

# Cooking Up a Sustainable Future: insights of Circular Economy in Restaurants

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**Abstract:** Restaurants increasingly prioritize promoting sustainability within their kitchen's operations, focusing their offers on valuing raw materials as a central point of gastronomy, thus highlighting the importance of local, responsible consumption and respect for nature and the environment. The Circular Economy (CE) emerges as a new sustainability paradigm, uncovering valuable opportunities for organizations and customers, in harmony with the environment. This study aims to characterize good sustainable and circular practices in the restaurant sector, understanding how endogenous products can enhance food waste reduction. Through a qualitative methodology, nine semi-structured exploratory interviews were carried out with restaurant experts, to gain in-depth knowledge into sustainable and CE practices used in restaurants. By conducting a thematic analysis, three main themes emerged 'Positioning and Branding,' 'Circular Economy,' and 'Product and Food Waste'. 'Positioning and Branding' covers the evolution of an eco-conscious mindset in organizations, from the inception of sustainable thinking to the imperative for change. It emerges from the categories: 'Organization, actions, and partnerships', 'Challenges and success factors', and 'Awareness'. The theme 'Circular Economy,' presents circular practices within daily restaurant operations, their understanding of circular concepts, and the progress made in adopting these behaviors. It arises from three categories: 'Circularity', 'Resource Management' and 'Transition'. The 'Product and Food Waste' theme addresses concerns related to product and food waste, including supplier selection, innovative gastronomic offerings, and food waste minimization strategies. It is based on the categories: 'Suppliers and Raw Materials', 'Food Waste Minimization', and 'Gastronomic Offer'.

The findings reveal a growing awareness of the need for sustainability and circular practices in the restaurant sector. Organizations are actively seeking ways to reduce food waste, optimize sourcing, best operating procedures and offer more sustainable menus representing significant progress toward a more sustainable future in the restaurant business.

**Keywords:** Circular economy, Sustainability, Restaurant Sector, Portugal

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## 1. Introduction

Economic challenges such as supply risk, problematic ownership structures and deregulated markets lead to increasingly frequent financial and economic instability for individual companies and entire economies. In this sense, new solutions may emerge within the scope of innovation, allowing greater active involvement on the part of organizations for future improvements (Bocken et al., 2016). A good alternative to the way cities develop and operate is provided by the circular economy. This idea manifests itself from the symbiosis of an environmental and ecological economy with environmentalist and sustainable industrial management in corporate terms (Bocken et al., 2016). Given the current trend towards a Circular Economy (CE), the business strategy of restaurant chains cannot be limited to their traditional services, which means that the implementation of a sustainable model in the restaurant chain must be attentive and respond to the needs changes of customers (Chou et al., 2016). At the same time, with an increasingly demanding consumer and a more competitive market, innovation in customer services not only reflects the development of new products, but also all innovative activities, small or large, that can revitalize and improve existing services and delivery systems (Alt and Zimmermann, 2019). The development of a sustainable service provides a series of innovative service methods, which in addition to improving "green life", can change the entire operating model of the

industry, simplifying and reducing inherent operational costs (Bocken et al., 2016). Therefore, introducing a sustainable service innovation model through the circular economy can clarify information in the food supply chain and use an integrative mechanism of recycling and refining technology to promote food, with a main focus on fruits and vegetables, and increase the value of leftovers (Lugo et al., 2023). The development of sustainable models and service innovation is a goal that the current restaurant industry should strive to develop (Chou et al., 2016). By implementing a circular economy approach, restaurant chains can not only improve their services and reduce costs, but also contribute to a more sustainable future for the industry and society as a whole. This study aims to identify sustainable and circular practices in the restaurant sector that effectively reduce food waste by utilizing endogenous products. To achieve this, we conducted 9 interviews with key players in the industry who prioritize circular and sustainable practices in their businesses. Through these interviews, we gained insight into their perspectives on the topics under analysis and uncovered innovative practices that have not yet been documented in the literature.

## 2. Literature Review

The Circular Economy (CE) has emerged as a promising alternative to the traditional linear economic model of "take-make-dispose", as recognized by the Ellen MacArthur Foundation (2015). The CE model prioritizes environmental sustainability in economic activity, emphasizing the importance of preserving natural resources, managing finite stocks, and optimizing renewable resource flows (Ellen MacArthur Foundation, 2015). By circulating products, components, and materials at their highest level of utility for extended periods in both technical and biological cycles, the CE approach promotes system efficiency and mitigates negative externalities. This paradigm shift in business mindset extends beyond energy and resource efficiency, prompting companies to consider the broader impacts of their operations (Leitão, 2015). Developing an ecological industry that prioritizes prevention and regeneration is critical for achieving balance among the three dimensions of sustainable development: economic, social, and environmental (Ghisellini et al., 2016; Geissdoerfer et al., 2017). The CE model offers added value for organizations and customers alike, promoting harmony with the environment (Ellen MacArthur Foundation, 2013). By drawing inspiration from the natural world, we can reevaluate our current economic practices and adopt a more integrative system that prioritizes ecological design considerations and a more sustainable use of resources (Kirchherr et al., 2023). The necessity of sustainability is particularly relevant in the restaurant industry, where large quantities of water, energy, and disposable products are consumed. Businesses must consider sustainable practices to improve their environmental performance and positively impact their brand image in the eyes of consumers. Consumers are increasingly aware of environmental issues, and their purchasing behavior reflects this (Schubert et al., 2010). By implementing sustainable CE strategies and principles, companies can not only contribute to the protection of the environment and social well-being but also gain a competitive advantage through reduced raw material consumption, better waste management, and innovation (Lakatos et al., 2021). Hence, it is vital to shift our thinking towards more sustainable solutions to mitigate waste and promote a healthier planet.

Food waste is generated throughout the entire lifecycle of food, including agriculture, production, industrialization, retail, and domestic consumption (Mirabella et al., 2014). Consumers' excessive or inappropriate acquisition, inadequate storage conditions, and excess preparation are the primary causes of food waste (Papargyropoulou et al., 2014). Proper waste management and reducing food waste can improve economic resources, enhance food security, and minimize the negative impacts of food waste on the environment (Thyberg and Tonjes, 2016). Various authors suggest that the CE can be an effective strategy to minimize food waste, as it is closely interconnected with this concept (Borrello et al., 2016; Vilariño et al., 2017; Dora, 2019). To achieve a sustainable transition, it is essential to tackle unwanted food surpluses, prevent overproduction, and reduce excess food supply (Papargyropoulou et al., 2014). This approach requires exploring endogenous resources, which play a critical role in providing integrative experiences that showcase their authenticity and genuineness (Rodrigues et al., 2022).

Educating the end consumer is crucial to effectively reduce food waste, as they are responsible for a significant portion of waste throughout the food chain. This reduction relies on clear and effective communication between consumers and other stakeholders, such as institutions and organizations (Richter and Bokelmann, 2016). By embracing all these elements, companies can analyze and streamline their production processes while also educating their consumers about the importance of sustainable food practices.

Higgins-Desbiolles et al (2019) argue that sustainable restaurants should be thinking more holistically. The SRA model was founded in 2009 in the United Kingdom and describes three main intervention areas: sourcing, society, and environment. Regarding sourcing, they encourage restaurants to support environmentally positive

farming, use local and seasonal food, source sustainable fish, use ethical meat and dairy, and engage with fairly traded products. The facet of society suggests good community engagement, treating people fairly (staff, suppliers, and customers), and promoting healthy eating. and engaging in responsible marketing. The environment refers to water-saving, workplace resources, supply chain practices, waste management, and energy efficiency (Higgins-Desbiolles et al, 2019).

In a systematic review of sustainability in the restaurant sector, Higgins-Desbiolles et al (2019) concluded that studies need to re-engage with the evolving conceptualisation of sustainability to ensure that they undertake best practice responses to changing requirements. The narrow focus on green dining and ecological aspects of sustainability featured in restaurants does not acknowledge the full meaning of sustainability and can compromise a more sustainable future. Moreover, Higgins-Desbiolles et al (2019) argue that researchers could move away from terminology such as “green dining” and “eco-friendly” focused on ecological aspects to an SRA model of sustainability.

Therefore, this study aims to characterize good sustainable, and circular practices in the restaurant sector. We start presenting the methodology, main results, and discussion and conclusions.

### 3. Method

This study uses a qualitative approach, through semi-structured interviews with key informants from the restaurant sector who stand out from their counterparts in applying good CE and sustainability practices. In doing so, we aim to obtain a comprehensive understanding of the current reality of the sector in Portugal. Our goal is to explore sustainable and circular practices within the restaurant industry while investigating the role of locally sourced products in reducing food waste. To gather data, we will be relying on primary sources, which are crucial for this type of research. As Hennick et al. (2020) note, qualitative research provides a broad approach that allows researchers to delve into people's experiences in detail through methods such as in-depth interviews. This approach enables us to gain insights from the perspective of study participants and to understand the various interpretations and meanings they assign to behaviour, events, or objects. By embracing and interpreting the contextual influences on research issues, qualitative research strives to achieve information depth rather than statistical representativeness by exploring each participant's experiences and views in depth (Hennick et al., 2020). Qualitative data analysis is interpretive, meaning that researchers aim to interpret the meanings that participants provide for their views and experiences (Barnham, 2015).

The interview script was meticulously crafted after conducting a thorough review of relevant literature. It not only gathered sociodemographic and professional information about the interviewees and their companies but also delved into their perspectives on various aspects of CE impact in the restaurant industry. The script was developed and fine-tuned throughout April 2023. The interviews themselves comprised fifteen open-ended questions, all about the five key themes under analysis, namely 1) suppliers and purchases, 2) menu and gastronomic offerings, 3) waste management, 4) renewable energy and water, and 5) education, awareness, and control. The sampling technique employed in this study was theoretical sampling. The process of conceptualizing the interviewee profile aimed to bring together individuals with diverse sociodemographic backgrounds, whose restaurant companies had varying structures and business models, gastronomic offerings, and target audiences, thus providing heterogeneity to the sample. We received a positive response from nine restaurant companies, which were ultimately considered as the participants in the final sample. The interviews were conducted remotely via Zoom, during May 2023, with an average duration of 60 minutes.

As previously stated, our sample is diverse, encompassing restaurants and municipal associations renowned for their commitment to sustainability. Out of the 9 companies interviewed, 2 are collective catering businesses, 1 is a quick service restaurant, 4 are casual service restaurants, and 2 are municipal business associations. Of the entire sample, 3 participating companies have been focused on CE and sustainability concerns for over 25 years, while 2 have been doing so for more than 10 years. The remaining 4 have been pursuing these goals for less than 5 years, and they happen to be smaller companies, specifically those classified as casual service restaurants. The interviewees' involvement in their respective organizations varies, with 4 of them serving as owners or partners of the companies. The sample also includes a Health, Safety, and Environment Director, an Impact and Communications Lead, a Biowaste Prevention Expert, a Project Manager, and an Operations Manager.

Qualitative data analysis was conducted using a thematic analysis approach. This involved identifying and examining patterns, or themes, in the qualitative data sets. According to Braun & Clarke (2019), this fundamental method for qualitative study provides systematic procedures for the formulation of subcategories, categories, and themes from the content extracted in data collection. Subcategories capture interesting characteristics of

potential data relevant to answering the research question and are the smallest units of analysis. Through these units, a central idea shared between them all, the themes, emerges and provides a structure for organizing and reporting the researcher's analytical observations. The objective was to synthesize the content of the interviews and interpret the main characteristics of the data concerning the research question (Clarke and Braun, 2017). The results were then subjected to empirical saturation to define the sample size. This concept of data saturation can also be known as redundant information or the point at which no new themes or codes emerge from the results, which is frequently referred to in thematic analysis. With these considerations in mind, the results of the qualitative study were analysed and interpreted.

#### 4. Results

Three dimensions of analysis were identified: Positioning and Branding, Circular Economy, and Product and Food Waste. By examining the intersection of these dimensions, we have uncovered insightful subcategories that provide a more focused view of the participants' viewpoints. The theme of "Positioning and Branding" (table 1) dives deep into the image projected by the major players in their respective markets regarding circular economy and sustainability within their organizations. This theme evolved from a growing awareness of the ecological impact of companies and society's need for change, as well as the emergence of sustainable thinking and the challenges encountered on this path. The theme consists of the categories of the organization's role, actions, and partnerships developed, its active presence in raising awareness among third parties, and the challenges faced and success factors for the future. The "Organization, actions, and partnerships" category examines the path taken by the companies interviewed in this new sustainability paradigm and the adjustments made to their business concepts in search of a balance of economic, environmental, and social dimensions as stated by *"And so, last year we developed the 'Zero Waste Heroes' project, which already has a Gaming program with the students and which is getting more involvement, and which was considered the project of the year by a magazine, which has awards in the field of collective food and catering, and was actually considered ... we were very proud to have it as the award for 2022"* (interview 1). This category includes three subcategories: circular economy and sustainability projects, introduction to sustainability, and business models. The "Challenges and Success Factors" category reflects on the critical points necessary for implementing a circular business and highlights future perspectives as stated by *"that's what I'm saying: if people didn't absorb this new Waste Not monitoring project, it's an obligation I have from the group, if people didn't get involved it wouldn't be me (or my team, there are twelve other people) who would be able to monitor 200 units every day. In the past, I would deploy my team in certain periods when I wanted to do studies and have data and I would put them there for a month, that's one thing, now what I have this year is that every day I know what waste is happening in the units. If it weren't for the teams involved, I'd never achieve this in my life"* (interview 5). This category includes three subcategories: implementation of good practices, opportunities and problem knowledge, networking, and impact assessment. Lastly, the "Awareness" category emphasises measures taken to promote circular economy and sustainability internally and externally as we can observe in the words *"It's total, because I'll say it again, there are 100 of us at a central level and I can say that we currently have 3400 employees in the field, which means that the awareness / proximity / relevance (which I hope I've managed to convey) of the people we have ..."* (interview 9). Similarly, to the other categories, three subcategories have emerged: the ability to influence, internal communication, and external communication.

**Table 1: Theme, categories, and subcategories of the "Positioning and Branding" analysis dimension**

Theme	Categories	Subcategories
1. Positioning and Branding	1.1. Organization, actions, and partnerships	a) Circular Economy and Sustainability Projects
		b) Introduction to sustainability
		c) Business models
	1.2. Challenges and success factors	d) Implementation of good practices
		e) Opportunities and problem knowledge
		f) Networking
		g) Impact assessment
	1.3. Awareness	h) Ability to influence
		i) Internal communication

Theme	Categories	Subcategories
		j) External communication

The theme "Circular Economy" (table2) refers to the circular practices that the participating companies already implement in their daily operations, as well as their understanding of the circular concept and the steps they have taken towards transitioning to this behaviour. Within the "Circular Economy" category, leading professionals in this field shared their thoughts on the concept and benefits associated with the circular economy, giving insight into the process as stated *"For me, the circular economy is about no unnecessary waste, .."* (interview 3). The "Resource Management" category was a popular subject in the nine interviews conducted, with five subcategories focused on how resources such as water, energy, waste, and packaging are used and monitored in the restaurant's day-to-day operations, as we can observe by *"we continue to recycle our oils, we continue to valorize the oils and, therefore, the oil that we valorize and transform into biodiesel, we sell that biodiesel and donate the money from that biodiesel to the Foundation. We are talking about an average of €500-750,000 a year. It's the recovery of that waste that comes out of our kitchens, that oil is €750,000/year, it has been for more than ten years, but it hasn't always been €750,000, then it also has to do with the volume, which has been growing over the years and, on average last year, €750,000 was donated to the Foundation"* (interview 2). Lastly, the "Transition" category explored the shift from a linear economy to a circular economy, examining how companies are adapting and the impact on the environment and stakeholders as stated by *"Of course there are accidents, we're a volume restaurant and it's normal for there to be accidents, like spilling the glass, but we thought about it and we tested it in the early days, in the early days, a lot of mopping, a lot of spilled glasses because the customer will take the tray with the lid off and the glass will be full, plus the ice, but today our customer has got used to it and we've migrated: we've removed the lids from our glasses, so in our lounges the drinks no longer have glasses"* (interview 8). This category was divided into subcategories including the recentness of the concern, the change of mentalities, and the stakeholder involved.

**Table 2: Theme, categories, and subcategories of the "Circular Economy" analysis dimension**

Theme	Categories	Subcategories
2. Circular Economy	2.1. Circularity	k) Concept
		l) Benefits
	2.2. Resource management	m) Water management
		n) Energy management
		o) Waste Management
		p) Packaging and conditioning
	2.3. Transition	q) Recentness of the concern
		r) Process
		s) Change of mentalities
		t) Stakeholders

The theme of "Product and Food Waste" (table 3) exposes the participants' concerns regarding the reduction of waste in the food industry. This involves careful selection of suppliers, designing offers, and implementing waste minimization strategies in restaurant companies. The theme is divided into three categories: suppliers and raw materials, food waste minimization, and gastronomic offers. The "Suppliers and raw materials" category explores various aspects related to food resource supply in restaurants. They have been looking for suppliers that guarantee the highest quality of raw materials while adhering to sustainability practices **as stated by** *"I think there's still a long way to go. I think we are lucky enough to work with excellent suppliers who meet all the requirements, but in this area, perhaps more specifically sustainability, I think there is still a long way to go for many potential suppliers"* (interview 6). The category has four subcategories, namely: quality, typology, products, and limitations. The primary goal of transitioning to a circular economy in a restaurant is to minimize food waste. When talking about food waste, we are not just talking about what is not consumed and goes to waste, but rather the entire associated process that led to this moment. This reduction can be carried out both upstream, on the production side, and the way the raw material is handled, and downstream, in the proper routing of food scraps. To this end, minimizing food waste involves controlling the waste process from production to disposal. The "Minimizing food waste" category arises from three subcategories: production and confection, food surplus, and monitoring **as referred by** *"So we don't have plating like in a restaurant, where I*

*add another spoonful of rice, one less spoonful of rice, serve very little, serve very little. What we have that I think is also very interesting and that people sometimes don't know about: we have the portions as they are: whether it's the normal menu, or the large menu, the portion is always the same, the weight is always the same, the amount of potatoes is always the same.” (interview 1).* The "Gastronomic Offer" category emerged from three subcategories: type of menu, food options, and nutritional balance. This category highlights the best practices designed by restaurants that promote conscious consumption and minimize food waste through innovative food solutions and menu options. Many companies are making strides toward promoting healthier eating habits by offering more balanced and diverse menus. This reflects their commitment to sustainability and prioritizing the health and well-being of their customers. These efforts include incorporating options with less fat and salt, as well as providing a wider range of nutritious choices. An example of this category is *“the balance. We have fruit and vegetables and carrots. We have, within our portfolio, mostly burgers and potatoes, but we also have less salad because I can't eat a burger every day and, therefore, our work in terms of that balance you were talking about or that care with the issue of food, which is also a very expensive subject for us, not least because we always live with the stigma of fast food and bad, unhealthy food, which is why I said we will never be a healthy food company, we will always be a restaurant of variety and balance, because it is possible to eat in a balanced way. The salad menu is accompanied by soup and I can swap my fries for soup and eat the menu and my burger, and I can order a natural burger without sauce. So the story that you can't eat healthy is no longer true.”* (interview 1).

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**Table 3: Theme, categories, and subcategories of the “Product and Food Waste” analysis dimension**

Theme	Categories	Subcategories
3. Product and Food Waste	3.1. Suppliers and raw materials	u) Quality
		v) Typology
		w) Products
		x) Limitations
	3.2. Minimizing food waste	y) Production and preparation
		z) Food surplus
		aa) Monitoring
	3.3. Gastronomic Offer	bb) Type of menu
		cc) Food options
		dd) Nutritional balance

## 5. Discussion and Conclusions

Our study has identified good sustainable and circular practices that are currently being implemented in restaurants. Our participants highlighted the crucial role of a strong brand positioning for the development of these practices within organizations. Our research focuses on the concept of CE, which aims to operate without waste, saving resources, and acting in harmony with the biosphere. The CE concept involves closed material and energy circuits that encourage the use of resources in the economy, moving away from the traditional linear economic model. As Ellen MacArthur Foundation (2013) defined CE is an economic system that transforms goods that have reached the end of their useful life into resources for other purposes, keeping these resources in the cycle for as long as possible, closing cycles in industrial ecosystems, minimizing waste, and optimizing the use of resources. Despite the benefits that a CE-based system can provide to organizations, the lack of familiarity and fear of the unknown has made it challenging for this term to gain traction in companies and administrations. However, we assure you that the long-term benefits of implementing circular practices outweigh the initial costs. Ministries, local authorities, associations, federations, fraternities, chefs, and higher education institutions play a pivotal role in encouraging the adoption of circular practices in the restaurant sector. Our study highlights the need for the development of systems that go beyond the traditional linear economic models, using closed material and energy circuits that encourage the use of resources in the economy. Although it may involve major structural changes throughout the entire supply chain and require high extra costs for training employees and implementing technological infrastructure, the benefits of adopting circular practices are significant.

In conclusion, adopting circular practices can help your organization move towards a more sustainable and circular economic model. By embracing the CE concept, we can minimize waste, optimize the use of resources, and operate in harmony with the biosphere. It is time to take the necessary steps towards a more sustainable and circular future.

## References

- Alt, R., and Zimmermann, H.-D. (2019) 'Electronic Markets on platform competition', *Electronic Markets*, 29(2), pp. 143–149. doi:10.1007/s12525-019-00353-y.
- Barnham, C. (2015) 'Quantitative and qualitative research: Perceptual foundations', *International Journal of Market Research*, 57(6), pp. 837–854. doi:10.2501/IJMR-2015-070.
- Bocken, N. M. P., de Pauw, I., Bakker, C., and van der Grinten, B. (2016) 'Product design and business model strategies for a circular economy', *Journal of Industrial and Production Engineering*, 33(5), pp. 308–320. doi:10.1080/21681015.2016.1172124.
- Borrello, M., Lombardi, A., Pascucci, S., and Cembalo, L. (2016) 'The Seven Challenges for Transitioning into a Bio-based Circular Economy in the Agri-food Sector', *Recent Patents on Food, Nutrition & Agriculture*, 8(1), pp. 39–47. doi: 10.2174/221279840801160304143939.
- Braun, V., and Clarke, V. (2019) 'Reflecting on reflexive thematic analysis', *Qualitative Research in Sport, Exercise and Health*, 11(4), pp. 589–597. doi: 10.1080/2159676X.2019.1628806.
- Chou, S.-F., Horng, J.-S., Liu, C.-H., Huang, Y.-C., and Chung, Y.-C. (2016) 'Expert Concepts of Sustainable Service Innovation in Restaurants in Taiwan', *Sustainability*, 8(8), pp. 739. doi:10.3390/su8080739.
- Clarke, V., and Braun, V. (2017) 'Thematic analysis', *The Journal of Positive Psychology*, 12(3), pp. 297–298. doi: 10.1080/17439760.2016.1262613.
- Dora, M. (2019) 'Collaboration in a circular economy: Learning from the farmers to reduce food waste', *Journal of Enterprise Information Management*, 33 (4), pp. 769–789. doi: 10.1108/JEIM-02-2019-0062.
- Ellen MacArthur Foundation (2013) 'Towards the Circular Economy Vol.1: Economic and business rationale for an accelerated transition'.
- Ellen MacArthur Foundation (2015) 'Towards a Circular Economy: Business rationale for an accelerated transition'.
- Geissdoerfer, M., Savaget, P., Bocken, N. M. P., and Hultink, E. J. (2017) 'The Circular Economy – A new sustainability paradigm?', *Journal of Cleaner Production*, 143, pp. 757–768. doi: 10.1016/j.jclepro.2016.12.048.
- Ghisellini, P., Cialani, C., and Ulgiati, S. (2016), 'A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems', *Journal of Cleaner Production*, 114, pp. 11–32. doi: 10.1016/j.jclepro.2015.09.007.
- Hennink, M. M., Kaiser, B. N., and Weber, M. B. (2019) 'What Influences Saturation? Estimating Sample Sizes in Focus Group Research', *Qualitative Health Research*, 29(10), pp. 1483–1496. doi: 10.1177/1049732318821692.
- Higgins-Desbiolles, F., Moskwa, E. and Wijesinghe, G. (2019) 'How sustainable is sustainable hospitality research? A review of sustainable restaurant literature from 1991 to 2015', *Current Issues in Tourism*, 22(13), pp. 1551-1580, doi: 10.1080/13683500.2017.1383368
- Kirchherr, J., Yang, N.-H. N., Schulze-Spüntrup, F., Heerink, M.J., and Hartley, K., (2023) 'Conceptualizing the Circular Economy (Revisited): An Analysis of 221 Definitions', *Resources, Conservation and Recycling*, 194, 107001. doi: 10.1016/j.resconrec.2023.107001.
- Lakatos, E. S., Yong, G., Szilagy, A., Clinci, D. S., Georgescu, L., Iticescu, C., and Cioca, L. I. (2021) 'Conceptualizing core aspects on circular economy in cities', *Sustainability (Switzerland)*, 13(14). doi: 10.3390/su13147549.
- Leitão, A. (2015) 'Economia circular: uma nova filosofia de gestão para o séc. XXI', *Centro Regional de Informação Para a Europa Ocidental*.
- Mirabella, N., Castellani, V., and Sala, S. (2014) 'Current options for the valorization of food manufacturing waste: A review', *Journal of Cleaner Production*, 65, pp. 28–41. doi: 10.1016/j.jclepro.2013.10.051.
- Papargyropoulou, E., Lozano, R.K., Steinberger, J., Wright, N., and Ujang, Z. bin. (2014) 'The food waste hierarchy as a framework for the management of food surplus and food waste', *Journal of Cleaner Production*, 76, pp. 106–115. doi: 10.1016/j.jclepro.2014.04.020.
- Richter, B., and Bokelmann, W. (2016) 'Approaches of the German food industry for addressing the issue of food losses', *Waste Management*, 48, pp. 423–429. doi: 10.1016/j.wasman.2015.11.039.
- Rico Lugo, S. D., Kimita, K., and Nishino, N. (2023) 'Characteristics of decision process towards circular food economy: A review', *Cleaner Logistics and Supply Chain*, 7, 100104. doi:10.1016/j.clscn.2023.100104.
- Rodrigues, C., Salgado, M., Pires, P. and Silva, R. (2022) 'Gastronomy and the contribution to the sustainable development of tourism in the Serra da Estrela region: the case of the Museu do Pão', *Revista de Turismo y Patrimonio Cultural*, 20(5), pp. 1191–1202. doi: 10.25145/j.pasos.2022.20.080.
- Schubert, F., Kandampully, J., Solnet, D., and Kralj, A. (2010) 'Exploring Consumer Perceptions of Green Restaurants in the US', *Tourism and Hospitality Research*, 10(4), pp. 286–300. doi: 10.1057/thr.2010.17.
- Thyberg, K. L., and Tonjes, D. J. (2016) 'Drivers of food waste and their implications for sustainable policy development', *Resources, Conservation and Recycling*, 106, pp. 110–123, Elsevier. doi: 10.1016/j.resconrec.2015.11.016.
- Vilarinho, M. V., Franco, C., and Quarrington, C. (2017) 'Food loss and waste reduction as an integral part of a circular economy', *Frontiers in Environmental Science*, 5(5). doi: org/10.3389/fenvs.2017.00021.