

FOOD WASTE PREVENTION SOLUTIONS IN THE NON-FINANCIAL REPORTS OF ROMANIAN FOOD RETAILERS

<https://doi.org/10.47743/jopafl-2023-30-15>

PETREA Mădălina-Ioana

Alexandru Ioan Cuza University of Iași, Doctoral School of Economics and Business
Administration
Iași, Romania
madalinapetrea@hotmail.com

Abstract: The research delves into the non-financial reports of Romanian food retailers, shedding light on the solutions adopted to prevent food waste. The research is focused on six of the biggest food retailers in Romania and their last two public sustainability reports from 2020 and 2021. By analyzing the reports, the research uncovers the most important strategies, measures and innovations implemented to help reduce wastage in the food retail sector in Romania. The findings of the study point towards a growing awareness and commitment among Romanian food retailers towards sustainable business strategies and food waste management strategies.

Keywords: food waste, prevention, waste management, food retail, sustainability.

JEL Classification: Q13, Q18, M14, L81.

This Article was presented as a paper at the 15th edition of the Annual International Conference Globalization and Higher Education in Economics and Business Administration (GEBA 2023), which was held at the Alexandru Ioan Cuza University, Faculty of Economics and Business Administration in Iasi, Romania from the 19-21 October 2023.

Introduction

In today's society, sustainability, social responsibility and ethical consumerism are driving forces behind business transformation and the issue of food waste is climbing up the social agenda. The food retail sector is a crucial juncture in the food supply chain, being situated between the supplier and the consumer. In the light of the legislation, the non-financial reporting has become imperative, this transparency being communicated through "sustainability reports" or "CSR reports" which food retailers make public. This article delves into the proactive measures and solutions presented in the non-financial reports of Romanian food retailers, analysing their strategies, commitments and other implications of the food waste prevention. The European Commission reports that in the European Union "around 59 million tons of wasted food, which accounts for almost 131 kilograms per capita, is generated annually at Union level, which is estimated financially at 132 billion euro" (Eurostat, 2023). The problem is of particular importance, being clear that it should concern us not only from a social and environmental perspective, but also from an economic perspective, the amounts of food reported as wasted being significant. According to public databases, the largest quantities of wasted food are found in Germany, France,

and Italy (Eurostat, 2023). It is concerning that Romania did not even report the quantities of wasted food by sectors of activity, deeper research being required in this area.

Eurostat statistics also estimate that around 10% of the food which is available to European consumers is wasted, which is worrying taking into consideration that at the same time, about 36.2 million people are not having the opportunity to afford a quality meal every other day. (European Commission, 2023).

The European Union is highly dedicated to the goal of sustainable development no. 12, namely “Setting sustainable consumption and production patterns” which aims to halve the level of food waste at the consumer, and at the retailer level by 2030. It is important to also note that reduction of food waste is not only beneficial in terms of achieving the sustainable development goals, but can also make a beneficial contribution to the fight against climate change as food waste has a great impact on the environment, being responsible for around 7% of the greenhouse gas emissions in the European Union (European Commission, 2023). In 2010, in the United States of America, approximately “43 billion pounds were wasted in food retail stores” (Buzby, Hyman, Stewart, & Wells, 2011), which is particularly problematic since in 2016, about 12% of the households were “food-insured” (Economic Research Service, 2017). Most losses in retail operations relate to “perishable products such as pastries, meat, seafood or ready-made foods” (Gunders, 2017). Practices leading to food waste in food retailers include: “over-supply of showcases with products, high expectations regarding the appearance of fruits and vegetables, packages/packaging with too large quantities, short deadlines of -sale up to- on products, damaged products, specific items for a given season, little staff in stores and others” (Gunders, 2017).

The European Union Code of Conduct on Responsible Food and Marketing Practices also entered into force in July 2021, resulting from the “Farm to Fork” program, the code aimed at improving the sustainability performance of economic operators (including food retailers). The code was developed by EU food industry associations and businesses, with other actors such as associations, trade unions and NGOs contributing. In addition to the statistics mentioned above, a multitude of studies have placed consumers and producers as among the most responsible to produce food waste (Schanes, Dobernig, & Gözet, 2018), however, food retailers occupy a particularly important position, being placed between producers and consumers, having the power to influence food waste (Ribeiro, Sobral, Peças, & Henriques, 2018). To help reduce food waste, they adopt practices and policies aimed at sustainability as part of their strategy of “CSR-Corporate Social Responsibility” which they usually, reports them through sustainability reports or CSR reports. The social responsibility of enterprises / organizations was defined as consisting of “organizational actions and policies that highlight stakeholders, but also economic, social and environmental aspects” (Aguinis & Glavas, 2012). Although they include food waste issues in their organizational strategy, this remains an important issue that requires more interest from researchers.

Previous works have identified the main causes of food waste in supermarkets, including: “high quality standards, product range size, delivery problems, packaging problems; storing products in the store and customer behavior in the store, customer demand patterns and their high expectations” (Teller, Holweg, Reiner, & Kotzab, 2018). However, the literature suggests that “among the reasons why CSR strategies are not well implemented can be called the lack of understanding of managers on the implementation of sustainable strategies in daily work” (Moser, 2020) . This shows that more attention should be paid to

CSR micro-processes and associated practices (Aguinis & Glavas, 2012). Micro-processes are translations into daily actions of high-level actions and may consist of several types of activities such as “sharing of knowledge or communication” (Aguinis & Glavas, 2012). A study conducted in the UK and Spain showed that “one of the root causes of food waste is lack of knowledge sharing” (Mena, Adenso-Diaz, & Yurt, The causes of food waste in the supplier-retailer interface: Evidences from the UK and Spain., 2011) , but studies on the role of food retail managers in reducing food waste are lacking.

There are a multitude of studies done on consumers in terms of waste, but there are very few and those that exist are superficial. In one study it was identified that “management actions lead to the production of food waste” (Mena, Terry, Williams, & Ellram, 2014). Even if this aspect has been identified, the actions and practices discovered are part of a macro-organizational strategy.

This present study is dedicated to understanding the strategies used by the biggest food retailers in Romania to fight food waste at the level of stores. In the following sections it is presented the methodology used for the research, followed by the findings of the research. The paper ends with a series of recommendations and conclusions.

Methodology

This methodology describes the qualitative approach employed to analyze the non-financial reports of Romanian food retailers in order to uncover the food waste prevention solutions used by food retailers. The non-financial reports of major Romanian food retailers were selected based on the reputation and availability of the reports. The reports from the past two financial years were selected, the last two reports published, in order to provide a contemporary view of the waste prevention practices. In this research the following sustainability reports were analyzed: Kaufland, Auchan, Carrefour, Penny, Profi and LIDL from 2020 and 2021.

The scope of our study is to analyze if the mentioned companies adopted effective food waste prevention strategies and actions. Therefore, we came up with the following hypotheses:

H1. The Romanian companies provided sustainability reports for 2021 and 2021.

H2. The companies analyzed adopted appropriate measures to prevent and reduce food waste.

To select the companies, some criteria were used:

- The companies must be food retailers.
- The companies are located in Romania.
- The companies report according to GRI standards.
- The companies have public sustainability reports for 2020 and 2021.

As a result of the sampling process, we analyzed twelve sustainability reports or non-financial reports published by Kaufland Romania, LIDL Romania, Penny Market Romania, Profi Romania, Auchan Romania and Carrefour Romania.

The non-financial reports were obtained directly from the companies’ official websites. A thematic analysis was used. This involved coding and categorizing the content of the reports to identify key themes related to food waste prevention. The following themes were identified: „actions taken by companies”, „innovative solutions” and „consumer education”.

Findings of the research

As a starting point of our research, we began by introducing the sustainability reports in the Atlas.ti software and counted the apparition of some keywords most related to food waste: “waste” and other forms of the word, “donations” and other forms of the word and “sustainability” and other forms of the word. The word count (Table 1) is extremely important for our research as it shows us the evolution of term appearance from 2020 to 2021. Moreover, it shows us which retailer uses some of the words more often than others, as a token of their dedication to the cause of sustainability.

Table 1. Word count selection from the sustainability reports

Report	Waste (and other forms)	Donations (and other forms)	Sustainability (and other forms)
Auchan 2020	27	19	99
Auchan 2021	38	23	212
Carrefour 2020	8	12	21
Carrefour 2021	12	17	15
Kaufland 2020	68	18	143
Kaufland 2021	96	12	148
LIDL 2020	19	23	166
LIDL 2021	25	14	212
Mega 2020	11	41	31
Penny 2020	23	6	669
Penny 2021	39	8	852

(Source: Own elaboration of the author)

Specific actions taken by companies

Auchan Romania takes a lot of actions in order to combat food waste. Their “Zero Waste” campaign saved 4.3 million products from waste during 2021. Another specific action taken by Auchan consists of optimizing orders so that the right quantities are distributed in Auchan stores. In 2021 they signed a long-term partnership with the Food Bank (Auchan Retail Romania, 2020). To provide healthy food, they invested 100.000 euro to promote healthy food and to change the recipes for their own production (less salt, less oil, less sugar). Overall, the whole value chain is taken into consideration, from the products department to the stores, special attention is paid to product management to avoid exceeding usage dates. Carrefour Romania has a dedication to collaborations with NGOs, through which they donate products with short expiry dates and accelerate sales of products with short expiry dates (Carrefour Romania, 2020). Kaufland Romania has a great concern for food waste. They invest material and financial resources to minimize the amount of waste along the food chain (from suppliers, to warehouses, stores and customers). Internally, they focus on “improving internal systems, monitoring and managing stocks, developing and implementing systems that monitor and manage resource production in a sustainable manner, promoting responsible consumption” (Kaufland Romania, 2022). They also use automatic orders, one or maximum two days stocks, they use shortest supply trip and continuous monitoring and checking of expiry dates. In February 2021, together with the “Your Chance Association” they launched the first social canteen dedicated to the supporting disadvantaged people and started donating social tickets. The tickets donated in 2020 had a total value of 500.000 lei and as a part of the social canteen action they donated 18 tons of food products to the Food Bank with a total value of 35.000 euro.

LIDL Romania takes measures in support of the fight against food waste. Some of the actions taken are a 30% price reduction which is applied to packaged bread, vegetables and fruits and refrigerated items approaching expiry date; close monitoring of losses vs. turnover of items; campaigns on the website and social media pages to let the consumers know how important it is not to waste.

Penny Market Romania uses effective stock management in stores and warehouses, in store discount schemes, collaborations with food banks and trying to identify alternatives to prevent food that is no longer fit for human consumption from going to landfill. Their strategy is based on the following pillars: “maximizing the redistribution of surplus food to food banks; creating in-store initiatives such as accelerated sales; optimizing the inventory process and using AI-based solutions such as automatically generated orders; using surplus food as feed or energy source; developed a system to improve visibility of cause/area of food waste generation and not least food waste reporting” (Penny , 2020). The quality and long-lasting of food is ensured by equipping the display cases with doors, using IFCO crates and appropriate transport logistics. In 2020, Profi wasted 4,753 tons of food. A specific action taken by this food retailer is training the employees on the implementation of the FIFO (first in, first out) system (Profi, 2020). They also implemented actions for accelerated sale and donation of products close to their expiry date.

Innovative solutions

Various innovative solutions are being used to combat food waste in the largest food retailers from Romania. In the Auchan 2020 report it is highlighted the “Zero Waste” programme. This is an organized system through which they sell products closer to their expiry date at lower prices than usual. The “zero-waste areas” which are stocked with products close to the expiry date, the retailer also encourages consumers to avoid food waste, while also saving money. Such actions are being noticed in all the major food retailers in Romania. Auchan reported in the 2021 sustainability report that they integrated “artificial intelligence algorithms into the project for all 47 stores in Romania” (Auchan Retail Romania, 2021).

Another solution from LIDL Romania is the “Ideas club initiative” through which the stock management department accepts proposals for solutions to reduce food waste (LIDL Romania, 2021). This initiative is valuable because it encourages brainstorming which can lead to new and great ideas for solving a pressing issue such as food waste.

In the reports of Penny Market Romania, we identified some of the best innovative solutions for fighting against food waste. First of all, the retailer stated in the 2020 report that they started working on creating a database that will help them get a better insight into where and how quantities of food can become waste. Second of all, in the 2021 report they introduced the partnership with “Bonapp.eco”, which is a mobile app aiming to combat food waste by connecting consumers with retailers whose food is close to the expiry date. Another great solution identified in the Penny Market 2021 report was to recover the food that was no longer fit for human consumption by transforming them in biogas (Penny, 2021). For this, the fruit and vegetables that could no longer be sold in stores were collected separately on site and then handed over to an authorized collector for delivery of biogas. The project was implemented in 5 stores where they delivered 104 tons of fruit and vegetables for disposal.

The reports of Kaufland Romania from 2020 and 2021 highlight the stock management strategies in order to reduce the food waste. Based on the sales history, the system used makes daily order proposal for all items in the stores. The system is also operated manually by operators who inform it about the “contingency factor” such as season, weather, holidays etc.

Consumer education

Auchan developed numerous communication tools that support awareness raising on food waste. They post frequently zero-waste recipes on the social media pages, encouraging cooking with leftovers, using the hashtag “#zerowaste”. Carrefour Romania is also dedicated to educating consumers. In the 2020 report, they mentioned that together with the “Angels Smile Association” they made, for the third year in a row, an event under the umbrella of “Start Healthy Habits, stop waste!”. In 2021, Carrefour hosted a live webinar entitled “Christmas 2.0. No waste but inspired” on their Facebook page (Carrefour Romania, 2021). At this event they invited a reputable Romanian chef who helped people to reinvent the leftovers in a fresh style. LIDL Romania has an initiative entitled “The Responsible Recipe” which aims to offer customers ideas and solutions for food storage, consumption and also reuse of foods (LIDL Romania, 2020). They are also extremely active on social media, especially Instagram, educating consumers on how to be more responsible. Penny Market Romania focuses on raising awareness by launching diverse campaigns and activities dedicated to reducing food waste. In 2021 they also published the “Anti-waste Code of Manners” especially aiming to educate consumers (Penny, 2021). This initiative is extremely interesting and should be implemented by all the food retailers to make an impact.

Conclusions

The research conducted revealed valuable information about the food waste prevention strategies used by the food retailers analysed. The food retailers analysed have displayed an increasing consciousness towards the gravity of food wastage as a societal and environmental challenge. It is important to highlight that their non-financial reports reflect a commitment to aligning with global sustainability standards and a dedication to responsible business practices. The reports highlight diverse solutions, from supply chain management to in-store initiatives and community partnerships. It is important to point out that this multipronged approach reflects the complexity of the food waste issue. While many retailers are making great progress, there is a need for industry-wide collaboration and a need for greater investment in innovative solutions. Moreover, even though there are consumer education campaigns, we consider that there is still room for improvement. In conclusion, the non-financial reports of Romanian food retailers present a clear narrative: the industry is moving forward towards a more sustainable future, driven by both consumer demand and genuine commitment to ethical responsibility. However, the journey ahead is complex, requiring the combined efforts of retailers, consumers, policymakers and the broader food industry in order to find solutions for the food waste problem.

Limitations

The study considered only a limited number of Romanian food retailers, therefore may not capture the full spectrum of practices across the entire industry. Another limitation regards

the data collection. Being based on secondary data, the study is dependent on the transparency and accuracy of these reports, which might not give a complete picture of the actual efforts undertaken. Moreover, self-reported data is often subjected to bias and might not represent the actual situation. Another limitation regards the fact that the study considered reports from a specific timeframe. Another limitation is that being qualitative analysis, the findings might lack generalizability and are not able to pinpoint specific statistical trends.

Research ethics statement

The author declares no conflict of interest associated with this research. Neither the author or the institution represented have received funding or support from the entities under study or any competing interests. The study relies on public available information and the data sourced from the non-financial reports of Romanian food retailers was treated with the utmost respect for its integrity. No data was intentionally altered, omitted or manipulated to present a misleading narrative or conclusion. Every effort was made to ensure that the results presented are accurate, unaltered and represent the genuine findings of the analysis of non-financial reports of Romanian food retailers.

References

1. Aguinis, H., & Glavas, A. (2012). What we know and don't know about corporate social responsibility: A review and research agenda. *Journal of Management*, 932-968. <https://doi.org/10.1177/0149206311436079>
2. Auchan Retail Romania. (2020). Sustainability Report. Retrieved from https://auchan.vtexassets.com/assets/auchan.file-manager-rest/images/273b1e33-77b5-48b2-b0ee-245189705e9f_8c6af594eae1caa2ab93a0a061c5ca57.pdf
3. Auchan Retail Romania. (2021). Sustainability Report. Retrieved from https://auchan.vtexassets.com/assets/auchan.file-manager-rest/images/8d63848f-a42b-4036-a995-f0e50f2a576f_439142f5923df0b86f316a7ea3e02942.pdf
4. Buzby, J. C., Hyman, J., Stewart, H., & Wells, H. (2011). The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States. *The Journal of Consumer Affairs*, 492-515. <https://doi.org/10.1111/j.1745-6606.2011.01214.x>
5. Carrefour Romania. (2020). Carrefour Romania Bilanț CSR. Retrieved from https://carrefour.ro/corporate/pdf/Rezultate_Carrefour_CSR_2020.pdf
6. Carrefour Romania. (2021). Raport CSR 2021. Retrieved from https://carrefour.ro/corporate/storage/uploads/regulations/2022/10/Rezultate%20Carrefour%20CSR_2021-compressed_compressed.pdf
7. Eurostat. (2023, august). Statistics Explained . Retrieved from Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Food_waste_and_food_waste_prevention_-_estimates
8. Eurostat. (2023, march 07). Food waste and food waste prevention by NACE Rev. 2 activity- tonnes of fresh mass. Retrieved from Eurostat: https://ec.europa.eu/eurostat/databrowser/view/env_wasfw/default/table?lang=en
9. European Commission. (2023). Food waste. Retrieved from Food safety: https://food.ec.europa.eu/safety/food-waste_en
10. European Commission. (2023). Food waste. Retrieved from Food safety: https://food.ec.europa.eu/safety/food-waste_en
11. Economic Research Service. (2017). Food Security in the U.S.: Key Statistics & Graphics. Retrieved from <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx>

12. Gunders, D. (2017). Wasted: How America is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill. Retrieved from <https://www.nrdc.org/sites/default/files/wasted-2017-report.pdf>
13. Kaufland Romania. (2022). Sustainability . Retrieved from <https://despre.kaufland.ro/responsabilitate/sustenabilitate.html>
14. LIDL Romania. (2021). Raport de sustenabilitate Lidl Romania. Retrieved from <https://www.lidl.ro/l/ro/cataloge/raport-sustenabilitate-an-financiar-2021/view/flyer/page/1>
15. LIDL Romania. (2020). Raport de sustenabilitate. Retrieved from <https://www.lidl.ro/l/ro/cataloge/raport-de-sustenabilitate-2020/view/flyer/page/1>
16. Lupu, D., & Tiganasu, R. (2024). Does education influence COVID-19 vaccination? A global view. *Heliyon*, 10(3).
17. Moser, C. (2020). *Managerial Practices of reducing food waste in supermarkets*. Palgrave Macmillan.
18. Mena, C., Adenso-Diaz, B., & Yurt, O. (2011). The causes of food waste in the supplier-retailer interface: Evidences from the UK and Spain. *Resources, Conservation and Recycling*, 648-658. <https://doi.org/10.1016/j.resconrec.2010.09.006>
19. Mena, C., Terry, L. A., Williams, A., & Ellram, L. (2014). Causes of waste across multi-tier supply networks: Cases in the UK food sector. . *International Journal of Production Economics*, 144-158. <https://doi.org/10.1016/j.ijpe.2014.03.012>
20. Penny . (2020). Raport de sustenabilitate. Retrieved from <https://sustenabilitate.penny.ro/raport-de-sustenabilitate-2020/>
21. Penny. (2021). Raport anual . Retrieved from https://files.rewe.co.at/PennyIntLeaflet/RO/Raport_Anual_2021/
22. Profi. (2020). Raport de Sustenabilitate. Retrieved from <https://www.profi.ro/raport-de-sustenabilitate/>
23. Ribeiro, I., Sobral, P., Peças, P., & Henriques, E. (2018). A sustainable business model to fight food waste. *Journal of Cleaner Production*, 262-275. <https://doi.org/10.1016/j.jclepro.2017.12.200>
24. Schanes, K., Dobernig, K., & Gözet, B. (2018). Food waste matters—A systematic review of household food waste practices and their policy implications. *Journal of Cleaner Production*, 978-991. <https://doi.org/10.1016/j.jclepro.2018.02.030>
25. Teller, C., Holweg, C., Reiner, G., & Kotzab, H. (2018). Retail store operations and food waste. *Journal of Cleaner Production*, 981-997. <https://doi.org/10.1016/j.jclepro.2018.02.280>



This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution - Non Commercial - No Derivatives 4.0 International License.