

# The Interplay Between Restaurant Food Waste Decisions, Context, and Externalities: Results from a Systematic Mapping Review

Alexandra Neill

*Newcastle University, Newcastle Upon Tyne, United Kingdom*

## Abstract

Food waste in the food service industry is an area of interest in research and policy, especially as it is estimated that this sector is responsible for 12% of global food waste (Tostivint et al., 2016). The regulatory frameworks to reduce and mitigate food waste are contextually and geographically variable (Dhir et al., 2020) and the extant body of literature is emerging (Munir, 2022). Current research suggests a wide scope of exogenous and endogenous factors are linked to food waste including: managerial decisions (processes and practices of surplus handling), local policy, competition, revenues, and procurement (Dhir et al., 2020; Martin-Rios et al., 2018; Papargyropoulou et al., 2016). Furthermore, research suggests a correlation between manager attitudes, behaviours, experience, and their mitigatory actions (De Visser-Amundson, 2020; Filimonau et al., 2018; Martin-Rios et al., 2018; Principato et al., 2018; Souza Monteiro et al., 2020). Previous reviews, namely Dhir et al. (2020), Munir (2022), and Filimonau and De Coteau (2019), have offered contextual insights into the magnitude of research gaps, but this systematic mapping review (following the guidelines of Petersen, Vakkalanka and Kuzniarz (2015)) presented an exploratory approach to contextualising food waste within, specifically, the restaurant setting. This was achieved by comparing and interrelating the internal and external factors that hold prominence in restaurant food waste. Variables related to geography and PESTLE (a framework to categorise externalities relating to Political, Economic, Social, Technological, Legal, and Environmental factors), and SWOT (a framework to identify internal factors of Strengths and Weaknesses and external factors of Opportunities and Threats) were explored. These were also combined with restaurant characteristics, food waste practices, and methodological research approaches to provide an overall picture of the state of the art of food waste management in restaurants in Europe, North America, Australia, and New Zealand. Findings suggested that exploring the concept of restaurant food waste at different scales (e.g.: restaurant-level, local, regional, or national) presented the clearest path to identifying systemic opportunities, gaps, or contradictions. This led to the main conclusion that context matters, highlighting that both opportunities and threats relating to the various components of the PESTLE were intricately linked at different scales, but were also inherently different, complementary, conflicting, or contradictory. For example, policy

opportunities at a local level to encourage correct food waste disposal in restaurants could be hindered by a lack of national support, funding, and infrastructure, which could render local initiatives challenged or even redundant. Furthermore, the findings appeared to indicate that defining and situating the restaurant as an operational entity within the context of its operational activities could provide some insight into their chosen food waste activities. It was concluded that internalities such as restaurant characteristics (service type, restaurant type, price point, etc.), and other externalities (such as locality, competition, local infrastructure, etc.) might also contribute to processes and practices adopted in a restaurant. As such, this review presents evidence that could contribute to the design and implementation of inclusive and effective policies whereby the complexities of context, the external environment, and internal operation are considered.

**Keywords:** restaurant, context, food waste, externalities

### References

- De Visser-Amundson, A. (2020) 'A multi-stakeholder partnership to fight food waste in the hospitality industry: a contribution to the United Nations Sustainable Development Goals 12 and 17', *Journal of Sustainable Tourism*, pp. 1-28. Dhir, A., Talwar, S., Kaur, P. and Malibari, A. (2020) 'Food waste in hospitality and food services: A systematic literature review and framework development approach', *Journal of Cleaner Production*, 270, p. 122861. Filimonau, V., Krivcova, M. and Pettit, F. (2018) 'An exploratory study of managerial approaches to food waste mitigation in coffee shops', *International Journal of Hospitality Management*, 76. Martin-Rios, C., Demen-Meier, C. and Gössling, S. (2018) 'Food waste management innovations in the foodservice industry', *Waste Management*, 79, p. 196. Munir, K. (2022) 'Sustainable food waste management strategies by applying practice theory in hospitality and food services- a systematic literature review', *Journal of Cleaner Production*, 331, p. 129991. Papargyropoulou, E., Wright, N., Lozano, R., Steinberger, J., Padfield, R. and Ujang, Z. (2016) 'Conceptual framework for the study of food waste generation and prevention in the hospitality sector', *Waste Management*, 49, pp. 326-336. Petersen, K., Vakkalanka, S. and Kuzniarz, L. (2015) 'Guidelines for conducting systematic mapping studies in software engineering: An update', *Information and Software Technology*, 64, pp. 1-18. Principato, L., Pratesi, C.A. and Secondi, L. (2018) 'Towards Zero Waste: An Exploratory Study on Restaurant managers', *International Journal of Hospitality Management*, 74, pp. 130-137. Souza Monteiro, D.M., Brockbank, C. and Heron, G. (2020) 'Food Waste in Event Catering: A Case Study in Higher Education', *Journal of Food Products Marketing*, 26(4), pp. 262-278. Tostivint, C., Östergren, K., Quested, T., Soethoudt, H., Stenmarck, A., Svanes, E., O'Connor, C., 2016. 'Food Waste Quantification Manual to Monitor Food Waste Amounts and Progression'. FUSIONs Project, Fredrikstad, Norway.

**Acknowledgments:** This research is funded by NINE DTP. The author would like to thank Dr Diogo Souza Monteiro, Dr Smriti Sharma, and Prof Alex Hughes for their valued input and guidance, as well as Khalid Medani for his contribution as secondary researcher during the data extraction stage, and Dr Beth Clark for her support and wisdom.