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Food Waste in Hotel Banquet Operations: Hidden Inefficiencies and Sustainable Solutions

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Abstract

Banquet operations are the pride of hotels, showcasing plenty of foods and hospitality during weddings, conferences, and celebrations. But, behind this there is a hidden challenge: food waste. This paper explores inefficiencies in banquet catering and highlights sustainable solutions that balance guest satisfaction with operational efficiency. Drawing on recent scholarship and case studies, it argues that reducing banquet food waste is not only an environmental necessity but also a strategic opportunity for hotels to enhance profitability and reputation.

Keywords: Food Waste Management; Banquet Operations; Hospitality Sustainability; Resource Efficiency; Waste Reduction Strategies; Sustainable Hospitality Practices; Food Loss Prevention; Environmental Impact in Hotels

Introduction

Banquet halls symbolize celebration and huge variety of foods. In India, weddings often feature buffets with dozens of dishes, while corporate banquets emphasize variety and scale. But, once the event ends, trays of untouched food are discarded. This contradiction — large quantity for guests, waste for kitchens — is a recurring issue in hospitality worldwide. Most of the Banquet managers are faced by this problem - prepare too little and risk guest dissatisfaction, or prepare too much and waste the food. These hidden inefficiencies erode profitability, increase environmental impact, and undermine sustainability goals. This paper uncovers the drivers of banquet food waste and proposes solutions that make banquets favorable yet responsible.

Literature Review

Food Waste in Hospitality

Food waste in hotels is not just a logistical issue; it is a cultural and emotional one. Banquet managers often describe the tension between wanting to impress guests with plenty of foods and the guilt of discarding the untouched food after the event is over. Dhir, Talwar, Kaur and Malibari (2020) [2] highlight that the hospitality sector contributes nearly 12–18% of purchased food as waste, with banquets being especially contributing more. In India, where weddings and large gatherings symbolize generosity, the expectation of “more is better” often leads to excess preparation and unavoidable waste. Filimonau and Delysia (2019) [3] argue that food waste in hospitality is deeply tied to cautious practices. Chefs and managers prepare extra food to avoid the embarrassment of shortages, but this “safety buffer” becomes a hidden inefficiency. Guests rarely notice the surplus, yet staff witnesses the waste daily, creating frustration and moral conflict.

Hidden Inefficiencies in Banquet Operations

Several studies reveal inefficiencies that remain invisible to guests but are painfully obvious to staff. Overproduction is the most common, with hotels preparing 10–20% extra food “just in case” (Derqui & Filimonau, 2021) [1]. A banquet chef interviewed in Mensah’s (2019) [4] study admitted, “*We would rather throw food away than risk a guest leaving hungry.*” This mindset, while understandable, perpetuates waste. Guest behavior is another problem. Reynolds *et al.* (2020) [6] found that buffet diners leave nearly twice as much food compared

to à la carte diners. Guests often over serve themselves, motivated by curiosity or the desire to “get their money’s worth.” In cultural contexts like Indian weddings, where abundance is equated with hospitality, plate waste becomes almost inevitable.

Inventory mismanagement also plays a role. Dhir *et al.* (2020) ^[2] note that poor stock rotation leads to spoilage, especially when banquet menus require large quantities of perishable items. Staff shortages or rushed preparation worsen these inefficiencies.

Sustainable Solutions Proposed in Literature

Scholars propose a range of solutions that blend technology, operations, and human behavior.

- **Technology Integration:** AI forecasting and IoT inventory systems can reduce overproduction by up to 18% (Vukolić *et al.*, 2025) ^[7]. These tools help chefs predict guest attendance more accurately, reducing the need for “just in case” buffers.
- **Menu Engineering:** Mensah (2019) ^[4] shows that ingredient rotation and cross utilization reduce surplus stock by 25%. For example, surplus vegetables from banquets can be repurposed into soups or staff meals.
- **Behavioural Nudges:** Smaller plates and signage encouraging mindful consumption reduce guest plate waste by 20–30% (Reynolds *et al.*, 2020) ^[6]. Guests often appreciate gentle reminders that align with sustainability values.
- **Circular Economy Practices:** Papargyropoulou *et al.* (2014) ^[5] argue for food donation and composting instead of dumping 50–60 kg/week of edible food in the landfill. Hotels that adopt donation programs often report improved community relations and guest perception.

Methodology

Research Design

As highlighted in the literature review, previous studies (Dhir *et al.*, 2020; Tomaszewska *et al.*, 2021) ^[2, 8] have shown that food waste measurement in hotels typically involves weighing discarded food and categorizing it into avoidable and unavoidable types. Building on this established practice, the present study adopted a similar mixed-methods design, combining quantitative measurement with a qualitative literature-based inquiry. This ensures comparability with global benchmarks while contextualizing findings within published research.

Quantitative Measurement

Following Tomaszewska *et al.* (2021) ^[8], food waste was weighed at the end of each banquet using calibrated digital scales. Waste was categorized into avoidable (plate leftovers, overproduction) and unavoidable (bones, peels). This approach aligns with global benchmarks, where buffet banquets have been shown to generate 120–150 g of waste per guest. Similarly, Derqui & Filimonau (2021) ^[1] reported that hotels often prepare 10–20% extra food “just in case,” a practice considered in interpreting the results.

Qualitative Literature Review

As discussed in the literature review, systematic searches of scholarly papers provide insights into organizational and behavioral drivers of food waste. In this study, searches were conducted in Google Scholar, ProQuest, and

ScienceDirect using keywords such as “food waste hospitality,” “banquet operations,” and “hotel sustainability.” Articles were screened following PRISMA guidelines, with inclusion limited to peer-reviewed studies published between 2014 and 2025. Key sources included:

- Dhir *et al.* (2020) ^[2] — systematic review of hospitality food waste.
- Mensah (2019) ^[4] — sustainable practices in Ghanaian hotels.
- Papargyropoulou *et al.* (2014) ^[5] — food waste hierarchy framework.

Findings from these studies were coded thematically, allowing comparison between real-time hotel data and global published benchmarks.

Observational Notes

As emphasized in African hotel studies (AJHTL, 2021), observation of guest behavior is critical. The Field notes providing context for the quantitative measurements documented are

- Plate loading
- Buffet refill
- Leftover handling

Data Analysis

Quantitative data was analyzed using descriptive statistics, calculating mean waste per guest and percentage of purchased food wasted. Results were compared against benchmarks identified in the literature review (e.g., 12–18% of purchased food wasted globally, Dhir *et al.*, 2020) ^[2]. Qualitative findings from the literature review were coded thematically, ensuring that the study’s outcomes were interpreted within the broader academic context.

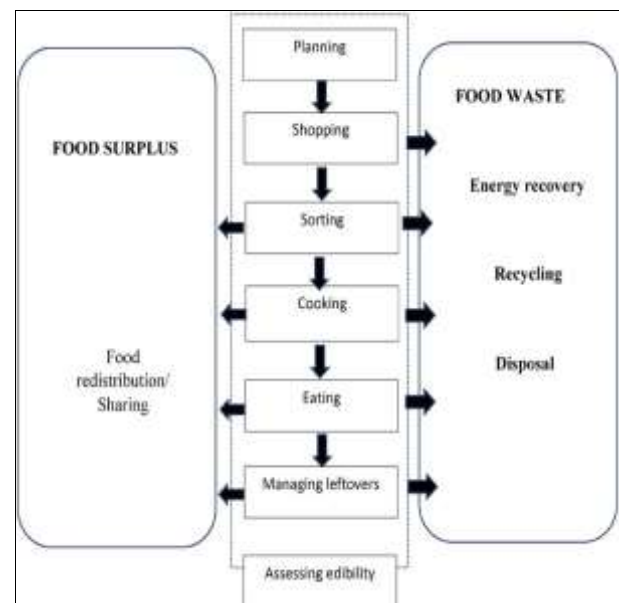


Fig 1: Waste prevention and Management

Findings & Discussion

Literature-Based Insights

- **Operational Practices:** Studies consistently highlight overproduction plays a major role in food waste in hotels. Managers often prepare surplus food to avoid reputational risk, reflecting a tension between guest satisfaction and sustainability (Derqui & Filimonau,

2021) [1].

- **Guest Behavior:** Research shows that buffet service encourages plate overloading, leading to higher levels of avoidable waste compared to plated service (Tomaszewska *et al.*, 2021) [8].
- **Sustainability Strategies:** Literature emphasizes menu engineering, ingredient rotation, and staff training as effective interventions to reduce waste (Mensah, 2019) [4].
- **Policy Frameworks:** The food waste hierarchy (Papargyropoulou *et al.*, 2014) [5] provides a structured approach to prevention, redistribution, and recycling, which is increasingly applied in hospitality contexts.

Observational Themes

- Guest tendencies to sample multiple dishes in banquets often result in unfinished plates.
- Staff replenishment practices, particularly in buffets, contribute to overproduction. This creates significant food waste, as high-value items, such as meats and prepared dishes, are kept fully stocked until the very end of service, resulting in high levels of disposal
- Limited adoption of structured waste measurement frameworks in local hotels suggests a gap between global best practices and regional operations.

Discussion

Alignment with Global Literature

The findings align with international studies that identify overproduction and guest behavior as primary causes of food waste in hospitality. While global benchmarks provide numerical ranges, the thematic drivers remain consistent across contexts.

Operational Implications

Hotels face a dilemma between ensuring guest satisfaction through abundance and minimizing waste. Literature suggests that balancing these priorities requires structured planning, such as portion control, predictive demand analysis, and menu design.

Behavioral Implications

- Guest education using signage by encouraging smaller portions
- Staff guidance to implement proactive portion control, use smaller serving vessels, and monitor consumption patterns to adjust restocking in real-time

These strategies could be adapted to banquet contexts in India.

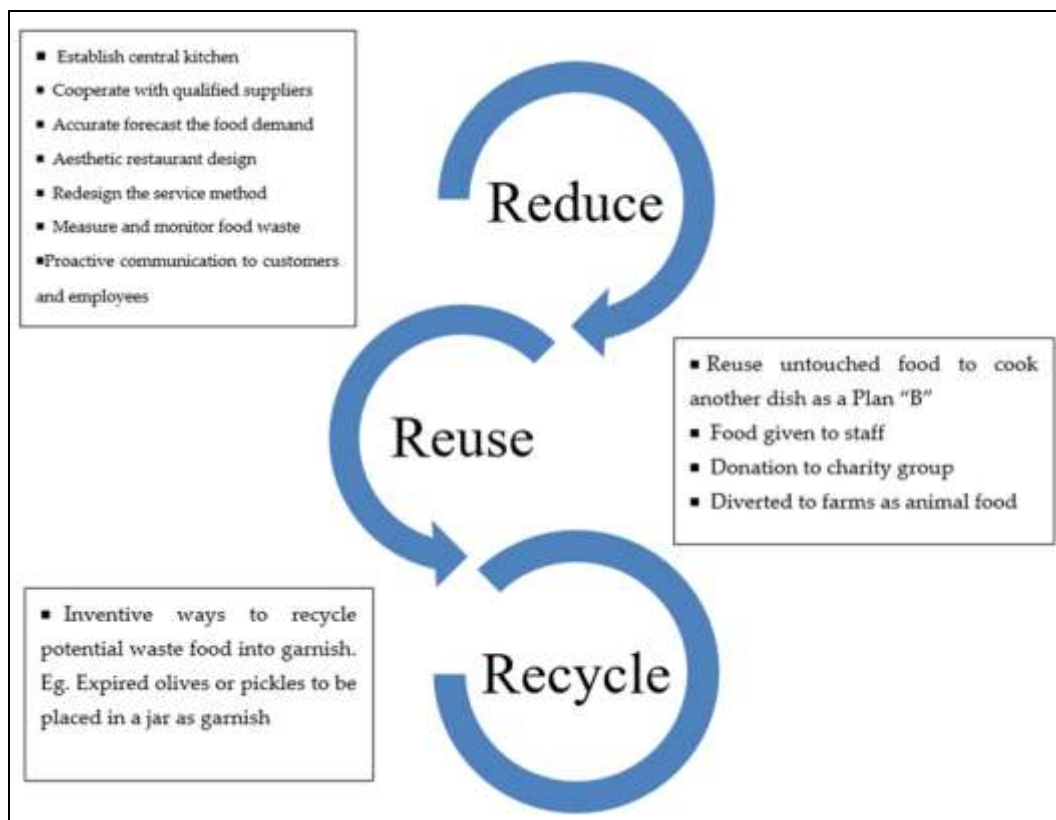


Fig 2: Strategies of hierarchy mitigation food waste in buffet restaurants

Strategic Recommendations

- Adopt the Hotel Waste Measurement Methodology (Sustainable Hospitality Alliance, 2021) to standardize reporting.
- Integrate menu engineering and ingredient rotation to reduce overproduction.
- Enhance guest awareness campaigns to shift consumption behavior.

- Align with the food waste hierarchy to prioritize prevention and redistribution before recycling.

Conclusion

This study shows that food waste in hotel banquets is shaped by two main forces: operational practices such as overproduction, and guest behaviors like plate overloading in buffets. These themes echo global hospitality research,

confirming that the challenge is widespread rather than local.

At the same time, the literature points to clear pathways forward. Menu engineering, ingredient rotation, and structured waste measurement frameworks offer practical ways to reduce waste while maintaining guest satisfaction. The food waste hierarchy provides a guiding principle, reminding hotels to prioritize prevention and redistribution. In essence, reducing banquet food waste is not only about efficiency but also about responsibility. By aligning local practices with global benchmarks, hotels can strengthen sustainability while preserving the quality of guest experience.

References

1. Derqui B, Filimonau V. Organizational commitment to food waste reduction in hotels. *Int J Hosp Manag.* 2021;94:102815. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0278431920303674>
2. Dhir A, Talwar S, Kaur P, Malibari A. Food waste in hospitality and food services: A systematic literature review and framework development approach. *J Clean Prod.* 2020;258:122861. Available from: <https://www.sciencedirect.com/science/article/pii/S0959652620329061>
3. Filimonau V, Delysia A. Food waste management in hospitality operations: A critical review. *Tour Manag.* 2019;71:234–245. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0261517718302528>
4. Mensah I. Sustainable practices in hotel operations: A Ghanaian perspective. *Int J Hosp Manag.* 2019;76:85–94. Available from: <https://www.proquest.com/docview/2923449498>
5. Papargyropoulou E, Lozano R, Steinberger JK, Wright N, bin Ujang Z. The food waste hierarchy as a framework for the management of food surplus and waste. *J Clean Prod.* 2014;76:106–115. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0959652614003680>
6. Reynolds C, *et al.* Review of food waste prevention in the hospitality sector. *J Clean Prod.* 2020;258:120137. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0959652620301840>
7. Vukolić D, Gajić T, Cabral Ó, Veljović S, Knežević S. Revolutionizing the hospitality industry: The impact of AI technologies on efficient food management and reduction of food waste. *J Tour Futures.* 2025. Available from: <https://www.emerald.com/jtf/article/doi/10.1108/JTF-02-2025-0033>
8. Tomaszewska M, Bilaska B, Tul Krzyszczyk A, Kołozyn Krajewska D. Estimation of the scale of food waste in hotel food services—A case study. *Sustainability.* 2021;13(1):421. Available from: <https://www.mdpi.com/2071-1050/13/1/421>