/10.1080/14330237.2022.2066341

Appendix A.2. Core Documents from Food Loss and Waste Network

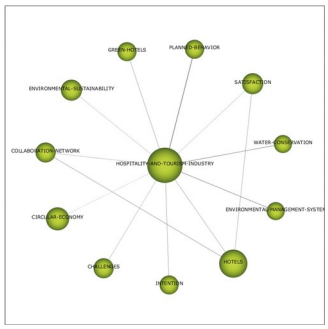
Themes in strategic diagram	Author/Year/Doi
Food-Loss and Waste 	Dhir, A., Talwar, S., Kaur, P., Malibari, A., (2020). https://doi.org/10.1016/j.jclepro.2020.122861
	Dolnicar, S., Juvan, E., Grun, B. (2020). https://doi.org/10.1016/j.tourman.2020.104103
	Okumus, B., Taheri, B., Giritlioglu, I., Gannon, M.J. (2020). https://doi.org/10.1016/j.ijhm.2020.102543
	Sharma, R., Dhir, A., Talwar, S., Kaur, P. (2021). https://doi.org/10.1016/j.ijhm.2021.102977
	Okumus, B. (2020). https://doi.org/10.1080/19368623.2019.1618775
	Martin-Rios, C., Hofmann, A., Mackenzie, N. (2021). https://doi.org/10.3390/su13010210
	Huang, C.H., Liu, S.M., Hsu, N.Y. (2020). https://doi.org/10.3390/su12072892
	Dou, Z.X., Toth, J.D. (2021). https://doi.org/10.1016/j.resconrec.2020.105332
	Vizzoto, F., Tessitore, S., Iraldo, F., Testa, F. (2020). https://doi.org/10.1016/j.wasman.2020.04.010
	Visschers, V.H.M., Gundlach, D., Beretta, C. (2020). https://doi.org/10.1016/j.wasman.2019.12.046
	Filimonau, V., Nghiem, V.N., Wang, L.E. (2021). https://doi.org/10.1016/j.ijhm.2020.102731
	Camilleri-Fenech, M., Sola, J.O.I, Farreny, R., Durany, X.G. (2020). https://doi.org/10.1016/j.spc.2019.11.003
	Chen, M.H., Wei, H.X., Wei, M., Huang, H.Y., Su, C.H. (2021). https://doi.org/10.1016/j.ijhm.2020.102716
	Tomaszewska, M., Bilska, B., Tul-Krzyszczuk, A., Kolozyn-Krajewska, D. (2021). https://doi.org/10.3390/su13010421
	De Visser-Amundson, A. (2022). https://doi.org/10.1080/09669582.2020.1849232
	Wang, L.E, Filimonau, V., L.I., Y.Y. (2021). https://doi.org/10.1016/j.jclepro.2020.123890
	Bilska, B., Tomaszewska, M., Koloiyn-Krajewska, D. (2020). https://doi.org/10.3390/su12052050
	Gladysz, B., Buczacki, A., Haskins, C. (2020). https://doi.org/10.3390/resources9120144
	Talwar, S., Kaur, P., Okumus, B., Ahmed, U., Dhir, A. (2021). https://doi.org/10.1016/j.ijhm.2021.103033
	Vizzoto, F, Testa, F, Iraldo, F. (2021). https://doi.org/10.1016/j.ijhm.2021.102933
	Amicarelli, V., Aluculesei, A.C., Lagioia, G., Pamfilie, R., B.U.X., C. (2022). https://doi.org/10.1108/ijcthr-01-2021-0019
	Chammas, G., Yehya, N.A. (2020). https://doi.org/10.1016/j.appet.2020.104803
	Martin-Rios, C., Zizka, L., Varga, P., Pasamar, S. (2020). https://doi.org/10.1080/10941665.2020.1773513
	Cai, C.H., Ding, A.N., Legendre, T.S. (2021). https://doi.org/10.1108/ijchm-08-2020-0924
	Gruia, R., Florescu, G.I., Gaceu, L., Oprea, O.B., Tane, N. (2021). https://doi.org/10.3390/su13115852
	Garcia-Madurga, M.A, Esteban-Navarro, M.A., Morte-Nadal, T. (2021). https://doi.org/10.3390/su13126884
	Munir, K. (2022). https://doi.org/10.1016/j.jclepro.2021.129991
	Obrador, P. (2020). https://doi.org/10.1386/hosp_00013_1
	Batlle-Bayer, L., Bala, A., Roca, M., Lemaire, E., Aldaco, R., Fullana-I-Palmer, P. (2020). https://doi.org/10.1016/j.jclepro.2020.122561
	Lund-Durlacher, D., Gossling, S. (2021). https://doi.org/10.1016/j.jort.2020.100342
	Salama, W., Abdelsalam, E. (2021). https://doi.org/10.3390/su13063094

Themes in strategic diagram	Author/Year/Doi
	Ahmed, M.F., Bin Mokhtar, M., Lim, C.K., Hooi, A.W.K., Lee, K.E. (2021). https://doi.org/10.3390/su131810260
	Buczacki, A., Gladysz, B., Palmer, E. (2021). https://doi.org/10.3390/su13105510
	Meier, T., Von Borstel, T., Welte, B., Hogan, B., Finn, S.M., Bonaventura, M., Friedrich, S., Weber, K., De Teran, T.D. (2021). https://doi.org/10.3390/su13063288
	Dolnicar, S. (2021). https://doi.org/10.1108/tr-05-2019-0199
	Coskun, A, Filimonau, V. (2021). https://doi.org/10.1016/j.jclepro.2021.129695
	Filimonau, V., Matyakubov, U., Allonazarov, O., Ermolaev, V.A. (2022). https://Doi.Org/10.1016/J.Spc.2021.09.018
	Liu, T.T., Juvan, E., Qiu, H.Q., Dolnicar, S. (2022). https://doi.org/10.1080/09669582.2021.1918132
	Batat, W. (2021). https://doi.org/10.1108/jsm-06-2020-0243
	Filimonau, V., Ermolaev, V.A. (2022). https://doi.org/10.1016/j.spc.2021.10.028
	Dumitru, O.M., Iorga, C.S., Mustatea, G. (2021). https://doi.org/10.3390/foods10102280
	Gandhi, P., Yadav, M., Paritosh, K., Pareek, N., Lizasoain, J., Bauer, A., Vivekanand, V. (2020). https://doi.org/10.1007/s10163-020-01034-1
	Blesic, I., Petrovic, M.D., Gajic, T., Tretiakova., T.N., Syromiatnikova, J.A., Radovanovic, M.Popov-Raljic, J., Yakovenko, N.V. (2021). https://doi.org/10.3390/su13169236
	Antonschmidt, H., Lund-Durlacher, D. (2021). https://doi.org/10.1016/j.jclepro.2021.129709
	Martin-Rios, C., Meier, C.D., Pasamar, S. (2022). https://doi.org/10.1177/0734242x221079306
	Cordova-Buiza, F., Paucar-Caceres, A., Quispe-Prieto, S.C., Rivera-Garre, A.P., Huerta-Tantalean, L.N, Valle-Paucar, J.E., De Leon-Panduro, C.V.P., Burrowes-Cromwell, T. (2022). https://doi.org/10.3390/su14031050
	Bui, H.T., Filimonau, V. (2021). https://doi.org/10.1108/ijchm-03-2021-0330
	Chen, Y.S, Wu, S.T.(2022). https://doi.org/10.1016/j.jhlste.2022.100372
	Chalak, A., Hassan, H.F., Aoun, P., Abiad, M.G. (2021). https://doi.org/10.3390/su13116358
	Elnasr, A.E.A., Aliane, N., Agina, M.F. (2021). https://doi.org/10.3390/pr9112056
	Goodman-Smith, F., Mirosa, R., Mirosa, M. (2020). https://doi.org/10.3390/su12166507
	Alsawah, G., Saleh, W., Malibari, A., Lashin, M.M.A., Alghamdi, T. (2022). https://doi.org/10.3390/su14041961
	Wang, L.F., Yang, Y.Q., Wang, G.Y. (2022). https://doi.org/10.3390/su14084699
	Cozzio, C., Tokarchuk, O., Maurer, O. (2021). https://doi.org/10.1108/bfj-02-2021-0114
	Kaur, P, Talwar, S, Madanaguli, A, Srivastava, S, Dhir, A. (2022). https://doi.org/10.1016/j.jbusres.2022.01.067
	Scholz, P., Cervova, L., Janecek, P., Linderova, L. (2022). https://doi.org/10.15240/tul/001/2022-1-011
	Afzal, N., Basit, A., Daniel, A., Ilyas, N., Imran, A., Awan, Z.A., Papargyropoulou, E., Stringer, L.C., Hashem, M., Alamri, S., Bashir, M.A., Li, Y.Z., Roy, N. (2022). https://doi.org/10.3390/su14116914
	Chawla, G., Lugosi, P., Hawkins, R. (2022). https://doi.org/10.3390/su14159015
	Kasavan, S., Yusoff, S., Ali, N.I.M., Masarudin, N.A. (2021). https://doi.org/10.17576/geo-2021-1702-05
	Demetriou, P. (2022). https://doi.org/10.1080/23311886.2022.2026556
	Chang, Y.S., Lim, X.J., Cheah, J.H. (2021). https://doi.org/10.1108/bfj-03-2021-0315
	Ko, W.H., Lu, M.Y. (2022). https://doi.org/10.1108/ijshe-07-2021-0308

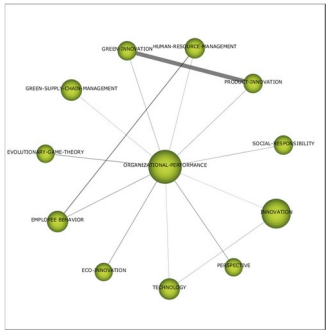
Appendix A.3. Core Documents from Hospitality Network

Themes in strategic diagram	Author/Year/Doi
Hospitality 	Rashideh, W. (2020). https://doi.org/10.1016/j.tourman.2020.104125
	Modica, P.D., Altinay, L., Farmaki, A., Gursoy, D., Zenga, M. (2020). https://doi.org/10.1080/13683500.2018.1526258
	Acquah, I.S.K., Agyabeng-Mensah, Y., Afum, E. (2021). https://doi.org/10.1108/bij-05-2020-0205
	Chan, E.S.W., Okumus, F., Chan, W. (2020). https://doi.org/10.1016/j.ijhm.2019.102324
	Garai, A., Sarkar, B. (2022). https://doi.org/10.1016/j.jclepro.2021.129977
	Gurlek, M., Koseoglu, M.A. (2021). https://doi.org/10.1080/02642069.2021.1929930
	Visschers, V.H.M., Gundlach, D., Beretta, C. (2020). https://doi.org/10.1016/j.wasman.2019.12.046
	Tomaszewska, M., Bilska, B., Tul-Krzyszczuk, A., Kolozyn-Krajewska, D. (2021). https://doi.org/10.3390/su13010421
	Galeazzo, A., Ortiz-De-Mandojana, N., Delgado-Ceballos, J. (2021). https://doi.org/10.1080/13683500.2020.1734546
	Fong, V.H.I., Hong, J.F.L., Wong, I.A. (2021). https://doi.org/10.1016/j.tourman.2020.104274
	Kumar, S., Kamble, S., Roy, M.H. (2020). https://doi.org/10.1108/bij-07-2019-0314
	Ibarnia, E., Garay, L., Guevara, A. (2020). https://doi.org/10.3390/su122310125
	Vizzoto, F., Testa, F., Iraldo, F. (2021). https://doi.org/10.1016/j.ijhm.2021.102933
	Shi, Y., Tsai, K.H. (2020). https://doi.org/10.1002/jtr.2365
	Carlisle, S., Zaki, K., Ahmed, M., Dixey, L., Mcloughlin, E. (2021). https://doi.org/10.3390/su13031161
	Myung, E., Kim, Y.S., Barrett, S. (2020). https://doi.org/10.1080/1528008x.2020.1740132
	Gruia, R., Florescu, G.I., Gaceu, L., Oprea, O.B., Tane, N. (2021). https://doi.org/10.3390/su13115852
	Garcia-Madurga, M.A., Esteban-Navarro, M.A., Morte-Nadal, T. (2021). https://doi.org/10.3390/su13126884
	Abbas, T.M., Hussien, F.M. (2021). https://doi.org/10.1177/14673584211011717
	Buczacki, A., Gladysz, B., Palmer, E. (2021). https://doi.org/10.3390/su13105510
	Coskun, A., Filimonau, V. (2022). https://doi.org/10.1016/j.jclepro.2021.129695
	Filimonau, V., Matyakubov, U., Allonazarov, O., Ermolaev, V.A. (2022). https://doi.org/10.1016/j.spc.2021.09.018
	Sorin, F., Sivarajah, U. (2021). https://doi.org/10.1080/15022250.2021.1921021
	Alvarez-Albelo, C.D., Hernandez-Martin, R., Padron-Fumero, N. (2020). https://doi.org/10.1016/j.jairtraman.2020.101772
	Bui, H.T., Filimonau, V. (2021). https://doi.org/10.1108/ijchm-03-2021-0330
	Stunzenas, E., Kliopova, I., Kliaugaite, D., Budrys, R.P. (2021). https://doi.org/10.3390/pr9122228
	Scholz, P., Cervova, L., Janecek, P., Linderova, L. (2022). https://doi.org/10.15240/tul/001/2022-1-011

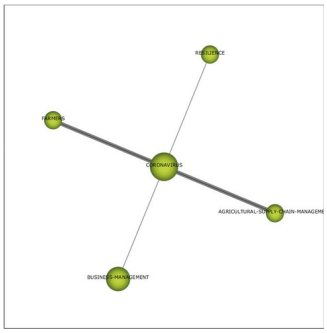
Appendix A.4. Core Documents from Hospitality and Tourism Industry Network

Themes in strategic diagram	Author/Year/Doi
Hospitality and Tourism Industry 	Okumus, B., Taheri, B., Giritlioglu, I., Gannon, M.J. (2020). https://doi.org/10.1016/j.ijhm.2020.102543
	Gonzalez-Torres, T., Rodriguez-Sanchez, J.L., Pelechano-Barahona, E. (2021). https://doi.org/10.1016/j.ijhm.2020.102733
	Chan, E.S.W., Okumus, F., Chan, W. (2020). https://doi.org/10.1016/j.ijhm.2019.102324
	Huang, C.H., Liu, S.M., Hsu, N.Y. (2020). https://doi.org/10.3390/su12072892
	Olya, H., Altinay, L., Farmaki, A., Kenebayeva, A., Gursoy, D. (2021).https://doi.org/10.1080/09669582.2020.1775622
	Sun, K.K., Cao, X., Xing, Z.Y. (2021). https://doi.org/10.3390/su13169266
	Zhong, Y.F., Li, Y.M., Ding, J., Liao, Y.Y. (2021). https://doi.org/10.3390/jrfm14050228
	Salama, W., Abdelsalam, E. (2021). https://doi.org/10.3390/su13063094
	Karadayi-Usta, S., Serdarasan, S. (2020). https://doi.org/10.3926/jiem.3008
	Ahmed, M.F., Bin Mokhtar, M., Lim, C.K., Hooi, A.W.K., Lee, K.E. (2021). https://doi.org/10.3390/su131810260
	Coskun, A, Filimonau, V. (2021). https://doi.org/10.1016/j.jclepro.2021.129695
	Alsuwaidi, M., Eid, R., Agag, G. (2022). https://doi.org/10.1016/j.tmp.2022.100963
	Acampora, A., Lucchetti, M.C., Merli, R., Ali, F. (2022). https://doi.org/10.1016/j.jhtm.2022.05.007
	Demetriou, P. (2022). https://doi.org/10.1080/23311886.2022.2026556

Appendix A.5. Core Documents from Organizational Performance Network

Themes in strategic diagram	Author/Year/Doi
Organizational-Performance 	Asadi, S., Pourhashemi, S.O., Nilashi, M., Abdullah, R., Samad, S., Yadegaridehkordi, E., Aljojo, N, Razali, N.S. (2020). https://doi.org/10.1016/j.jclepro.2020.120860
	Gurlek, M., Koseoglu, M.A. (2021). https://doi.org/10.1080/02642069.2021.1929930
	Tulsi, P., Ji, Y. (2020). https://doi.org/10.13106/jafeb.2020.vol7.no1.195
	Chen, M.H., Wei, H.X., Wei, M., Huang, H.Y., Su, C.H. (2021). https://doi.org/10.1016/j.ijhm.2020.102716
	Eid, R., Agag, G. (2020). https://Doi.Org/10.1016/J.Ijhm.2020.102642
	Ibarnia, E., Garay, L., Guevara, A. (2020). https://doi.org/10.3390/su122310125
	Filieri, R., D'Amico, E.., Destefanis, A, Paolucci, E., Raguseo, E. (2021). https://doi.org/10.1108/ijchm-02-2021-0220
	Martin-Rios, C,. Zizka, L., Varga, P., Pasamar, S. (2020). https://doi.org/10.1080/10941665.2020.1773513
	Astawa, I.K., Pirzada, K., Budarma, I.K., Widhari, C.I.S., Suardani, A.A.P. (2021). https://doi.org/10.17512/pjms.2021.24.1.03
	Sun, K.K., Cao, X., Xing, Z.Y. (2021). https://doi.org/10.3390/su13169266
	Zhong, Y.F., Li, Y.M., Ding, J., Liao, Y.Y. (2021). https://doi.org/10.3390/jrfm14050228
	Valenca, M.N., Sobral, M.F.F., Lima, T.L.D., Farias, D.D.P. (2020). https://doi.org/10.1108/jhtt-10-2017-0119
	Aghaei, A., Firouzjaei, M.D., Karami, P., Aktij, S.A., Elliott, M., Mansourpanah, Y., Rahimpour, A., Soares, J., Sadrzadeh, M (2022). https://doi.org/10.1002/cjce.24488
	Adu-Yeboah, S.S., Jiang, Y.C., Frempong, M.F., Hossin, M.A., Amoako, R. (2022). https://doi.org/10.1080/14330237.2022.2066341

Appendix A.6. Core Documents from Coronavirus Network

Themes in strategic diagram	Author/Year/Doi
Coronavirus 	Filimonau, V. (2021). https://doi.org/10.1016/j.resconrec.2020.105272
	Al-Fadly, A. (2020). https://doi.org/10.9770/jesi.2020.8.2
	Aigbedo, H. (2021). https://doi.org/10.1016/j.ijhm.2021.103012
	Coopmans, I., Bijttebier, J., Marchand, F., Mathijs, E., Messely, L., Rogge, E., Sanders, A., Wauters, E. (2021). https://doi.org/10.1016/j.agsy.2021.103136
	Alshater, M.M., Atayah, O.F., Khan, A. (2022). https://doi.org/10.1080/1331677x.2021.1927786
	Zhong, Y.F., Li, Y.M., Ding, J., Liao, Y.Y. (2021). https://doi.org/10.3390/jrfm14050228
	Stojcheska, A.M., Nacka, M., Tuna, E. (2021). https://doi.org/10.12775/eec.2021.007

Appendix A.7. Core Documents from Waste Management Network

Themes in strategic diagram	Author/Year/Doi
Waste Management 	Chen, M.H., Wei, H.X., Wei, M., Huang, H.Y., Su, C.H. (2021). https://doi.org/10.1016/j.ijhm.2020.102716
	Bilska, B., Tomaszewska, M., Koloiyn-Krajewska, D. (2020). https://doi.org/10.3390/su12052050
	Chammas, G., Yehya, N.A. (2020). https://doi.org/10.1016/j.appet.2020.104803
	Dolnicar, S. (2021). https://doi.org/10.1108/tr-05-2019-0199
	Filimonau, V., Matyakubov, U., Allonazarov, O., Ermolaev, V.A. (2022). https://doi.org/10.1016/j.spc.2021.09.018
	Thies, A.J., Schneider, F., Efken, J. (2021). https://doi.org/10.3390/su13095059
	Antonschmidt, H., Lund-Durlacher, D. (2021). https://doi.org/10.1016/j.jclepro.2021.129709
	Martin-Rios, C., Meier, C.D., Pasamar, S. (2022). https://doi.org/10.1177/0734242x221079306