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Food Waste Management in the Hospitality Industry: A Qualitative Exploration of Sustainable Business Practices at Alila Ubud

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ABSTRACT

This study explores Food Waste Management (FWM) practices within the hospitality industry, focusing on Alila Ubud as a luxury boutique eco-resort in Bali. The growing tourism sector has escalated food waste generation, necessitating sustainable management strategies to optimize operational efficiency and environmental outcomes. The research aims to analyze FWM practices, identify challenges in their implementation, and examine their contribution to Sustainable Business Practices (SBP). A qualitative case study approach was employed under a constructivist paradigm, using purposive sampling to select key informants, including executive chefs, operational managers, and food and beverage staff. Data were collected through participatory observation, in-depth interviews, and documentation, and analyzed using thematic analysis combined with triangulation to ensure validity. The findings indicate that Alila Ubud implements FWM through prevention, reduction, reuse, recycling and valorization, and disposal stages, forming a structured operational system. However, challenges persist in staff behavioral consistency, continuous training requirements, and reliance on third-party waste treatment. The study demonstrates that FWM contributes to SBP across environmental, economic, and social dimensions, while the integration of Tri Hita Karana values reinforces a holistic approach linking operational practices, managerial strategies, and local cultural ethics. Recommendations include formalizing standard operating procedures (SOPs), recording waste volumes, and continuous capacity building to strengthen FWM as a core sustainability strategy.

INTRODUCTION

Tourism plays an important role in Bali's economy. The growth in tourist numbers directly drives an increase in the capacity of hotels, restaurants, and various culinary facilities. Alongside these developments, various studies show that the increase in tourism activity is directly proportional to an increase in the volume of food waste, particularly in the hospitality sector (Pearson et al., 2025). Food waste is not only understood as residual consumption, but also reflects inefficiencies in the food production and consumption system. Such inefficiency results in the wastage of resources, increased operational costs, and pressure on the environmental sustainability of tourist destinations (Ally et al., 2024; Blanco-Moreno et al., 2025). The United Nations Environment Programme (2021) emphasizes that the hospitality sector is one of the most significant contributors to food waste globally, giving hotel managers a strategic role in efforts to reduce food waste.

At the operational level, hotel kitchens are one of the main sources of food waste, with a proportion that can reach 30–40% of total processed foodstuffs. Studies have identified

overproduction, menu planning errors, and uncertainty in guest consumption behavior as the dominant factors contributing to food waste. Research consistently confirms that the effectiveness of food waste management is strongly influenced by the quality of planning, organizational culture, and staff compliance with operational procedures. These findings suggest that the issue of Food Waste Management (FWM) demands a more comprehensive approach — one that does not rely solely on procedures or technology, but also considers workplace culture and staff compliance in carrying out daily operational practices in hotel kitchens (Filimonau & Uddin, 2021; Kasavan et al., 2022).

The challenge of FWM in the hotel industry is also closely related to service standards that emphasize abundance, particularly in buffet services. Research consistently finds that buffet service contributes to high levels of plate waste. Nevertheless, various studies have shown that relatively simple managerial interventions — such as changes in buffet design and portion control — can significantly reduce food waste. Hotel leadership also plays an important role in driving changes in employee behavior. Transformational leadership with an environmental orientation, supported by internal education and training, has been shown to foster staff awareness and behavior in support of FWM implementation. These findings affirm the urgency of adopting a strategic and participatory managerial approach to FWM (Dolnicar et al., 2020; Luu, 2020; Okumus, 2020).

At the macro level, waste management challenges in Bali are growing increasingly complex as tourist arrivals increase year on year. Food waste in Bali is a consequence of high tourism activity that generates large volumes of organic waste, while the capacity and effectiveness of destination-level waste management systems remain limited. Research shows that high levels of culinary activity in tourist areas contribute significantly to increased organic waste generation. The imbalance between the capacity of final disposal sites (TPA) and the volume of waste produced gives rise to various environmental problems, such as pollution and aesthetic degradation, which have the potential to reduce environmental quality and damage Bali's image as a leading tourist destination. A number of studies confirm that inadequate waste management can degrade the tourist experience and harm a destination's reputation in the long run (Jones et al., 2014; Widyarsana et al., 2020).

In the context of these macro-level challenges, implementing FWM at the source level is an increasingly urgent strategic approach. As one of the main producers of food waste in tourist areas, hotels have an important role in reducing waste generation at the operational stage. At the micro level, Alila Ubud is known as a hotel that has made sustainability a core part of its business identity through various environmental programs, energy efficiency initiatives, and the use of local foodstuffs. However, food service activities such as buffet breakfasts, à la carte services, and banquets still carry a high potential for generating food waste. Initial findings at Alila Ubud indicate that FWM implementation — particularly in relation to food waste sorting at the operational level — has not been running optimally, resulting in organic waste being mixed with other types of waste. This condition is consistent with previous research findings, which suggest that weak FWM implementation is often associated with organizational culture, limitations in staff training, and operational flow designs that have not consistently supported sustainable practices (Antonschmidt & Lund-Durlacher, 2021; Cardenas et al., 2024; Kim et al., 2019; Papargyropoulou et al., 2019).

Although the contribution of a single hotel to total waste generation in Bali is relatively small in quantitative terms, FWM implementation at the micro level plays a strategic role in addressing waste challenges at the macro scale. FWM best practices at the hotel level serve as a demonstration model, showing that food waste reduction can be achieved without compromising service quality or business performance (Antwi et al., 2025). Through the replication and adoption of such practices by more players in the hospitality industry, the cumulative impact has the potential to be significant in reducing food waste generation at the destination level.

From a theoretical perspective, most studies emphasize that effective FWM requires a systematic and integrated approach. Green Restaurant Theory highlights the importance of resource efficiency, portion control, sustainable menu planning, and waste segregation as part of environmentally responsible operational practices. Meanwhile, the Food Waste Hierarchy framework consistently prioritizes prevention before reuse or waste treatment. Both frameworks provide a conceptual foundation for hotels in designing more structured and sustainable FWM strategies (Papargyropoulou et al., 2014; Schubert et al., 2010).

Efforts to implement FWM are also aligned with sustainable development goals, particularly SDG 12.3, which targets a 50% reduction in food waste by 2030. Research shows that hotels implementing FWM systematically are able to improve operational efficiency, strengthen their reputation, and support long-term business sustainability. However, the effectiveness of FWM implementation is highly dependent on management commitment, the quality of staff training, and an organizational culture that consistently upholds sustainability values (Kim & Hall, 2020; Kularatne et al., 2019; Langgat et al., 2023).

Most research on food waste in hotels continues to focus on urban hotels or all-inclusive hotels in developed countries, with studies on boutique eco-resorts remaining very limited. Resorts have distinct operational characteristics — such as the use of fresh local ingredients, varying occupancy levels, and proximity to nature — that require a more in-depth research approach. Qualitative research is therefore appropriate for understanding how staff interpret waste management policies, how strategies are implemented, and how operational challenges manifest in daily practice. This approach is well suited to uncovering dynamics that are not visible through quantitative data, such as perceptions, values, commitment, and interactions among staff.

Research on FWM at Alila Ubud is important in providing a comprehensive understanding of the processes, challenges, and practices applied. The selection of Alila Ubud as the research site was based on several academic and practical considerations. Alila Ubud is a resort that consistently expresses its commitment to sustainability through various environmental programs, the use of local foodstuffs, and resource efficiency efforts. However, this commitment has not been fully reflected in food waste management practices at the operational level, as evidenced by the suboptimal waste sorting and processing systems in the kitchen. This gap between policies, perceptions, and field practices presents an interesting subject of inquiry well suited to a qualitative approach.

Alila Ubud also has unique characteristics as a luxury boutique eco-resort operating within Ubud's natural and cultural landscape, making the dynamics of its waste management distinct from those of urban hotels or large chain hotels. The uniqueness of this context provides an opportunity to explore how sustainability values are understood, negotiated, and

applied by practitioners in a location that relies heavily on ecological integrity as a central part of its appeal. Thus, Alila Ubud is considered a relevant, strategic, and representative site for examining food waste management within the framework of sustainable business practices in the hospitality industry. This research is also expected to contribute to the development of more effective waste management models for hotels in Bali and to strengthen the implementation of sustainable business practices across the hospitality industry.

Although Alila Ubud has demonstrated a commitment to sustainability through various environmental policies and programs, there are indications of a gap between policies formulated at the managerial level and practices implemented at the operational level. FWM implementation in the field still shows a dependence on individual staff awareness and has not been fully standardized within a consistent and measurable work system.

From an economic perspective, food waste not only carries environmental consequences but also causes significant financial losses for the hospitality industry (Nand et al., 2025). The wastage of raw materials directly contributes to increased food costs, ultimately affecting the operational efficiency and profitability of hotels. This underscores that food waste management is not merely an environmental issue, but also an important component of a sustainable business strategy (Lévesque et al., 2024).

Therefore, this study is important in examining more deeply how FWM implementation at Alila Ubud functions not only as an operational practice, but also as part of a strategy supporting Sustainable Business Practices (SBP), while identifying gaps between policies and field-level practices. Based on this background, this research focuses on FWM practices in Food and Beverage operations at Alila Ubud Hotel, the obstacles and challenges faced in their implementation, and their contribution to SBP. The study aims to analyze FWM practices, identify implementation challenges, and examine their contribution to the hotel's business sustainability. This research is also expected to provide theoretical benefits through the development of studies on FWM and SBP in the hospitality industry, particularly in the context of luxury boutique eco-resorts in Bali. Practically, it is expected to provide strategic recommendations for the management of Alila Ubud and the broader hospitality industry regarding more effective, efficient, and sustainable food waste management. In addition, this research is expected to benefit academic institutions by enriching scholarly references, supporting curriculum development, encouraging advanced research, and strengthening academic contributions to addressing real-world challenges in the sustainable tourism and hospitality sector.

METHOD

Types of Research

This research uses a constructivist paradigm with a qualitative approach and a descriptive-analytical case study method. The constructivist paradigm was chosen because the research focuses on understanding the meaning, experience, and social interactions that occur in food waste management practices in the hotel environment. A qualitative approach is used to explore the phenomenon in depth and contextually, especially related to the implementation of Food Waste Management (FWM) as part of Sustainable Business Practices (SBP) in Alila Ubud. The case study method allows the researcher to explore in detail the practice of food waste management in one specific unit of analysis, namely Alila Ubud as a hotel based on

sustainable hospitality. This research does not aim to generalize the population, but rather to understand the real conditions, challenges, and strategies of food waste management based on experience and operational practices in the field.

Population and Sample

The population in this study includes all parties involved in the operation and management of food waste in Alila Ubud, especially in departments related to Food Waste Management (FWM). The research uses purposive sampling or purposive criteria, which is the selection of informants based on their level of involvement, experience, and knowledge of food waste management practices and hotel sustainability. The research informants include the Executive Chef as a key informant, operational managers, Food and Beverage staff, Housekeeping, waste management or stewarding officers, and local community parties involved in waste management if needed. The number of informants is not determined precisely from the beginning, but develops according to the needs of the research until data saturation or data saturation, which is a condition when additional interviews no longer produce new information and only show the repetition of the same theme or pattern.

Data Collection Techniques

The data collection techniques in this study were carried out through participatory observation, in-depth interviews, and documentation. Participatory observation was carried out by directly observing the food waste management process in kitchens, restaurants, and hotel disposal areas to understand operational practices contextually. In this process, the researcher plays the role of an observer-as-participant, which is involved in a limited way without interfering with hotel activities. In addition, in-depth interviews were conducted in a semi-structured manner using interview guidelines with open-ended questions prepared based on Green Restaurant Theory and the concept of Sustainable Business Practices (SBP). The interview aims to explore information about policies, practices, challenges, and informants' views related to food waste management in Alila Ubud. Documentation techniques are also used by collecting supporting documents such as internal hotel reports, activity photos, standard operating procedures (SOPs), waste management records, and other sustainability documents to strengthen the data from observations and interviews.

Data Analysis Techniques

The data analysis technique in this study uses a thematic analysis approach to identify, analyze, and interpret patterns of meaning that emerge from qualitative data. The analysis process is carried out continuously from the data collection stage to the drawing of conclusions. The analysis stage refers to Braun and Clarke's concept, namely data familiarization, initial code preparation, theme search, theme review, theme naming, and research report preparation. In addition, the analysis also follows the Miles and Huberman stages which include data reduction, data presentation, as well as drawing conclusions and verification. Data reduction is carried out by selecting and grouping relevant data according to the focus of the research, while the presentation of data is carried out in the form of descriptive narratives and thematic matrices to facilitate the interpretation of the relationship between concepts. The validity of the data is maintained through source triangulation, triangulation techniques, and member checking to ensure the consistency, validity, and credibility of research results.

RESULTS AND DISCUSSION

Food Waste Management (FWM) Practice in Alila Ubud

Food Waste Management (FWM) is a series of activities that include the prevention, reduction, reuse, processing, and final disposal of food waste in a safe and sustainable manner (Dhir et al., 2020). In this study, the analysis of Food Waste Management (FWM) practices in Alila Ubud refers to the Food Waste Hierarchy framework proposed by Papargyropoulou et al., (2014), which consists of the stages of prevention, reduction, reuse, and recycling/valorisation, and ends with disposal as the last option. Based on the results of interviews, observations, and documentation, the practice of Food Waste Management (FWM) at Alila Ubud shows that waste management efforts are carried out in stages from upstream to downstream.

1. Prevention

Based on the results of the interview, the practice of food waste management (FWM) at Alila Ubud shows that the prevention approach has become an integral part of the kitchen operational process. Prevention is carried out from the production planning stage, where the amount of food produced is adjusted to the occupancy rate of guests. As the informant put it: "Every food production is adjusted to the occupancy rate of guests in hotels." (Informant 1)

This statement shows that production planning practices have taken into account the actual level of demand, thus being able to prevent overproduction. The researchers identified that this practice is included in the prevention strategy in the Food Waste Hierarchy, because waste is controlled from the early stages of production. The results of this study are in line with research (Filimonau et al., 2019) which emphasizes that demand-based planning is the main strategy in reducing food waste in the hospitality sector.

The statement shows that waste management is not seen as the final process, but rather has been integrated from the initial stage of operation. The results of this study are in line with the concept of Food Waste Management (FWM) which is defined as a series of activities that include prevention to sustainable food waste processing (Dhir et al., 2020). In the perspective of the Food Waste Hierarchy, the practice reflects the application of prevention principles as a top priority in food waste management (Papargyropoulou et al., 2014). This approach emphasizes that the most effective efforts in waste management are to prevent the formation of waste from the early stages of operation, through accurate planning and production control (Ciccullo et al., 2018; Reynolds et al., 2016).

In addition, the lack of mass production for the à la carte menu reinforces this approach. As the informant revealed: "For à la carte food we do not mass-produce, always adjust to the number of guests." (Informant 1)

The results of this study show that there is a growing practical awareness in the kitchen work environment, where food production is no longer driven by the assumption of availability, but by actual needs. The researcher sees that the prevention practices at Alila Ubud are not only the implementation of operational policies, but also reflect the internalization of efficiency values that have become part of the kitchen work culture. The demand-driven production approach applied is also supported by research (Filimonau et al., 2019), which states that production control is a key factor in reducing food waste in the hospitality sector. Prevention practices are carried out through direct supervision by the

kitchen management. This can be seen from the briefing carried out by the Executive Chef regarding waste management, as seen in Figure 1.

Figure 1. Implementation of the Prevention Stage through Kitchen Operational Coordination in Alila Ubud

2. Reduction

In terms of reduction, the results of the study show that Alila Ubud has implemented various efforts to minimize the amount of food waste generated during the kitchen operational process. Waste reduction is carried out through portion control, menu planning, and efficient use of raw materials at each stage of production. As the informant revealed: We control the portions of food so that they are not excessive and adapt to the needs of the guests." (Informant 1)

The results of this study are in line with the research of Ciccullo et al., (2018) and Reynolds et al., (2016) which stated that the reduction of food waste can be achieved through operational efficiency, including portion control and optimization of the use of ingredients in the production process. In addition, reduction efforts are also carried out through more optimal management of raw materials, where each part of foodstuffs is tried to be used optimally to avoid waste. This shows that waste reduction is not only done in the final stage, but has become part of the overall operational process of the kitchen.

From a theoretical perspective, this practice is in line with the concept of the Food Waste Hierarchy which places reduction as an important strategy after the prevention stage in an effort to minimize the generation of food waste (Papargyropoulou et al., 2014). This approach emphasizes that in addition to preventing waste formation, waste volume reduction can also be done through efficiency in the use of materials and control of the production process (Ciccullo et al., 2018; Reynolds et al., 2016)

In the context of Food Waste Management (FWM), waste reduction is part of systematic efforts to optimize the use of resources and reduce waste in food service operations (Dhir et al., 2020). Practices such as portion control and needs-based menu planning show that Alila Ubud has integrated the principles of efficiency in kitchen management.

3. Reuse

In terms of reuse, the results of the study show that Alila Ubud applies a selective approach, especially in considering food quality and safety. Processed foods, especially those containing protein, are not reused. As the informant revealed: "For processed foods, especially proteins, they are not reused." (Informant 1)

This shows that there are limitations in the application of the reuse principle, which in the theory of the Food Waste Hierarchy should be maximized before the waste enters the

processing stage (Papargyropoulou et al., 2014). However, in the operational context of star hotels, quality standards and food safety are the main factors limiting the practice. These findings are in line with research by Dhir et al. (2020) who stated that the implementation of Food Waste Management (FWM) in the food industry must still consider aspects of food quality and safety. Nevertheless, reuse is still carried out on raw materials that are still suitable for use. As the informant revealed: "Vegetables that are still viable can be reused, and the rest of the pieces are used for stock." (Informant 1)

This statement shows that materials that are still suitable for reuse are used in the next production process. This practice reflects a reuse strategy, in which the life cycle of food is extended before it becomes waste (Ikponmwosa Aiguobarueghian et al., 2024). The researchers argue that this practice not only improves the efficiency of raw material use, but also demonstrates operational awareness of sustainability principles. In addition, the remaining pieces of material are used as basic materials for making stock, which shows the practice of optimizing resources at the operational level. The application of reuse in Alila Ubud reflects the negotiation between theoretical ideals and practical reality (Aiguobarueghian et al., 2024). Although theoretically reuse can be maximized, in practice there are limitations determined by quality standards, hotel image, and guest expectations. This shows that the implementation of the Food Waste Hierarchy is contextual and cannot be applied rigidly.

4. Pengolahan (Recycling/Valorisation)

At the waste treatment stage, Alila Ubud has shown the existence of a structured system through the practice of waste sorting based on certain categories. As the informant put it: "Waste is separated into organic, plastic, paper, bottles & cans." (Informant 1)

This practice is strengthened by the existence of a composting facility used to process organic waste. As the informant revealed: "We have 3 composter wells." (Informant 1)

The results of the observation also show that waste sorting facilities have been provided systematically, with containers separated by category and equipped with labels, making it easier for staff to sort waste according to their type. This reinforces the evidence that hotels have provided supporting facilities in the implementation of Food Waste Management (FWM), especially at the recycling stage presented in Figure 2.

Figure 2. Implementation of Waste Sorting System as Part of Food Waste Management (FWM) in Alila Ubud

To strengthen these findings, this study is also supported by secondary data in the form of waste collection logs for the period April 2026 presented in Appendix 1. The data shows that the total recorded food waste reaches around 5,486 kg, with most of the waste managed through the composting process of 5,056 kg, and no waste is directly disposed of to landfill. The results of this study show that organic waste treatment has been carried out optimally through an approach oriented towards resource reuse.

In addition, the data also shows that there is other waste management, such as 250.5 kg of used cooking oil, which is utilized in collaboration with external parties. This indicates that the Food Waste Management (FWM) practice at Alila Ubud has not only focused on segregation, but has led to a broader resource recovery system. The results of this study, in a theoretical perspective, show that hotels have implemented the recycling/valorisation stage in the Food Waste Hierarchy, where waste is not seen as the end of the cycle, but rather as a resource that still has a useful value (Diaz-Farina et al., 2023). But what is interesting is the involvement of all staff in the waste sorting process. As the informant put it: "All teams are involved in waste sorting." (Informant 1)

This statement shows that waste sorting practices are not only technical, but also involve the collective participation of the entire staff. This indicates that the success of the recycling stage is determined not only by the availability of facilities, but also by the involvement of individuals in the organization. This shows that waste management is not only supported by the system, but also by collective participation. The application of this processing (recycling/valorisation) is important because the sustainability of a practice is not only determined by the availability of facilities, but also by the extent to which the practice is internalized by the individuals who run it. The results of the study are in line with the research of Dhir et al. (2020) which affirmed that the success of the implementation of Food Waste Management is greatly influenced by the behavior and involvement of individuals in the organization. The practice of waste sorting is not only seen from the available system, but also from the direct involvement of staff in the waste management process which is a key factor in ensuring the effectiveness of food waste management practices (Islam et al., 2023).

Sorting waste by category as part of Food Waste Management (FWM) in Alila Ubud shows that there is a more specific classification of waste, such as metal, cardboard, paper, and other types. In addition, it can be seen the activities of staff who directly separate waste according to predetermined categories, so that it reflects the existence of a structured waste management system. Thus, this strengthens the evidence that the waste management system at Alila Ubud is not only available in terms of facilities, but has also been implemented in the form of clear operational procedures.

The direct activities of staff in sorting waste are carried out manually. It can be seen that the waste that is still mixed is resorted to ensure conformity to the predetermined category. This shows the active involvement of staff in the waste management process. Figure 5.4 shows that Food Waste Management (FWM) practices depend not only on systems and facilities, but also on staff participation and awareness in their implementation.

Figure 3. Waste Sorting Process by Staff as Part of the Implementation of Food Waste Management in Alila Ubud

5. Final Disposal

At the disposal stage, the results of the study show that food waste that cannot be reused or further processed is managed through cooperation with external parties. As the informant revealed: "Waste that can no longer be treated will be taken by outsiders such as Manah Liang and the ROLE Foundation." (Informant 1)

The statement shows that waste management in the final stage is not entirely done internally, but involves third parties as part of a broader waste management system, namely Manah Liang and the ROLE Foundation. In addition, waste management at this stage also involves other external parties according to the type of waste. B3 Waste (Hazardous and Toxic Materials) is managed in collaboration with PT. Bhakti Bumi Berseri, Meanwhile, waste in the form of used cooking oil is collected and distributed through collaboration with the Green Lengis Foundation as part of the environmental sustainability program presented in Figure 4 and Figure 5.

Figure 4. B3 Waste Collection by PT. Bhakti Bumi Berseri as Part of Hazardous Waste Management in Alila Ubud

Figure 5. Collection of Used Cooking Oil by the Green Palm Oil Foundation as Part of the Sustainability-Based Waste Management Program

In a theoretical perspective, the disposal stage is the last stage in the Food Waste Hierarchy, which is carried out when waste no longer has the potential to be used or reprocessed (Papargyropoulou et al., 2014). Therefore, this stage should be the last option after all previous stages, such as prevention, reduction, reuse, and recycling/valorisation, have been carried out optimally. This practice is also in line with the concept of Food Waste Management (FWM) which emphasizes the importance of comprehensive waste management to the final stage to minimize environmental impact (Dhir et al., 2020). The involvement of

external parties in waste management demonstrates the hotel's efforts to ensure that the waste generated remains managed responsibly through an integrated system.

Challenges and Obstacles in the Implementation of Food Waste Management (FWM) in Alila Ubud

The results of the study show that the main challenges and obstacles in the practice of Food Waste Management (FWM) in Alila Ubud do not lie in the technical aspects or the availability of facilities, but in the human dimension related to individual behavior and awareness in carrying out waste management practices. As the informant put it: "The biggest obstacle is how to remind all staff to dispose of garbage in its place." (Informant 1)

The statement indicates that although the waste management system has been well designed, its implementation still depends heavily on the consistency of staff behavior in carrying out established procedures. The results of this study are in line with the research of Dhir et al., (2020) who stated that behavioral factors and individual awareness are one of the main obstacles in the successful implementation of Food Waste Management in the hospitality sector. From the perspective of the researcher, this shows that the success of Food Waste Management (FWM) is not only determined by policies and systems, but also by the degree of internalization of values and work culture within the organization.

In addition, labor dynamics are also a factor that affects the sustainability of Food Waste Management (FWM) practices. The high turnover rate requires a continuous and systematic training process to ensure that all employees have a consistent understanding and compliance with established waste management practices. As the informant put it: "We have to continue to do training because the staff changes frequently." (Informant 1)

The researcher identified that high staff turnover is the main challenge in maintaining the consistency of the implementation of Food Waste Management (FWM). This condition shows that the sustainability of practice is highly dependent on the process of internalizing value, not just the available systems. High turnover has the potential to hinder the process of internalizing sustainability values, so waste management practices tend to be technical and have not fully become an organizational culture. The results of this study are in line with the research of Filimonau et al., (2019) and Otoo et al., (2025) which stated that the successful implementation of Food Waste Management (FWM) in the hospitality sector is greatly influenced by the level of employee awareness, knowledge, and competence, which is generally formed through continuous training. Workforce instability, such as high staff turnover, can be an obstacle to maintaining consistency in implementing these practices and slowing down the process of building a sustainability-oriented work culture.

This condition shows that the practice of Food Waste Management (FWM) requires an education process that is not one-off, but must be carried out continuously to maintain consistency of implementation in the field. This is in line with the research of Filimonau et al., (2019) which emphasizes that training and staff awareness improvement are key factors in reducing food waste in the hospitality industry. On the other hand, there were no obstacles in terms of facilities or management support. As expressed by the informant: "There are no facilities constraints, because the management is already supportive." (Informant 1)

The results of this study show that structurally, Alila Ubud already has an adequate system and support in the implementation of Food Waste Management (FWM). However, if

analyzed further, there are indications that there are external challenges that indirectly affect the effectiveness of the implementation of Food Waste Management (FWM), especially related to dependence on external parties in waste management in the final stages

The challenges in the implementation of Food Waste Management (FWM) in Alila Ubud are not only internal, but also external, namely related to the sustainability of cooperation with third parties in waste management. This is in line with the research of Ciccullo et al., (2018) who stated that the success of sustainability practices in the operational chain is greatly influenced by the integration between the organization's internal systems and the external networks that support them. Thus, the challenges in implementing Food Waste Management (FWM) at Alila Ubud are multidimensional, including internal aspects in the form of work behavior and culture, as well as external aspects in the form of relationships with waste management systems outside the organization. These findings reinforce that the success of Food Waste Management (FWM) is not only determined by the hotel's internal factors, but also by the support of a broader sustainability system within the hospitality industry.

Applied Research Output

Based on the results of the research that has been conducted, a finding is obtained that is not only descriptive, but can also be developed into an applied research output. This output is formulated as a form of research contribution in providing practical solutions to the problems studied, especially in food waste management in the hospitality sector. Based on the results of the study, it shows that the practice of Food Waste Management (FWM) in Alila Ubud has been running through the stages of prevention, reduction, reuse, recycling/valorisation, and disposal (Papargyropoulou et al., 2014). However, the implementation is still operational and has not been fully integrated into a systematic and structured management model (Dhir et al., 2020; Ciccullo et al., 2021).

In the perspective of Sustainable Business Practices (SBP), food waste management not only functions as a technical activity, but also as part of a sustainability strategy that includes environmental, economic, and social dimensions. This is in line with the concept of the Triple Bottom Line which emphasizes the importance of balance between the three dimensions in business activities (Elkington, 1997). Therefore, the practice of Food Waste Management needs to be positioned not only as an operational activity, but also as part of the organization's strategy in achieving sustainability. Further, research shows that the effectiveness of food waste management is strongly influenced by the integration between operational systems and organizational behavior, including staff involvement in its implementation (Reynolds et al., 2016)

In the local context of Bali, Tri Hita Karana values are an important foundation in supporting the implementation of sustainability. This value emphasizes the balance between human relations with the environment (Palemahan), humans with others (Pawongan), and humans with God (Parahyangan). The integration of Tri Hita Karana values is in line with the research results of Wiryanata et al., (2025) providing a more holistic dimension in food waste management, so that it is not only oriented to technical aspects, but also reflects social and ethical values in sustainability practices.

Food Waste Management (FWM) and Sustainable Business Practice (SBP) Integration Model Based on Tri Hita Karana

The Food Waste Management (FWM) model produced in this study not only describes the waste management flow in a linear manner, but also shows the existence of cross-functional interaction between departments in hotel operations. This is important because food waste management is not only the responsibility of one work unit, but is the result of the coordination of various interrelated functions.

Conceptually, the resulting model illustrates the relationship between Food Waste Management (FWM) and Sustainable Business Practices (SBP) based on Tri Hita Karana. This model was compiled based on the results of interviews, observations, and analysis of practices applied at Alila Ubud. This model shows that Food Waste Management (FWM) practices are not only influenced by technical factors, such as production planning and waste sorting systems, but also by managerial factors and organizational values underlying sustainability practices (Luu, 2020). This model was developed in the framework of input–process–output as the basis for strategic decision-making. Input components in this model include management policy, occupancy-level production-based planning, as well as staff awareness enhancement through training.

Furthermore, at the process stage, the practice of Food Waste Management (FWM) follows the Food Waste Hierarchy stage, namely prevention, reduction, reuse, recycling/valorisation, and disposal which is carried out in stages and systematically. The outputs resulting from this process include reduced food waste volume, operational cost efficiency, and increased staff awareness and participation, which directly contribute to the achievement of Sustainable Business Practices (SBP). At the output stage, the model shows the impacts produced, both operationally and strategically, which include reduced food waste volume, operational cost efficiency, and increased staff awareness and participation. In addition, the output of the model also includes improving the image of hotels as entities that implement sustainability practices (green image), which is an added value in the hospitality industry.

This model is enriched with a cross-functional perspective, which shows that each stage in Food Waste Management (FWM) involves the role of different but interconnected work units. The purchasing department plays a role in the efficient procurement of raw materials, thus affecting the potential for waste generation from the beginning (Kattiyapornpong et al., 2023). The kitchen department (chef) is responsible for menu planning and production control related to the prevention and reduction stages. Furthermore, the stewarding department plays a role in the waste sorting and management process, while the gardening department plays a role in the treatment of organic waste through composting and reuse of processed products as part of the hotel's ecological system (Wu & Teng, 2022). An integration model between cross-functional and circular food system Food Waste Management (FWM) practices in the perspective of Tri Hita Karana in Alila Ubud, is presented in Figure 5.9.

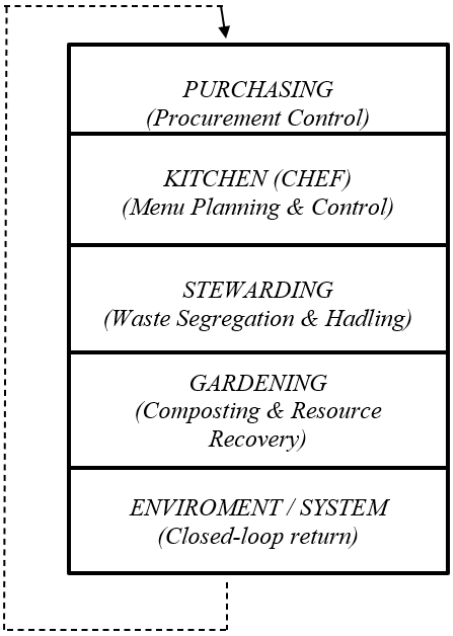

Figure 6. Food Waste Management (FWM) Integration Model Based on Cross-Functional and Circular Food System in Alila Ubud

Through the interaction between these departments, a circular food system is formed, where the output of one process becomes an input for another. This pattern suggests that food waste management does not stop at the disposal stage, but continues at the reuse process that supports resource efficiency and environmental sustainability (Cardenas et al., 2024).

This model is also strengthened by the integration of Tri Hita Karana values, which provide a philosophical foundation in the implementation of sustainability. In the Palemahan dimension, food waste management reflects efforts to preserve the environment. In the Pawongan dimension, staff involvement shows a collective awareness in maintaining the work environment. Meanwhile, in the Parahyangan dimension, sustainability practices can be interpreted as a form of moral responsibility in maintaining a balance in life. Thus, the resulting model is not only technical, but also reflects a holistic approach that integrates operational, managerial and local cultural values.

The model produced in this study is not only descriptive, but also strategic because it is able to describe the relationship between inputs, processes, and outputs in an integrated system framework. This model shows that the practice of Food Waste Management (FWM) in Alila Ubud has led to the establishment of a circular-based waste management system that supports Sustainable Business Practices (SBP).

CONCLUSION

Based on the results of the analysis and discussion carried out, it can be concluded that Food Waste Management (FWM) practices at Alila Ubud have been implemented through the stages of prevention, reduction, reuse, processing, and final disposal, reflecting a fairly structured waste management system at the operational level. However, implementation still faces various challenges, particularly in non-structural aspects such as consistency of staff behavior, the need for continuous training, and the absence of a quantitative waste measurement system. In addition to internal factors, challenges also arise from external

aspects, including limitations of the waste management system at the destination level and dependence on third parties in the waste treatment process, indicating that the effectiveness of FWM is influenced not only by the hotel's internal system but also by the broader waste management ecosystem. FWM practices at Alila Ubud have also contributed to Sustainable Business Practices (SBP) across economic, environmental, and social dimensions, although these contributions remain largely operational and have not yet been fully integrated into a comprehensive business strategy.

Therefore, it is recommended that Alila Ubud management develop a more structured FWM system through the formulation of standard operating procedures (SOPs), periodic recording of food waste volumes, and the setting of waste reduction targets as part of the hotel's sustainability strategy. In addition, continuous staff capacity building through ongoing training is needed to embed waste management practices as a consistent workplace culture. Local government is also expected to support the implementation of green hotel practices through incentive policies such as tax relief, green hotel certification, and technical assistance for waste management. For academics and researchers, it is recommended to develop studies employing quantitative or mixed-methods approaches to measure food waste volumes and analyze their economic impact more rigorously, as well as to develop integration models between FWM and SBP in other hospitality industry contexts.

REFERENCE

Ally, B., Abdulkadir, A., Remmen, A., Hirsbak, S., Mwevura, H., Furu, P., & Salukele, F. (2024). Food Waste Management at Selected Tourist Hotels in Zanzibar: Current Practices and Challenges in Creating a Circular Economy in the Hospitality Sector. Sustainability, 16(24), 10850. https://doi.org/10.3390/su162410850

Antwi, C. O., Darko, A. P., Zhang, J., Asamoah, K. O., Affum-Osei, E., & Ren, J. (2025). Enhancing the sustainability of food waste management practices in emerging economies' hospitality industry through SECA multi-criteria group decision-making. International Journal of Hospitality Management, 130, 104233. https://doi.org/10.1016/j.ijhm.2025.104233

Blanco-Moreno, S., Aydemir-Dev, M., Santos, C. R., & Bayram-Arlı, N. (2025). Emerging sustainability themes in the hospitality sector: A bibliometric analysis. European Research on Management and Business Economics, 31(1), 100272. https://doi.org/10.1016/j.iedeen.2025.100272

Cardenas, M., Schivinski, B., & Brennan, L. (2024). Circular practices in the hospitality sector regarding food waste. Journal of Cleaner Production, 472, 143452. https://doi.org/10.1016/J.JCLEPRO.2024.143452

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

Diaz-Farina, E., Díaz-Hernández, J. J., & Padrón-Fumero, N. (2023). Analysis of hospitality waste generation: Impacts of services and mitigation strategies. Annals of Tourism Research Empirical Insights, 4(1), 100083. https://doi.org/10.1016/j.annale.2022.100083

Filimonau, V., & Uddin, R. (2021). Food waste management in chain-affiliated and independent consumers' places: A preliminary and exploratory study. Journal of Cleaner Production, 319, 128721. https://doi.org/10.1016/j.jclepro.2021.128721

Ikponmwosa Aiguobarueghian, Uwaga Monica Adanma, Emmanuel Olurotimi Ogunbiyi, & Nko Okina Solomon. (2024). Waste management and circular economy: A review of sustainable practices and economic benefits. World Journal of Advanced Research and Reviews, 22(2), 1708–1719. https://doi.org/10.30574/wjarr.2024.22.2.1517

Islam, J. U., Nazir, O., & Rahman, Z. (2023). Sustainably engaging employees in food wastage reduction: A conscious capitalism perspective. Journal of Cleaner Production, 389, 136091. https://doi.org/10.1016/j.jclepro.2023.136091

Kattiyapornpong, U., Ditta-Apichai, M., & Chuntamara, C. (2023). Sustainable Food Waste Management Practices: Perspectives from Five-Star Hotels in Thailand. Sustainability, 15(13), 10213. https://doi.org/10.3390/su151310213

Kim, M. J., & Hall, C. M. (2020). Can sustainable restaurant practices enhance customer loyalty? The roles of value theory and environmental concerns. Journal of Hospitality and Tourism Management, 43, 127–138. https://doi.org/10.1016/j.jhtm.2020.03.004

Langgat, J., Ramdani, B., Pavic, S., & Tok, E. (2023). Environmentally Sustainable Practices and Hotel Performance: Evidence from Malaysia. Sustainability, 15(6), 5289. https://doi.org/10.3390/su15065289

Lévesque, J., Godin, L., Perreault, V., & Mikhaylin, S. (2024). Identifying the factors affecting the implementation of food waste reduction strategies in independent restaurants: Moving towards eco-efficiency. Journal of Cleaner Production, 440, 140765. https://doi.org/10.1016/j.jclepro.2024.140765

Luu, T. T. (2020). Reducing food waste behavior among hospitality employees through communication: dual mediation paths. International Journal of Contemporary Hospitality Management, 32(5), 1881–1904. https://doi.org/10.1108/IJCHM-09-2019-0779

Nand, A. A., Bhattacharya, A., Prajogo, D., Sohal, A., & de Vass, T. (2025). Understanding food waste in the hospitality industry: A social practice theory approach. International Journal of Hospitality Management, 130, 104232. https://doi.org/10.1016/j.ijhm.2025.104232

Otoo, S., Boakye, M., & Hinson, M. (2025). Assessing Factors for Food Waste Management Practice Among Budget Hotels in Cape Coast Metropolis. Science Journal of Business and Management, 13(4), 228–235. https://doi.org/10.11648/j.sjbm.20251304.11

Pearson, N., Davies, I., Nuttall, P., & Yalabik, B. (2025). Influencing others to prevent hospitality food waste: The reception of food waste messages by hospitality employees. International Journal of Hospitality Management, 126, 104042. https://doi.org/10.1016/j.ijhm.2024.104042

United Nations Environment Programme. (2021). Food waste Index Report 2021. United Nations Environment Programme. https://www.unep.org

Wiryanata, I. G. N. A., Susanti, C., Sumariati, D. A. R., & Septiviari, A. A. I. M. (2025). Implementation of Sustainability Business Practices Based on Tri Hita Karana Values in International Chain Hotels in Bali. Jurnal Ekonomi Kreatif Dan Manajemen Bisnis Digital, 4(1), 82–95. https://doi.org/10.55047/jekombital.v4i1.982

Wu, C.-M. E., & Teng, C.-C. (2022). Reducing Food Waste in Buffet Restaurants: A Corporate Management Approach. Foods, 12(1), 162. https://doi.org/10.3390/foods12010162