



Food Waste Management at Burger King Helsinki: A Quick Service Restaurant

Ritu Banjade

2025 Laurea



Laurea University of Applied Sciences

Food Waste Management at Burger King Helsinki: A Quick Service Restaurant

Ritu Banjade
Hospitality Management and Service
Design
Bachelor's Thesis
November, 2025

Laurea University of Applied Sciences
 Hospitality Management and Service Design
 Bachelor's degree thesis

Abstract

Ritu Banjade

Food Waste Management at Burger King Helsinki: A Quick Service Restaurant

Year	2025	Number of pages	51
------	------	-----------------	----

The aim of this thesis was to examine food waste management at Burger King Aleksanterinkatu and to identify the stages in daily operations where food waste was created. The purpose of the thesis was to develop practical and realistic improvement suggestions that helped the restaurant reduce food waste within its existing operational environment and strengthen daily routines. The commissioner, Burger King Aleksanterinkatu, was a quick-service restaurant operating in a high-traffic urban environment where fast production and large customer volumes increased the risk of food waste.

The theoretical framework covered food waste in general and in quick service restaurants, food waste management, sustainability approaches, circular economic principles and the food waste hierarchy. It also discussed operational and behavioral factors that influenced waste in fast-paced restaurant settings.

A qualitative approach was used as the research methodology. The research methods were semi-structured interviews and a food journey map. The interviews with the restaurant manager and a kitchen staff member explored daily routines, challenges and waste-related practices. The food journey map was based on on-site observation and interviews, and it documented the full movement of food from procurement to disposal. Together, the methods provided a clear view of where and why waste occurred.

The study identified key waste points, including overordering, weak stock rotation, short shelf-life ingredients and overproduction during busy hours. Based on the findings, a Food Waste Management Improvement Framework was developed. The result recommendation included improvements in ordering, preparation levels, shift communication and waste-tracking routines.

The commissioner considered the results useful for strengthening daily practices and supporting more consistent waste management. The recommendations offered simple, low-cost actions that could improve efficiency, reduce waste and support sustainable operations.

Keywords: food waste, quick service restaurant, waste reduction, food journey map

Contents

1	Introduction	5
2	Case Company: Burger King Aleksanterinkatu.....	6
3	Theory Framework	7
3.1	Food Waste.....	7
3.1.1	Global and European Context.....	7
3.1.2	Impacts of Food Waste.....	8
3.2	Food Waste in Restaurants and Quick Service Restaurants (QSRs)	9
3.3	Theoretical Approaches to Food Waste Management	11
3.3.1	Food Recovery Hierarchy	12
3.3.2	Circular Economy Principles	13
3.3.3	Theory of Planned Behavior and Sustainable Food Systems	14
3.4	Strategies and Best Practices in Food Waste Management.....	14
3.5	Policy and Regulatory Context	16
3.6	Key Challenges and Theoretical Gaps	17
4	Research and Development of Food Waste Management	18
4.1	Theory of Research Method I: Interview	19
4.1.1	Implementation of the Interview.....	20
4.1.2	Results of the Interview	22
4.2	Theory of Research Method II: Food Journey Map	27
4.2.1	Implementation Plan	28
4.2.2	Results of the Food Journey Map.....	29
4.3	Improving Food Waste Management	33
4.3.1	Operational Improvements	34
4.3.2	Behavioral and Staff-Related Improvements	36
4.3.3	System and Monitoring Improvements.....	37
4.3.4	Development Output	38
4.3.5	Recommendations	39
5	Conclusion.....	41
	References.....	43
	Figures	47
	Tables	47
	Appendices	48

1 Introduction

Food waste is a serious global problem with environmental, economic, and social impacts. The UNEP Food Waste Index Report 2024 estimates that the world wasted about 1.05 billion tons of food in 2022, which equals around 19 percent of all food available to consumers across households, food services, and retail. In the European Union, food waste reached 58.2 million tons in 2023, which is about 130 kilograms per person (European Commission 2025). The food service sector, including Quick Service Restaurants (QSRs) like Burger King, plays a key role in this issue because high customer volumes and fast service increase the risk of waste. In Finland, the food service sector produces about 13% of the country's total food waste, roughly 7 million kilograms per year (European Commission 2025). Most of this waste comes from overproduction, mistakes during preparation, limited holding times, and uneaten food. Reducing waste requires systematic tracking, staff awareness, and clear management practices.

This thesis focuses on food waste at Burger King Aleksanterinkatu in Helsinki. The aim is to understand how waste occurs, how it is currently managed, and to suggest practical ways to reduce it. The purpose is to provide clear solutions that can be applied in daily operations, making waste management more effective and consistent.

The theoretical framework combines research on food waste in the food service sector with key theories and models. These include circular economy, sustainability, the food waste hierarchy, and other food waste management approaches. The study also reviews previous research on food waste in restaurants, with a focus on cases relevant to Burger King and other QSRs.

A qualitative approach is used, combining staff interviews and a food journey mapping method. Interviews give insights into staff experiences and attitudes toward food waste. The food journey map, adapted from service design methods, follows the path of food from ordering to consumption and disposal, showing where and how waste occurs.

The thesis is organized into five chapters. The first chapter introduces the study, and second chapter introduces the case restaurant. The third chapter reviews literature on food waste and reduction methods. The fourth chapter explains the research design, methods and its implementation, results and practical recommendations to improve waste management in the branch. The final chapter gives conclusions and outlines how the results can inform future practices and further research. In this study AI program, ChatGPT, is used for rephrasing and checking grammar and language.

2 Case Company: Burger King Aleksanterinkatu

Burger King is one of the largest quick service restaurant chains in the world. It operates at more than 19,000 restaurants across over 100 countries (Burger King Company LLC 2023). The chain is known for a standardized menu, fast preparation times, and a franchise model that allows local operators to adapt to regional needs. Its core business relies on speed, consistency, and affordability (Burger King Company LLC 2023).

Burger King has been present in Finland since 2013 and the chain currently has more than 60 restaurants across the country (Hopkins 2024). The brand has expanded into major cities, with outlets concentrated in Helsinki and other urban centers (Hopkins 2024). Restaurants in Finland follow the global business model, with some menu adjustments to reflect local preferences (Hopkins 2024). High volumes of customers during peak hours, such as lunch and weekends, create both revenue and challenges for managing food preparation and waste.

The Burger King Aleksanterinkatu branch is located in central Helsinki. It serves a large and diverse customer base, including office workers, students, tourists, and families. The restaurant operates daily with high traffic, especially during lunch and evening periods. Menu offerings include burgers, fries, chicken products, salads, and beverages. Orders are prepared rapidly, often in batches, to maintain service speed during busy hours. This production style increases the risk of unsold items and leftover ingredients.

Food waste in this branch comes from several sources. Kitchen waste includes expired ingredients, cooking errors, and overproduction during peak times. Customer waste came from unfinished meals and discarded side items. Inventory waste arises when products exceed their shelf life before being sold. The restaurant tracks some of this waste through internal reporting systems, but detailed monitoring is limited (Manager 2025). Staff practice and time pressure influence how much food is prepared, stored, and discarded (Staff member 2025).

This branch provides a practical setting for studying food waste management in quick service restaurants. Its high traffic, standardized processes, and diverse customer base reflect common challenges in the sector. At the same time, its central location and visibility make food waste reduction an opportunity to strengthen both operations and brand responsibility.

3 Theory Framework

This chapter presents the theoretical framework for understanding food waste management in quick service restaurants. It defines key concepts, identifies main causes of food waste, and reviews existing theories and models that explain how waste is created and how it can be reduced. The discussion focuses on frameworks such as the circular economy, sustainability theory, food waste hierarchy, and behavioral approaches to food waste. The purpose is to build a solid theoretical foundation that supports the analysis of food waste at Burger King Aleksanterinkatu and guides the development of effective management practices.

3.1 Food Waste

Food waste encompasses edible food that is discarded at the retail or consumer level, that is, food intended for human consumption that ends up unused after retail or with the consumer (UNEP 2024). It is distinct from food loss, which occurs earlier in the supply chain (for example during harvesting, post-harvest handling, processing, or transportation) and concerns decreases in quantity or quality before retail (Chauhan, Dhir, Akram & Salo 2021). The lack of standardized definitions for "food loss" and "food waste" has led to inconsistent data collection and reporting, complicating efforts to formulate effective policies and interventions aimed at reducing these issues (Delgado 2023).

Food waste can arise for many reasons. These include over-production, aesthetic rejection of edible items (for example produce not meeting appearance standards), expiration date misinterpretation, consumer behavior such as over-purchasing, and institutional decisions such as discarding surplus food at restaurants or retailers (Aschemann-Witzel, de Hooge, Amani, Bech-Larsen & Oostindjer 2015). From a broader perspective, food waste is a multi-dimensional concept involving logistical, behavioral, cultural and organizational elements. Addressing food waste thus requires changes not just in operations, but in attitudes, consumer habits, corporate practices, and policy frameworks (Thyberg & Tonjes 2016).

3.1.1 Global and European Context

Worldwide, food waste represents a major inefficiency in food systems and a significant sustainability challenge. The United Nations Environment Program (UNEP) estimates that around 1.05 billion tons of food were wasted at consumer, retail and food-service levels globally in 2022 representing about 19 % of the total food available to consumers. Of that, households accounted for approximately 60 %, food service operations 28 %, and retail 12 % (UNEP 2024). In the European Union, each person wastes roughly 130 kg of food annually, amounting to over 58 million tons across the EU per year (Eurostat 2024). In the food service sector specifically, one Finnish study found that about 20 % of all food handled in service

operations was wasted, with buffet style operations and overproduction being major drivers (Silvennoinen et al. 2015).

This global and regional context highlights not only the scale of food waste but also the variation in the points in the supply chain where it occurs, signaling different kinds of interventions. The contrast between surplus where food is produced but not needed and scarcity where hunger persists calls attention to inequities and inefficiencies in global food systems.

3.1.2 Impacts of Food Waste

Food waste has profound environmental consequences. Wasted food also means wasted resources: water, land, energy and fertilizer inputs used in production are lost. For instance, producing one kilogram of beef may require nearly 15 000 liters of water, and if that food is discarded the environmental cost remains (FAO 2013). Decomposing food in landfills also emits methane, a greenhouse gas with significantly greater warming potential than carbon dioxide; food waste is estimated to contribute around 8-10 % of global GHG emissions (UNEP, 2024). Loss of biodiversity, deforestation, and land-use change are indirectly driven by land being used to grow food that ultimately is not consumed (Gustavsson, Cederberg, Sonesson, Van Otterdijk & Meybeck 2011). Similarly, the social dimension of food waste is striking while large volumes of food are wasted, over 730 million people worldwide remain undernourished (FAO 2019). This paradox raises issues of equity and access in food systems. Food waste undermines efforts to ensure affordable, nutritious food for all and limits food security options, especially in vulnerable communities. Redirecting surplus edible food via redistribution initiatives has been shown to contribute to social welfare and reduce waste simultaneously (Silvennoinen et al. 2015). Behavior and culture also play a role: consumer purchasing habits, lack of meal-planning, plate-waste in hospitality, and institutional practices affect how much food is thrown away (Koivupuro et al. 2012).

From an economic standpoint, food waste represents significant monetary loss. Globally, losses and waste of food have been valued at hundreds of billions of USD annually when considering production, processing, transport and disposal costs (Lins, Zandonadi, Raposo & Ginani 2021). In Europe, prior estimates placed annual economic losses from food waste at around €143 billion (FUSIONS 2016). For food service operations, waste arises from overproduction, held inventory, unsold food and inefficient meal planning; such inefficiencies raise operational costs, reduce profitability and increase waste-management burdens (Gonçalves, C., Saraiva, S., Nunes, F., & Saraiva, C. 2023). The business case for reducing food waste is strong: cost savings, efficiency improvements, improved customer satisfaction and environmental reputation all become possible when waste is reduced (Gonçalves, C., Saraiva, S., Nunes, F., & Saraiva, C. 2023).

3.2 Food Waste in Restaurants and Quick Service Restaurants (QSRs)

Restaurants, including QSRs, create food waste because of their operations: speedy services, pre-set portion sizes, preparation, setting up for immediate sales, and expectations placed on customers to give feedback or make their preferences on time (Drewitt 2013). In comparison with fine dining or any made-to-order setting, QSRs depend more on batch preparation, fixed menu, and time limit for delivery, which increases the chances of overproduction and spoilage (Drewitt 2013). Silvennoinen et al. (2015) explain that restaurant waste can be classified into three categories: kitchen waste, serving waste, and customer waste. As presented in figure 1, kitchen waste is the waste generated in the kitchen, including preparation leftovers and spoiled products, serving waste refers to food prepared but not served, and food left on plates is customer waste.



Figure 1: Food waste categories (Silvennoinen et al. 2015).

Waste generation and its composition in the restaurant sector are largely impacted by the type of restaurant, such as buffet restaurants generating more food waste than à la carte restaurants mainly because of the self-service nature of buffets, which leads to service waste and overproduction (Silvennoinen et al. 2015). According to Table 1, Silvennoinen, Nisonen, and Pietiläinen (2020) did a study comparing many studies and found the likelihood that food waste caused from overproduction and buffets, which falls under serving waste being usually much larger than waste caused from kitchen and customer waste. In addition, the study indicates that in non-buffet restaurants, customer waste accounts for the majority of food waste.

Table 1: Comparison of proportions of different types of food waste in multiple studies (Silvennoinen et al. 2020, 148).

Study	Food Waste %	Kitchen Waste %	Serving Waste %	Customer Waste %
Betz et al. 2015	7,69	0,9	2,9	1,9
Silvennoinen et al. 2015	16,9 - 28	1,5 - 6,4	3,7 - 17,2	4,4 - 9,5
Eriksson et al. 2017	23	0,7	14,7	7,6
Silvennoinen et al. 2017	17,5	2,2	11,4	3,9

A study carried by Filimonau, Lemmer & Matute (2020) suggested that operational factors such as poor forecasting, over-purchasing, and inefficient inventory systems contributed largely to food waste. A situation that has a direct effect on waste generation is poor communication between the kitchen and service teams; a team might overproduce foodstuff, while another underutilizes ingredients. Training, alongside attitude, is an issue: some foodservice workers might be oblivious to the fact that their day-to-day activities actually contribute to food waste, and many consider waste as part of the job that is simply inevitable (Sakaguchi, Pak, & Potts 2018).

In Finland, the food service sector is the third highest contributor to the food waste in the country, after households and the industrial sector. According to data from Luonnonvarakeskus (Natural Resources Institute Finland) 2014, the sector generates nearly 12% of all food waste, with restaurants producing as much as 85 million kilos per year (Katajajuuri et al. 2012). Buffet restaurants and large chain establishments are the biggest contributors to food waste equally due to overproduction and the unpredictability of customers (Katajajuuri et al. 2012).

The Distribution of Food Waste Across the Food Chain in Finland

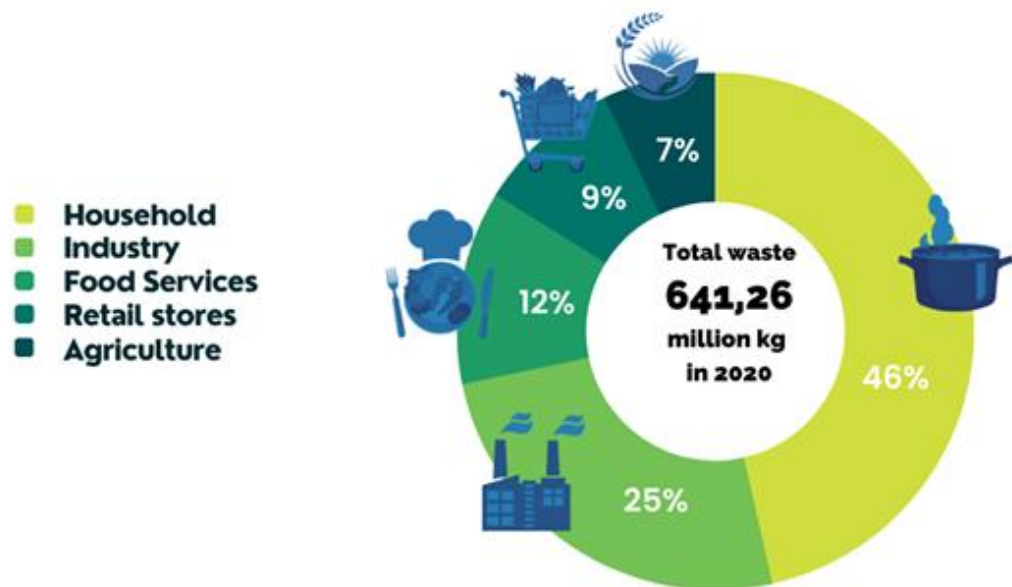


Figure 2: The distribution of food waste throughout the food chain. (Kuluttajaliitto 2021; European Commission 2023).

Figure 2 presents a visual description of the distribution of food waste in the food chain in Finland in 2020. As per Figure 2, the largest share of food waste in Finland occurs in households with about 46% of the total food waste generation. Second largest is food waste generation in the industry, with 25% of the total food waste. Third comes food service with 12%. Remaining food waste is produced by retail (9%) and agriculture (7%).

3.3 Theoretical Approaches to Food Waste Management

The management of food waste extends beyond practical measures in kitchens or restaurants; it is underpinned by several theoretical frameworks that help explain how waste can be reduced, prevented, or managed more sustainably. These theories provide a foundation for designing strategies, policies, and interventions in the food service sector. By understanding these approaches, stakeholders can develop more effective and contextually appropriate solutions to address food waste challenges.

3.3.1 Food Recovery Hierarchy

The Food Recovery Hierarchy is a common framework for managing food waste. It was first developed in the United States and later used in Europe (U.S. Environmental Protection Agency 2023). The hierarchy shows which actions are best for the environment and society and it is shaped like an upside-down pyramid, with the best options at the top and the least preferred at the bottom (European Commission 2025). At the top is source reduction, which means stopping food waste before it starts through better planning and inventory control (U.S. Environmental Protection Agency 2023). Next are redistribution and donation, where extra edible food is given to people in need and then comes animal feed and industrial uses, which turn food that people cannot eat into feed or bio-based products (U.S. Environmental Protection Agency 2023). Composting and recycling come next, turning food waste into useful materials like compost or energy. At the bottom are landfills and incineration, which have the worst environmental impact (U.S. Environmental Protection Agency 2023). The hierarchy shows that preventing and reusing food is always better than throwing it away, making it a practical guide for restaurants and other food businesses (U.S. Environmental Protection Agency 2017).

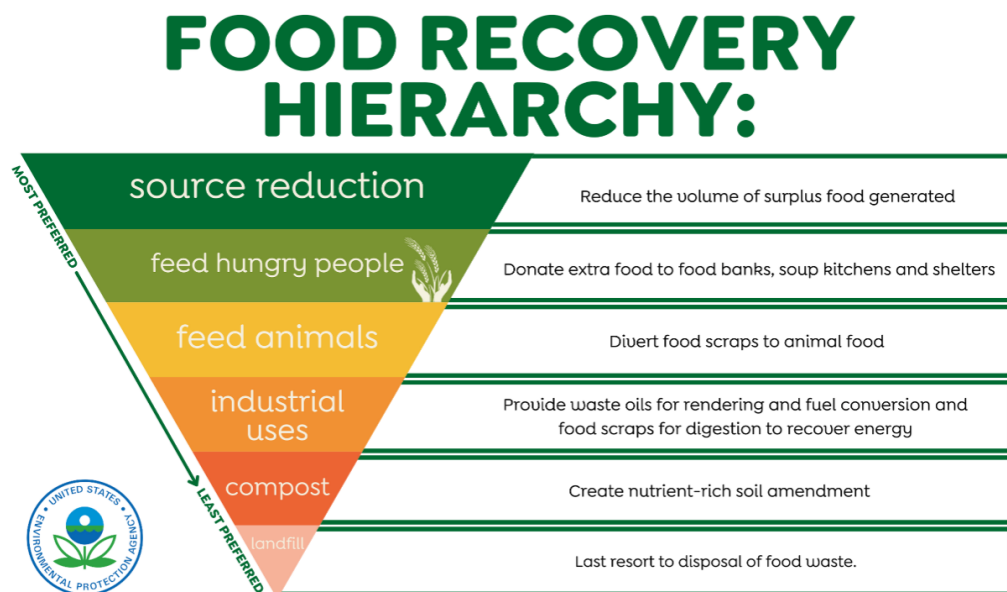


Figure 3: Food Recovery Hierarchy (United States Environmental Protection Agency 2023).

In figure 3, the Food Recovery Hierarchy shows the preferred order for managing food waste from most to least effective. At the top is source reduction, which means preventing waste before it happens through better planning and inventory control. Next are redistribution and donation, where surplus but safe food is given to people in need. Animal feed and industrial uses come after, turning inedible food into feed or bio-based materials. Composting and recycling recover nutrients and energy from unavoidable waste. At the bottom are landfill

and incineration, the least preferred options due to resource loss and emissions. The hierarchy highlights that prevention and reuse bring the greatest environmental and social benefits.

3.3.2 Circular Economy Principles

The circular economy (CE) focuses on using resources efficiently and reducing waste in organizations (Ellen MacArthur Foundation 2019). It is a system that aims to cut down on resource use, emissions, and energy loss by keeping materials in use for longer and recycling them (Ellen MacArthur Foundation 2019; FAO 2018). In food systems, the circular economy replaces the traditional ‘take-make-dispose’ model with a cycle where resources are reused and regenerated (Ellen MacArthur Foundation 2019). In food waste management, this means creating menus, supply chains, and business models that prevent waste, reuse surplus food, and recover value from what cannot be used (Fatorachian, Kazemi & Pawar 2025). Examples include composting, biogas production, and food waste-to-energy programs. For restaurants and food services, circular economic thinking means changing operations to reduce overproduction, reuse what is possible, and turn food waste into useful resources instead of treating it as trash (Ellen MacArthur Foundation 2019).

From a Linear Food Economy

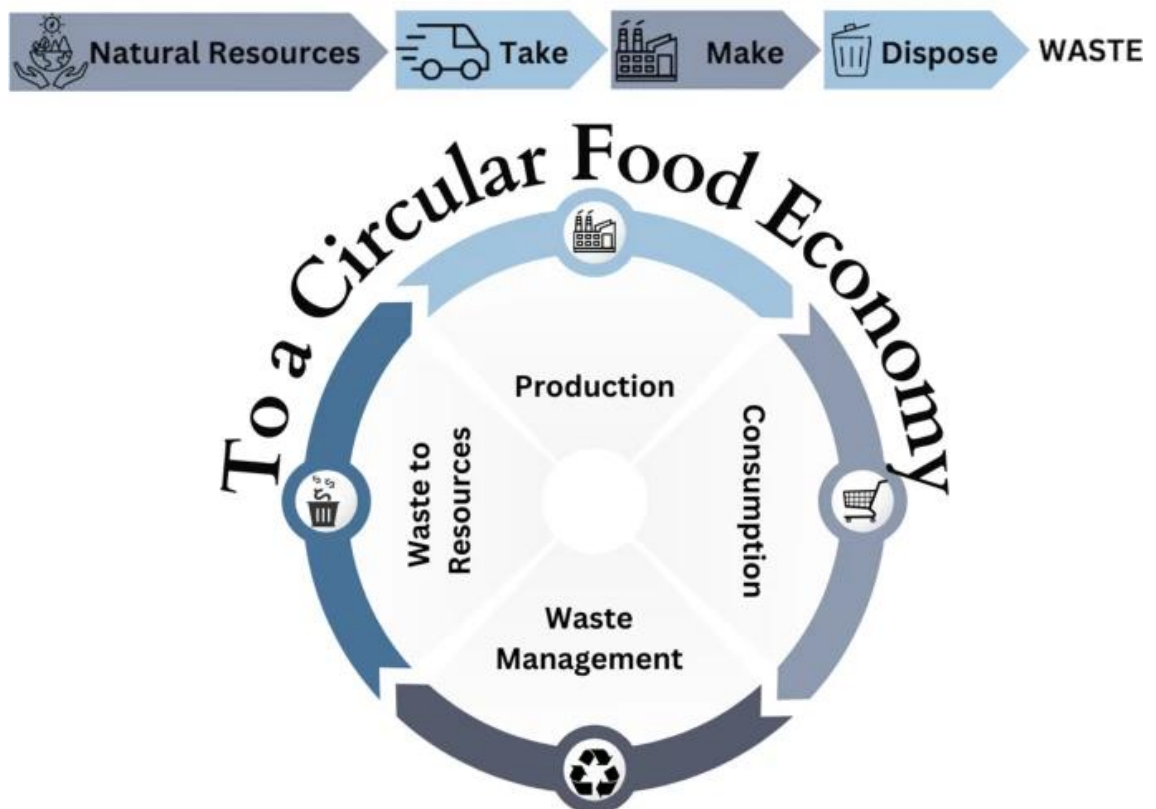


Figure 4: Circular Economy Systems Diagram (Alzaabi, Chia, & Show 2024).

Figure 4 illustrates the shift from a linear food economy to a circular food economy. In the linear model, resources follow a one-way flow, natural resources are taken, used to make products, consumed, and then discarded as waste. This process leads to continuous resource depletion and environmental impact. The circular food economy model redefines this process by keeping materials in use for as long as possible. It connects production, consumption, waste management, and waste-to-resources in a closed loop. Instead of disposal, food waste is recovered through reuse, recycling, or conversion into new resources, such as compost or bioenergy. This system minimizes waste, conserves resources, and supports sustainable production and consumption within the food sector.

3.3.3 Theory of Planned Behavior and Sustainable Food Systems

Food waste is influenced by human behavior, especially in the food service sector where staff and customer decisions create waste (Aschemann-Witzel et al. 2015). The Theory of Planned Behavior explains how attitudes, social norms and perceived behavioral control guide people's actions (Ajzen 1991). Attitudes mean that when staff or customers see food waste as a serious issue, they are more likely to try to reduce it (Graham-Rowe, Jessop & Sparks 2014). Subjective norms mean that when reducing waste is part of the restaurant culture, employees feel social pressure to follow sustainable practices (Chawla & Sharma 2022). Perceived behavioral control means that when staff receive training, tools and clear instructions, they are more likely to avoid waste (Blešić, Kilibarda & Milošević 2021). The theory is widely used to explain food waste behaviors and can be applied to employee actions in restaurants (Blešić, Kilibarda & Milošević 2021).

A sustainable food system is one that delivers food security and nutrition without compromising environmental, social or economic foundations (Food and Agriculture Organization 2018). Food waste reduction is a core element of sustainable food systems because it directly affects resource efficiency, emissions and food availability (FAO 2013; UNEP 2024). The theory promotes a systems approach considering the entire food chain from production to consumption and emphasizes prevention over treatment (Food and Agriculture Organization 2018; C40 Knowledge Hub 2025). Integrating sustainability thinking helps organizations align their food waste actions with broader goals such as climate mitigation and resource conservation (UNEP 2024; European Commission 2025).

3.4 Strategies and Best Practices in Food Waste Management

Reducing food waste in the food service sector requires a combination of operational improvements, social initiatives, and technological innovation. Effective strategies not only reduce the environmental impact of food waste but also improve cost efficiency and support

community welfare. Drawing from academic research, industry reports, and case studies, several key approaches have been identified as particularly effective for restaurants and catering operations.

Proper inventory management and portion control are critical for minimizing food waste at the source. Using the First-In, First-Out (FIFO) method ensures that older products are used before newer stock, reducing the likelihood of spoilage and expiration (Over Easy Office 2024). Real-time inventory tracking systems allow restaurants to monitor stock levels continuously, anticipate demand, and adjust orders accordingly, which helps prevent over-purchasing and unnecessary waste (Leanpath 2025). Additionally, consistent portioning using scales or serving guides ensures that food is served in manageable amounts, reducing plate waste while maintaining customer satisfaction (Sakaguchi, Pak & Potts 2018). Regular staff training in inventory handling and portioning further strengthens these practices, helping teams identify trends and adjust operations proactively (Renfors, Nurkka & Koivupuro 2024).

Redistributing surplus food is an effective way to prevent edible food from being discarded while addressing food insecurity in the community and partnerships with local food banks, shelters, and charities allow restaurants to donate unsold but safe food, extending their useful life (Food Bank Network 2024). Digital platforms and mobile applications can streamline this process by connecting donors with recipients, improving coordination and reducing logistical barriers (ReFED 2023). Businesses that adopt structured donation programs often see benefits beyond waste reduction, including enhanced corporate social responsibility and stronger community ties (ReFED 2023). Ensuring compliance with local food safety regulations is crucial, as it protects recipients while encouraging wider participation from other food service providers (European Commission 2025).

When prevention and donation are not feasible, composting, recycling, and energy recovery offer sustainable options for handling unavoidable food waste (EPA 2025). Composting transforms organic waste into nutrient-rich soil, which can support local agriculture or landscaping projects (EPA 2025). Anaerobic digestion can convert food scraps into biogas, generating renewable energy and reducing greenhouse gas emissions compared to landfilling (C40 Knowledge Hub 2025). Implementing these recovery methods not only divert waste from landfills but also integrates restaurants into broader circular economy systems. Many cities and municipalities now provide infrastructure and incentives to support these practices, making them increasingly practical for food service operations of all sizes.

Technological solutions are increasingly central to modern food waste management. Digital inventory systems provide real-time data on stock levels, helping staff make informed purchasing and production decisions to minimize overproduction (Over Easy Office 2024). Advanced data analytics tools can identify patterns of waste, revealing inefficiencies in menu

design, portion sizes, or preparation methods, and allowing management to adjust operations accordingly (Fatorachian, Kazemi & Pawar 2025). Additionally, technology supports food redistribution by connecting donors to recipients efficiently, ensuring that surplus food reaches those in need in a timely manner. By combining operational data with digital coordination tools, restaurants can achieve measurable reductions in waste while maintaining service quality.

3.5 Policy and Regulatory Context

Addressing food waste requires a robust policy framework that encompasses international commitments, regional regulations, and national strategies. The European Union (EU) and Finland have developed comprehensive policies to mitigate food waste, aligning with global sustainability goals. These policies not only aim to reduce environmental impacts but also promote social equity and economic efficiency.

The EU has established a multi-faceted approach to combat food waste, integrating legislative measures, strategic frameworks, and collaborative platforms. Central to this effort is the EU Platform on Food Losses and Food Waste (FLW), created in 2016 to facilitate cooperation among EU institutions, member states, and stakeholders across the food supply chain. The platform's objectives include defining food waste metrics, sharing best practices, and evaluating progress over time (United Nations 2025). In 2023, the European Commission proposed legislation to set legally binding food waste reduction targets for member states, aiming for a 10% reduction in food manufacturing and processing and a 30% per capita reduction in retail, restaurants, food services, and households by 2030 (Financial Times 2025).

Finland has been proactive in aligning with EU initiatives while tailoring strategies to its national context. The Finnish Ministry of Agriculture and Forestry has been actively involved in EU discussions on food waste reduction, contributing to the development of EU-wide policies (European Commission 2025). Nationally, Finland has implemented various programs focusing on food waste prevention, including public awareness campaigns, support for food redistribution networks, and incentives for businesses to adopt sustainable practices. These efforts are part of Finland's broader commitment to sustainable development and circular economy principles.

The EU and Finland's food waste policies are closely aligned with the United Nations' Sustainable Development Goal (SDG) 12, which aims to ensure sustainable consumption and production patterns. Specifically, Target 12.3 seeks to halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains by 2030 (United Nations 2025). Both the EU and Finland have integrated this target into their policy frameworks, setting clear objectives and timelines for achieving significant reductions in food waste.

At the EU level, the adoption of the Circular Economy Action Plan underscores the importance of food waste reduction as a priority area for action. This plan outlines measures to promote resource efficiency, including initiatives to reduce food waste across various sectors such as agriculture, manufacturing, and consumption (European Commission 2025). Finland's national policies reflect a similar commitment, with the country actively participating in EU-led initiatives and implementing domestic strategies that support SDG 12 (European Commission 2025). These include enhancing food waste measurement systems, promoting sustainable food practices, and fostering collaboration among stakeholders to achieve shared sustainability goals.

3.6 Key Challenges and Theoretical Gaps

Despite extensive research and policy initiatives, managing food waste in the food service sector continues to face significant challenges. These obstacles span operational, behavioral, and regulatory domains and reveal gaps in both practical interventions and theoretical understanding. Addressing these challenges is crucial for developing effective, sustainable strategies that reduce food waste while improving efficiency and social outcomes.

Operational inefficiencies are among the primary causes of food waste in restaurants and quick service restaurants (QSRs). Poor forecasting, overproduction, and ineffective inventory management often lead to excess food that cannot be used or donated (Filimonau, Lemmer & Matute 2020). Kitchen and service staff may lack awareness of waste volumes, and communication gaps between teams can exacerbate overproduction, resulting in unnecessary discard of ingredients or prepared meals (Sakaguchi, Pak & Potts 2018). Behavioral factors further complicate waste reduction. Employees may perceive some level of waste as inevitable or may prioritize speed and convenience over careful resource management, especially in high-pressure QSR environments (Graham-Rowe, Jessop & Sparks 2014). Similarly, customer behavior, such as over-ordering, leaving unfinished food, or demanding large portions, contributes significantly to plate waste. Studies indicate that even when operational systems are in place, without behavioral interventions such as staff training, awareness campaigns, and incentive programs food waste reduction remains limited (Chawla & Sharma 2022).

Policy frameworks at the EU and national levels provide guidance and targets for food waste reduction, yet translating these into effective action remains challenging. Legally binding targets, like those proposed under EU legislation, require consistent monitoring, reporting, and enforcement, which can be resource-intensive for businesses and regulators (European Commission 2023). In Finland, while national initiatives support redistribution and waste prevention, variations in local implementation, gaps in infrastructure, and differences in business capacity create inconsistencies in outcomes (Katajajuuri et al. 2012). Moreover, food

safety regulations, while essential, can sometimes act as barriers to redistribution, as businesses may fear liability for donated items. Integrating policy objectives with operational realities requires coordinated support, clear guidance, and incentives to encourage compliance without creating excessive administrative burden (UNEP 2024).

Despite growing research on food waste, several theoretical and empirical gaps remain. First, there is limited understanding of how organizational culture, employee attitudes, and customer behavior interact to influence waste generation in QSRs (Aschemann-Witzel et al. 2015). Existing frameworks often focus on technical or operational solutions while underestimating the complexity of behavioral and social dimensions. Second, there is a lack of standardized metrics and methodologies for measuring food waste, making cross-study comparisons difficult and limiting the generalizability of findings (Delgado 2023). Finally, there is insufficient research on the long-term effectiveness of interventions, particularly regarding the integration of circular economy principles, digital tools, and food recovery strategies in everyday restaurant operations (Ellen MacArthur Foundation 2019). Addressing these gaps is essential to develop comprehensive, evidence-based strategies that are both practical and theoretically grounded.

4 Research and Development of Food Waste Management

This chapter explains the research and development process used to analyze and improve food waste management at Burger King Aleksanterinkatu. The aim is to understand how waste occurs, how it is managed, and to suggest practical ways to reduce it. The purpose is to provide clear solutions that can be used in daily operations. The chapter also explains the methodological choices behind the study. Two qualitative methods were used: semi-structured interviews and food journey mapping. The journey mapping is based on direct observation of daily work, literatures and interviews. These show where waste appears and help explain the practical conditions that shape food handling in the restaurant.

The interviews with manager and staff provide insight into employee experiences, daily routines, and attitudes toward food waste, highlighting both challenges and opportunities for improvement. The food journey map visualizes, based on observation of daily operations, literatures and interviews, how food moves through different stages of restaurant operations, from ordering to disposal. It helps identify where waste occurs and why. The results of both methods are combined to form development ideas and concepts aimed at reducing waste and improving operational efficiency. The chapter presents the implementation process, main findings, and the practical outputs that serve as the foundation for recommendations in the next section.

4.1 Theory of Research Method I: Interview

The first research method used in this thesis is the semi-structured theme interview, which is a qualitative research method. Interviews are one of the most common ways to collect qualitative data because they allow the researcher to explore the views, experiences, and motivations of participants (Gill, Stewart, Treasure & Chadwick 2008). According to Eriksson and Kovalainen (2008), interviews are widely used across different research fields because they provide rich and detailed information directly from people involved in the studied environment.

The main advantage of conducting an interview is that it allows participants to explain their answers in depth, share personal experiences, and add comments in their own words (Mason 2022, 164). This makes the method especially suitable for understanding how people think and behave in their work context. Interviews are different from questionnaires because the researcher is not only collecting factual data but also trying to understand how participants describe and interpret their daily experiences (Mason 2022, 164).

The interview method was selected for this thesis because it offers an accurate and personal way to collect information about food handling and food waste at Burger King Aleksanterinkatu. It provides a direct way to capture how employees experience their tasks and how they view waste-related practices. Interviews are a reliable form of face-to-face communication that encourage open and honest responses (Adams & Lawrence 2019, 103). However, they can be time-consuming to conduct and may create some bias if the interviewer or interviewee is influenced by personal views or comfort levels. Semi-structured interviews were used to collect qualitative data. This approach gives the interviewer flexibility to ask additional or clarify questions if needed. It also allows unexpected ideas to emerge during the discussion. According to Adams and Lawrence (2019, 103-104), semi-structured interviews are effective when the researcher has prepared key themes in advance but still wants to give participants room to describe their experiences freely. This balance between structure and openness makes the method well-suited for studying real workplace conditions.

The questions used in semi-structured interviews are planned based on the research goal and main topics. A predefined framework helps keep the discussion focused while still leaving space for natural conversation. Semi-structured interviews aim to collect relevant answers to the main research question while giving interviewees the opportunity to express their thoughts in their own way (Puusa & Juuti 2020, 103). This method ensures that participants' voices and subjective experiences are included in the results.

In qualitative interviewing, it is important not to fix all questions beforehand. New directions or topics often arise during the interview, and the researcher must be ready to follow them

(Kananen 2015, 148). This flexibility allows the interview to uncover information that might not have been expected before the session. Conducting interviews can also be demanding. The interviewer must listen actively, maintain a natural flow of conversation, and avoid interrupting the interviewee. Recording the interview can help capture the discussion accurately, but not all participants may feel comfortable being recorded. In such cases, taking detailed notes during and immediately after the session is necessary to preserve important information (Mason 2022, 169). In research, interviews are often used alongside observation to understand both what people do and why they do it (Stickdorn, Hormess, Lawrence & Schneider 2018). In this thesis, interviews were used to explore employees' personal experiences and perceptions of food waste management. Two interviews were conducted: one with the restaurant manager and one with a kitchen staff member. The data collected through interviews support the overall goal of understanding daily operations at Burger King Aleksanterinkatu and identifying the factors that influence food handling and waste generation.

In summary, semi-structured interview is a suitable and effective method for this thesis. It allows open discussion, provides detailed insights, and helps connect observed behavior with personal explanations. This method complements the food journey by adding the human perspective behind the operational processes observed in the restaurant.

4.1.1 Implementation of the Interview

The semi-structured theme interview was chosen as a research method for this thesis to collect qualitative data and to gain a deeper understanding of food waste management at Burger King Aleksanterinkatu. The interviews were used to gather personal insights and experience from employees who work with food handling and daily operations. The aim was to identify how food waste occurs in practice, how it is managed during shifts and which internal procedures influence waste in the restaurant.

Two interviews were conducted: one with the restaurant manager and one with a kitchen staff member. The manager oversees daily operations, employee supervision and order management, which made their perspective important for understanding stock rotation, production levels and waste recording. A staff member was included to provide an operational view of food preparation and handling during daily work. Both participants were contacted personally at the restaurant and informed about the purpose of the study, the interview process and how the information would be used. The manager's interview was arranged during regular working hours and conducted on October 25, 2025, at Burger King Aleksanterinkatu. The staff interview was conducted on October 27, 2025, under similar conditions and in a private area of the restaurant.

The interview followed a semi-structured format, meaning that the main questions were prepared in advance, but the conversation was allowed to flow naturally. This approach gave the interviewee space to describe experiences freely while keeping the discussion focused on the research topic. The interview questions were based on the themes of the thesis and were designed to explore the following areas: the interviewees' background and role, the main sources of food waste, the types of food wasted most often, reasons for waste, handling and tracking systems and staff training and awareness.

The interview questions were organized under one main topic, Food Waste in Burger Operations, and included ten guiding questions. The complete set of interview questions is included in Appendix 2. These questions covered all stages of the restaurant process, from storage and cooking to service and disposal. The structure of the interview ensured that both operational and human factors contributing to waste were discussed.

The manager's interview was conducted face-to-face in the restaurant's office area and lasted approximately twenty-three minutes. The staff interview was conducted in a private area of the restaurant and lasted eighteen minutes. Both interviews were recorded with permission to ensure accuracy. Notes were taken during this session to capture key points. The recording helped ensure that all responses were captured accurately and could later be transcribed and analyzed. The atmosphere of the restaurant was familiar to the interviewees, which supported an open and honest conversation. Before the interview began, the interviewer explained the purpose of the study and confirmed the confidentiality of the discussion. The manager and staff were both informed that participation was voluntary, and that no personal or sensitive data would be disclosed in the report. The tone of the conversation was kept professional but friendly to create trust and openness.

During the session, the interviewer followed the planned guide but also asked clarifying questions when needed. The manager shared detailed experiences about ordering, stock rotation, waste tracking, and daily routines. The conversation also included descriptions of real examples, such as how "paniikkipaistaminen" (panic cooking) occurs during busy periods, and how ordering decisions affect the amount of waste generated. The staff member described practical experiences from daily kitchen work, including how ingredients are prepared, how holding times affect waste, and how mistakes can happen during busy shifts. The interview also included concrete examples, such as expired prep items, incorrect storage during rush hours, and situations where overproduction leads to unsellable food. After the interview, the recording was transcribed manually to ensure accuracy and to make the analysis easier. The transcript was reviewed several times to identify recurring themes, key phrases, and examples that explained why waste occurs. In total, two semi-structured interviews were completed for this thesis. Although the number of interviews was limited, the participants provided both managerial and operational perspectives on food and waste

management in the restaurant. The information collected provided a clear and comprehensive view of the restaurant's internal processes and helped to support the findings from the food journey mapping.

The implementation of the interview was successful, as it produced detailed and relevant data about food waste in the daily operations of Burger King Aleksanterinkatu. The results from this interview form an important part of the empirical research, giving a first-hand view of practical issues related to food waste and how they are handled inside the restaurant.

4.1.2 Results of the Interview

The interview data was analyzed in several steps to make the information clear and useful. The same analysis process was used for both the manager interview and the staff interview. First, the recordings were listened to multiple times and then written down word for word. This helped to capture everything the participants said accurately. After that, the text was reviewed and shortened by removing repeated words, pauses, and unrelated parts of the interviews. The goal was to keep only the meaningful content that answered the research questions. Once the text was cleaned, it was divided into smaller sections based on the main topics from the interview guide. These include areas such as where waste happens, how it is handled, what challenges exist, and what systems are in place to control it. Grouping the answers in this way made it easier to see patterns and connections between different points the manager and staff mentioned.

The analysis focused on identifying the main ideas and recurring issues that came up during the interviews. This step helped to turn the spoken words into clear information that could be compared and linked to other parts of the research. By doing so, it has become possible to understand how food waste is created, how the staff deals with it, and what factors influence it in everyday restaurant operations. This process turned long and detailed interviews into an organized summary that reflects the real situation in the restaurant. It also helped in forming the food journey map and made it easier to compare the findings with it, showing that both methods pointed to similar areas where food waste occurs.

Table 2: Content analysis of the interviews

Main Theme	Details	Category Summary
Food Waste Sources	Waste from storage due to overordering, short product dates and delivery quality. Kitchen waste from overproduction and “panic cooking” during rush hours. Waste from expired prep items. Items discarded when	Where waste is created.

	holding times expire. Mistakes in assembly leading to unsellable products.	
Operational Practices	Use of FIFO for stock rotation. Daily waste recorded in the waste list. Prep and sales monitored. Shift coordination importance. Staff follow prep times and handling rules. Production adjusted by shift depending on busyness.	How waste is managed.
Staff and Training	Staff motivation and awareness vary. Regular reminders needed. Shift leaders guide others. Attitudes affect results. Basic training provided when starting the job through Burger King University. Most learning happens during work. Rules are often forgotten during busy hours.	Human factors in waste control.
Challenges	Short shelf life of fresh items. Poor communication between shifts. New staff mistakes and missing records. Holding times leads to waste. Mistakes increase during rush hours. Storage conditions are not seen as a major issue by staff.	Barriers to reducing waste.
Existing Measures	FIFO in use. Daily tracking. Prep adjustments made based on sales. Waste reports reviewed. Smaller prep quantities are used to reduce waste. Communication reminders between shifts.	Current control methods.

The purpose of the interviews was to understand how food waste occurs in Burger King Aleksanterinkatu's daily operations and what systems are used to manage it. The discussion focused on the experiences of both the manager and the staff member, covering the restaurant's internal practices. The analysis identified five key themes: food waste sources, operational practices, staff and training, challenges, and existing measures.

The first key point discussed was the origin of food waste. The manager described:

“Most of the waste comes from the storage. We sometimes order too much, and when the sales are not so good, the products stay in the freezer and get old. Also, if we don't use FIFO correctly, some items expire before they are used.” (Restaurant Manager 2025)

The staff member supported this view and added:

“Most waste in the kitchen comes from expired prep items or products that pass their holding time.” (Staff Member 2025)

These comments show that waste begins both in storage and during preparation. Overstocking and inconsistent product rotation lead to expired products in storage, while holding times and short shelf life create waste in the kitchen. The manager explained that demand varies daily, which makes forecasting difficult. If too much stock is ordered, it results in spoilage and disposal before use. The staff interview showed that even with correct ordering, items can be lost during busy hours when prep levels rise and products expire faster. The problem also is connected to delivery cycles, where some products arrive with shorter dates than expected.

The second issue highlighted was kitchen waste during busy periods:

“In the kitchen, the waste comes mainly from overproduction. During rush hours, people panic and cook too much just in case. We call it paniikkipaistaminen, because everyone starts frying everything, and when it gets quiet again, we have to throw it away.” (Restaurant Manager 2025)

The staff member described the same problem from the operational side:

“During busy times, mistakes happen and some products pass their holding time before we can sell them.” (Staff Member 2025)

These statements show that human behavior is a significant source of waste. During high-demand hours, staff prepare more food to maintain service speed, and errors increase under pressure. When customer flow suddenly drops, unsold items exceed their holding time and must be discarded. Both interviews indicate that this pattern is common in fast-paced environments and reflects the difficulty of balancing speed, accuracy and waste control.

When asked about specific products most often wasted, the manager replied:

“The fresh ingredients like salad, tomato, and sauces are the most difficult. They have a short shelf life, sometimes only two or three days, and if we order too much, we can’t use them all.” (Restaurant Manager 2025)

The staff member confirmed this and added:

“Fresh items go bad quickly, and some prep ingredients expire during the shift if they are not used fast enough.” (Staff Member 2025)

These comments highlight the central role of short-lived ingredients in overall waste. Fresh produce and sauces are difficult to manage because their shelf life is limited while customer

demand changes daily. Ordering mistakes with these items often lead to predictable waste toward the end of the week, and the staff interview shows that even correctly ordered products can expire during busy shifts if prep levels are not adjusted in time.

Another central point in the interview concerned waste monitoring practices. The manager explained:

“We track waste every day. The team marks it on the list, and I check it in the SEMS system, which is restaurant management system platform used by Burger King. It shows how much we lose and where. But sometimes people forget to mark it or don’t see why it matter.” (Restaurant Manager 2025)

The staff member described the same process and added that the restaurant also uses the Hävikki, waste tracking system, to record waste during shifts:

“We record waste in Hävikki as well. We put the product and the reason, but during busy hours staff can forget.” (Staff Member 2025)

These comments show that waste recording is a standard part of daily operations, supported by SEMS and Hävikki tracking. In Hävikki, each wasted item is logged with its category and reason, which helps managers understand patterns and adjust prep levels. SEMS, the SICOM Enterprise System used by Burger King, ties together Point of Sale data, sales reports, labor information, inventory and menu management into one platform. It provides waste data from different parts of the restaurant, such as storage waste, preparation waste, holding-time waste and customer waste. The accuracy of both systems depends on consistent marking. Missing entries reduces the usefulness of the data and makes it harder to identify where waste increases during different shifts.

The discussion then moved to staff awareness and the training:

“I think training and motivation make a big difference. When people understand why we do it, they care more. But if they don’t, they just throw it away and move on.” (Restaurant Manager 2025)

The staff member supported this view and added:

“We learn and know the rules, but during busy hours staff are too busy to remember all. Most of it depends on how the shift is going and who is working.” (Staff Member 2025)

These comments show that waste control is strongly influenced by employee engagement. The manager linked poor waste habits to low motivation or limited understanding of why

recording matters, while the staff interview highlighted how pressure during busy periods affects behavior. Training, clear guidance and regular reminders from shift leaders are needed to maintain discipline in daily routines.

The manager also described the tools used to manage and reduce waste:

“We use FIFO, we track waste every day, and we check sales before shifts. It helps to plan how much we should prepare. If we see it’s going to be quiet, we cook less.”
(Restaurant Manager 2025)

The staff member offered a similar view:

“We adjust prep based on how busy it is. Smaller batches help, and it reduces waste.”
(Staff Member 2025)

These methods are part of the restaurant’s operational procedures and reflect systematic efforts to control waste through monitoring and planning. Despite this, communication between shifts remains an issue. Some employees fail to inform the next team about leftover products, leading to double preparation or unnecessary orders.

Finally, the manager summarized the overall challenge:

“Food waste is part of every restaurant, but we try to control it. The hardest part is storage and training people to care about it. When everyone follows the system, it works.” (Restaurant Manager 2025)

The staff member expressed a similar view and explained that routines often slip during busy periods, which leads to more waste:

“When it gets busy, in hurry people miss some of the rules and things expire faster.”
(Staff Member 2025)

These comments show that food waste is both an operational and human challenge. The interviews indicate that structured tools, such as FIFO rotation, SEMS tracking, Hävikki logging and prep planning, work effectively only when staff follow the routines consistently. Success depends on communication, shared responsibility and maintaining the same practices during both quiet and busy shifts.

The interviews show that the main waste points appear in both storage and preparation, and these match the patterns seen in the food journey map. Waste in storage comes from overordering, short product dates and inconsistent FIFO practices. In the kitchen, waste is caused by expired prep items, holding times and human factors such as panic cooking during

rush hours. Both interviews also highlighted that incomplete waste marking in SEMS and Hävikki reduces the accuracy of tracking. Together, the findings show that waste is driven by a mix of operational routines and staff behavior during daily work.

Overall, the interview findings provide a clear and practical view of food waste at Burger King Aleksanterinkatu. Both the manager and staff member showed that the procedures for preventing and tracking waste are in place, but they depend strongly on staff performance and communication during daily work. The combined insights support the patterns identified in the food journey map and offer a solid foundation for developing waste reduction methods and internal improvement suggestions later in this thesis.

4.2 Theory of Research Method II: Food Journey Map

The food journey map is a visual method adapted from service design to trace how food moves through a restaurant system from procurement to consumption and disposal and it helps identify where food waste occurs and why (Bitner 2008; Heuchert 2019). This method draws from the idea of journey mapping used in design disciplines, including Customer Journey Mapping and Service Blueprinting (Bitner 2008; Heuchert 2019), and the Product Journey Map (Kooijman 2022).

Kooijman's Product Journey Map (2022) was developed to visualize a product's life cycle and find points where resources can be reused, repaired, or wasted. In this thesis, the same principle is applied to food instead of products. The food journey map follows the flow of food items, staff actions, and customer interactions at Burger King Aleksanterinkatu. The insights from the interviews and previous literature guided the selection of categories, stages and focus areas used in the food journey map. It reveals points of inefficiency that lead to waste and supports the development of solutions to reduce it.

Food waste in quick service restaurant results from many small actions across several stages, which is supported by the interview findings. It appears during ordering, storage, preparation, service and disposal (Drewitt 2013). These stages follow the flow of food through a fast-food operation and match the points where waste is commonly created in QSR environments (Drewitt 2013). Traditional methods such as interviews or waste weighing describe the problem but do not show how these stages connect. A food journey map links them in one visual flow and makes it possible to see where value is lost during daily work.

This method fits the study because it captures both operational and behavioral causes of waste. It visualizes how food moves through each process and shows the points where waste appears. It also brings staff experience, customer behavior and process design into one frame. The interview insights helped focus the mapping on the stages where staff and the manager reported the highest amount of waste.

In service design, journey mapping helps understand an experience from the user's point of view. In practice, creating the food journey map involved several steps. First, the main food categories were selected using information from previous literature, interviews and the restaurant menu. Then, on-site observations were made to record how food moved from delivery to disposal during daily operations. Notes were taken on actions, staff roles, timing, and points where waste appeared. After collecting the data, each step was drawn in sequence to show how food passed through procurement, storage, preparation, service, consumption, and disposal. The final maps were then reviewed with staff to confirm that the process matched real work practices. The interviews helped confirm that mapping the flow through each operational step reflects the real sequence of work in the restaurant. Here, the "user" is the food itself. Tracking the "journey" of food across the full workflow, from delivery to disposal, shows where and how value is lost. This makes it a strong tool for analyzing quick service restaurant operations, which provides the foundation for identifying root causes of waste and developing practical improvement measures.

4.2.1 Implementation Plan

The food journey map was chosen for this thesis because it gives a clear way to see how food moves through the restaurant and where waste can occur. The interview findings helped determine which stages and food categories needed the most attention during mapping. It helps to understand every step in the food process, from receiving deliveries to the moment food is thrown away. This method is practical for a quick service restaurant like Burger King Aleksanterinkatu, where food is prepared and served fast, and small mistakes can easily lead to waste.

The process started after the research goals and questions were set. The first step was to choose which food items would be mapped. Fast food restaurants organize their menus around a small set of core items. These include burgers, fries and soft drinks. Kirkpatrick et al. (2014) state that the menus of major fast-food chains, including Burger King, are built mainly on hamburgers, French fries and sodas. These items form the base of fast service production and represent the most common products sold in quick service restaurants. The Burger King Finland website and menu were also reviewed to confirm the main product groups offered in the local context. Based on this, four categories were selected: burgers, fries, drinks and snacks. These represent different parts of the menu and show a range of preparation and storage methods. Studying several categories made it easier to understand how food waste happens in different areas of the restaurant.

Observation took place during September and October 2025. Observations were made on-site at Burger King Aleksanterinkatu during various shifts, including both quiet and busy times. The goal was to see how staff handled food under real working conditions and how waste

appeared during daily operations. During the observation, the food flow was followed directly on-site to document how each food category moved through the restaurant's daily operations. Notes were taken continuously in a simple visual format, including short written descriptions, quick sketches and step-by-step tracking of how food items were handled at each stage. These visual notes captured actions such as receiving deliveries, placing items in storage, preparing ingredients, assembling orders and handling leftovers. Internal materials such as kitchen procedures and preparation guides were not used as research data but were reviewed only to confirm that the observed steps matched the restaurant's official working methods. This combination of real-time observation and confirmation from internal guidelines ensured that each stage in the food journey map reflected the actual workflow as it occurred in practice.

Each food category was mapped through six stages: procurement, storage, preparation, service, consumption and disposal. These stages were chosen because food waste in food-service settings appears at several points of the operational flow. Renfors, Nurkka & Koivupuro (2024) describe food handling in three broad phases: pre-kitchen, kitchen and post-kitchen, which cover supplier ordering, inventory, storage, preparation, service and surplus management. In the quick service context, Drewitt (2013) notes that waste is created especially in storage, serving and post-consumption stages. These stages were also confirmed during the interviews. Based on these findings, the six stages used in this study reflect the full movement of food through the restaurant and show where waste is most likely to occur. During observation, notes were taken on the actions at each stage, the staff involved and the way food moved from one point to another. The focus was on everyday work, including how deliveries were received, how products were stored, how food was prepared and how leftovers were handled after service. Internal materials such as stock sheets, kitchen procedures, and preparation guides supported the observations and helped confirm that each stage of the map matched daily practice.

The implementation of the food journey map was completed after all four categories were mapped and confirmed. The maps now serve as the main reference for understanding the flow of food in Burger King Aleksanterinkatu and form the base for later research and development work in this thesis.

4.2.2 Results of the Food Journey Map

This sub-chapter presents the results of the food journey mapping carried out at Burger King Aleksanterinkatu. The goal of the mapping was to understand in detail how food moves through the restaurant's daily operations and to record the main stages where waste occurs. The results describe the full process for four main food categories: burgers, fries, drinks, and snacks. Each food item followed through six stages of the restaurant workflow: Procurement,

Storage, Preparation, Service, Consumption, and Disposal. The food journey map was created and conducted for all four categories, and the complete maps are presented in Appendix 1. A sample food journey map of fries is shown below. The results also connect with the interview findings, which identified storage, preparation and service as the stages where most waste occurs.

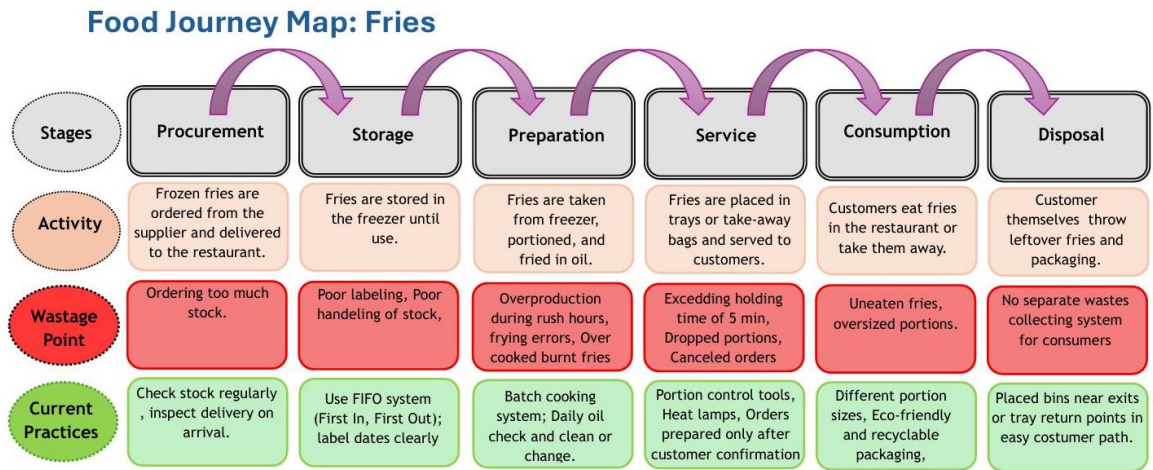


Figure 5: Food Journey Map of Fries

Figure 5 presents the full Food Journey Map for fries as a sample, following the product from delivery to disposal across six stages: procurement, storage, preparation, service, consumption and disposal. The figure highlights the main activities in each stage, the areas where waste occurs and the current practices followed by staff. This visual representation supports the written results by showing how operational steps connect and where food loss appears in real work situations. It also validates the findings from both the interviews and observations, as the waste points shown in the map match the issues described earlier in this chapter.

All the information used for the maps came from on-site observations, interviews and operational information like kitchen procedures and preparation guides. Before the maps were created, the collected data were organized by category and matched with the correct stage of the process. This made it possible to follow the food step by step and to see how it was handled from the time it arrived at the restaurant until it was thrown away.

The burger journey map shows a detailed view of how burgers move through the kitchen. The burger category was selected because it represents the core product of the restaurant and involves several separate ingredients that affect waste. The process begins when buns, patties, cheese, vegetables, and sauces are delivered from suppliers and stored either in freezers or chillers. Storage areas are divided by temperature and product type. During preparation, burgers are assembled following a strict order: buns are toasted, patties are

cooked, and vegetables and sauces are added according to the recipe. The preparation area is busy, and several burgers are often made at the same time. The next stage is service, where finished burgers are wrapped or boxed and handed to the customer. The mapping showed how many small actions happen in seconds during this stage, including checking orders and packing. The consumption stage happens both in the restaurant and through takeaway. The final stage, disposal, records how customers return trays and discard leftover food and packaging. This complete sequence gives a clear view of how the product moves through multiple hands and areas before reaching the waste bins. Waste was mostly observed during preparation, including dropped items, incorrect assembly, and expired buns or vegetables from storage.

Fries were mapped because they are produced in high volume and have a short holding time, making them a frequent source of waste. The fries journey map begins with the ordering of frozen fries from the supplier. The fries are stored in the freezer until they are needed. During preparation, staff portion the fries, fry them in oil, and keep them under heat lamps for a short period before serving. The holding time is brief, and fries must be served quickly. The service stage involves either placing the fries on a tray for dine-in or in a takeaway bag. The mapping shows that this process moves very fast, with multiple orders handled at once. Consumption takes place immediately after serving, either at the table or outside the restaurant. The disposal stage documents how leftover fries, packaging, and trays are collected and discarded. Waste was mainly recorded during preparation and service because of overproduction, frying errors, portions exceeding the holding time, and dropped servings during busy hours. This aligns with staff interviews, where holding times and fast-paced service were described as major contributors to waste.

Drinks were included because they involve automated dispensing and customer self-service, which influence waste in different ways. The drinks journey map follows beverages such as soft drinks, juices, and other served liquids. The process begins with the delivery of drink syrups, bottles, and other supplies from external suppliers. These are stored in dry or cool areas near the drink station. The preparation stage is mostly automated. Drinks are prepared either through a machine dispenser or by staff filling cups by hand. The service stage includes handing the drinks to customers or placing them for self-service pickup. Consumption may happen inside or outside the restaurant, depending on the order type. Disposal includes the collection of empty cups, lids, straws, and remaining ice. The map shows that waste in drinks mostly occurred due to overfilled cups, unfinished drinks, and spilled liquids during preparation and serving. These issues were noted as frequently during peak hours when several orders were processed at the same time.

Snacks were selected because they involve batch frying and fast turnover, which can create waste during busy periods. The snacks journey map shows the flow of smaller side items, such

as nuggets, onion rings, and other fried snacks. The process starts with frozen snacks ordered from the supplier and stored in the freezer. When needed, these are taken out, fried, and placed into boxes or trays for serving. The service process is quick and repetitive, as snacks are often prepared in small batches. The consumption stage happens immediately after purchase, either inside or outside the restaurant. The final stage is disposal, where boxes and leftover pieces are thrown away by customers or staff. Waste appeared mainly in preparation and service, including overproduction during rush periods, dropped boxes, and canceled orders.

Full journey maps for all four product categories (burgers, fries, drinks and snacks) are included in Appendix 1. After four maps were completed, they were reviewed and compared. The six stages were the same in every category, but the time spent in each stage varied. Burgers and snacks required more preparation time, while fries and drinks passed through the stages faster. The maps also showed that most of the restaurant's activity and most of the waste took place between the preparation and service stages. These two steps involved the highest number of people, tools, and actions happening at once. Waste in storage occurred less often but was still present due to expired or mishandled items, as confirmed by interviews. Customer-related waste appeared mostly during consumption and disposal, where unfinished portions and packaging were left behind.

When reviewing all four food journey maps together, several common waste points were identified across the restaurant's operations. The patterns observed in the maps support the earlier interview results, where both staff and the manager reported similar waste points. This included overproduction during rush hours when food was prepared in advance, and demand did not always match the forecast. Dropped or mishandled items also added to waste during fast preparation and serving. Waste increased when holding times were exceeded, especially for fries and other fried products that cannot be served after a set period. Mistakes in preparation or assembly, such as wrong order combinations or incorrect ingredients, created additional losses. Some orders were canceled after food was already prepared, which made the items unsellable. Uneaten food and leftover portions, especially fries and snacks, are added to customer waste. Mixed waste from food and packaging made disposal more difficult and reduced the amount that could be separated or recovered. These recurring waste points were consistent in every product category and represent the main areas where food loss was recorded during the mapping period.

Each map was drawn using the same visual format to make it easy to read and compare. The stages are placed in a clear order from left to right, showing the continuous movement of food. Under each stage, short descriptions summarize what happens, who is involved, and how materials move. This visual approach helps to understand not only the process itself but also the rhythm of daily operations in the restaurant.

The results of the food journey mapping make the internal structure of the restaurant visible in a way that written notes alone could not. They show how different sections of the restaurant work together and how food, staff, and equipment interact. The maps also show that each category has its own pace and workflow. Burgers and snacks follow a more detailed preparation process, while fries and drinks rely on timing and quick service. Despite these differences, all processes connect through the same sequence of stages, and waste appears in similar points mainly during preparation, service, and disposal.

The four maps together create a complete picture of the food flow at Burger King Aleksanterinkatu. They document how ingredients enter the restaurant, how they are prepared and served, and how they finally leave the system as leftovers or packaging waste. The results show that food handling is a continuous cycle where many small steps happen at high speed. The visual structure of the maps provides a clear way to see this flow from start to finish and to understand where most food waste is generated.

It is important to note that the results of the food journey mapping reflect only the operations observed at Burger King Aleksanterinkatu during the research period. The mapping was done under normal working conditions within a limited time frame. Therefore, the results represent the specific patterns seen in this restaurant and may differ from those in other branches or time periods. The findings should be viewed as an accurate description of this particular restaurant's processes and waste sources rather than a general conclusion about all Burger King operations.

4.3 Improving Food Waste Management

This section presents practical ways to reduce food waste at Burger King Aleksanterinkatu. The ideas come from the results of the food journey mapping and the interviews with both the manager and staff member. Together, they show how waste happens in daily work and how it can be better controlled. The purpose is to provide clear solutions that can be applied in daily operations, making waste management more effective and consistent.

The development focuses on three main areas: operations, staff behavior, and management practices. These areas affect how food is handled from delivery to disposal. The proposed improvements are small and realistic, so they can be applied without major changes or costs. The results showed that most food waste occurs in three stages: storage, preparation, and service with additional waste appearing during disposal from unfinished portions and mixed waste. In storage, waste comes from overordering and short product shelf life, especially for fresh items like lettuce and sauces. In preparation, waste often happens during rush hours because of "panic cooking," when too much food is made in advance. In service, waste

appears from dropped or canceled orders and uneaten portions. The food journey map made these points visible by showing the exact steps where each type of waste occurred.

The causes are both operational and human. Operational issues include poor ordering and storage practices, while human issues involve stress, poor communication, and weak adherence to routines. Existing tools like FIFO rotation, waste tracking lists, and SEMS reports help manage waste, but they are not always used consistently. Training and communication are key to making these tools effective.

The development process focuses on two main goals: improving daily routines and increasing staff awareness. The suggested actions aim to make waste prevention part of normal work; with clear steps that staff can follow easily. Thus, these recommendations turn research findings into practical solutions. By improving how food is ordered, stored, prepared, and served and by helping staff understand their role in waste prevention, Burger King Aleksanterinkatu can build a more sustainable and efficient waste management system. These development steps form the basis for the improvement suggestions presented in the next sub-sections.

4.3.1 Operational Improvements

Operational issues were identified as one of the main sources of food waste at Burger King Aleksanterinkatu. These issues include problems in ordering, storing, preparing, and monitoring food during daily operations. The research showed that small changes in these areas can have a large effect on reducing food waste. Improvements in order planning, stock rotation, and preparation control can help the restaurant reduce unnecessary losses without requiring major changes to the overall system.

The first improvement concerns order planning. One of the most common causes of waste is ordering too much food, especially perishable ingredients like lettuce, tomato, and sauces. These items have a short shelf life and spoil quickly if not used on time. The interview with the restaurant manager revealed that orders are often based on estimates rather than real data. To fix this, order planning should be guided by actual sales trends from previous weeks. Sales data provides a clear view of what items sell most, what days are busiest, and what products move more slowly. By comparing this data with current stock levels, the manager can make more accurate ordering decisions. This helps prevent overstocking and ensures that fresh products are used efficiently.

Another important improvement involves stock rotation. The restaurant already follows the FIFO (First In, First Out) principle, but it is not always followed strictly, especially during busy shifts. Staff sometimes take new stock without checking older products, leading to expired or forgotten items. A simple way to improve this process is by introducing a color-coded labeling

system. Each delivery batch can be marked with a specific color that corresponds to its arrival day or expiration date. In a fast-paced kitchen, staff do not always have time to check labels carefully during rush hours. Visual markers make it easier for staff to see which products should be used first, even when the kitchen is busy. In addition, assigning a staff member to check stock rotation at the start and end of each shift can help ensure the process is done consistently.

The preparation stage is another point where a large portion of waste occurs. During busy hours, staff often prepare more food than needed to keep up with orders. When the customer flow suddenly slows down, many of these items exceed their holding time and must be discarded. This behavior, described by the manager as “panic cooking,” can be reduced through clearer preparation guidelines. The staff interview confirmed that mistakes and expired prep items increased when batches were too large. The restaurant can use preparation charts that show how much food should be cooked depending on the time of day and number of customers. For example, in quiet periods, only small batches should be prepared at a time, while during peak hours, larger batches can be made. This system encourages more accurate production and helps avoid waste caused by overproduction.

Another improvement area is delivery coordination. The interview findings showed that deliveries sometimes arrive with products that have short expiration dates. This was also visible in the storage stage of the food journey map. These short-dated items increase the chance of waste because they cannot always be used in time. To prevent this, the restaurant could communicate regularly with suppliers about product freshness and request longer shelf-life items when possible. It may also help to reduce bulk ordering and instead receive smaller deliveries more often such as twice per week. This approach would keep stock fresh and easier to manage, while reducing the risk of storing too many perishable products at once.

Lastly, monitoring of holding times should be improved. In a fast-food restaurant, holding time refers to how long cooked items can stay warm before being served. Products such as fries, nuggets, and burger patties have short holding times, usually just a few minutes. Once that time is exceeded, they must be thrown away. The mapping and interviews showed that holding time violations happen mostly during busy hours, when attention is focused on serving customers. Installing small digital timers or screen reminders near the cooking area could help staff track time more accurately. Regular checks by the shift leader can also ensure that expired products are replaced quickly and safely.

Together, these improvements focus on the key operational areas where waste occurs ordering, storing, preparing, and serving. By combining better planning with consistent monitoring, the restaurant can reduce unnecessary losses and improve efficiency. These actions are simple, practical, and realistic to apply in daily operations without requiring new

systems or heavy investment. Implementing these improvements would not only lower waste but also improve product quality, reduce costs, and make the workflow smoother for staff. Over time, these small operational changes can create a more sustainable and efficient way of managing food waste at Burger King Aleksanterinkatu.

4.3.2 Behavioral and Staff-Related Improvements

Human behavior has a major influence on how food waste is created and managed in daily operations. The interview findings showed that many of the restaurant's waste issues such as panic cooking, missed waste entries, inconsistent FIFO checks, and rushed preparation come from stress, communication gaps, or limited awareness. Even though the restaurant has established systems like FIFO and waste tracking, their success depends on how consistently employees follow them. For this reason, improving staff habits, cooperation, and motivation is as important as improving operational processes.

One practical improvement is to begin each shift with a short team reminder about food waste. These quick one- or two-minute discussions led by the shift leader can focus on simple tasks such as checking expiry dates, following prep limits, marking waste immediately, and avoiding unnecessary batch cooking. Regular reminders help keep waste prevention visible during fast-paced work and make these practices part of the daily routine instead of optional tasks.

Improving communication between shifts would also help reduce preventable waste. Both interviews showed that information does not always move from one team to the next, leading to repeated mistakes or duplicate preparation. A simple "shift handover sheet" or a shared digital note could solve this. The outgoing shift could record basic information such as leftover prep, items nearing expiry, and unusual waste. When the next shift starts, they can review this information and adjust production accordingly. This supports teamwork and reduces confusion during busy periods.

Training is another area with potential for improvement. While new employees receive basic training through Burger King University and on-the-job teaching, waste management could be emphasized more clearly. Short training sessions or refreshers can explain not only the procedures but also why they matter, such as how waste affects food quality, workload, and daily costs. When staff understand the purpose behind each step, they are more likely to follow the system consistently. Motivation can also be improved by using positive feedback. A simple weekly waste chart, showing the performance of each shift, can help teams see their progress. Small rewards or public recognition for shifts that stay within waste targets can make waste reduction a shared achievement rather than an individual task.

The interviews also highlighted panic cooking as a common problem during busy hours. Staff sometimes prepare large batches because they fear delays, which leads to overproduction when demand slows. This behavior can be reduced by training employees to base cooking decisions on sales patterns and real-time order flow. Shift leaders can support this by reminding staff to start with smaller batches and increase production only when needed. Encouraging calm and data-based decisions helps maintain steady production and lowers the risk of unnecessary waste.

These behavioral improvements focus on communication, awareness, cooperation, and motivation, the human factors that strongly shape daily food handling. By combining clear communication tools, consistent training, and team-based incentives, Burger King Aleksanterinkatu can build a workplace culture where waste reduction becomes a shared responsibility. Over time, these habits can strengthen consistency across shifts and make food waste prevention a natural part of everyday work.

4.3.3 System and Monitoring Improvements

The restaurant already uses SEMS and Hävikki (daily waste lists) to record food waste, but the interview findings showed that these tools are not always used consistently. Waste is sometimes marked late, marked only partly, or not marked at all during busy hours. When entries are incomplete, the overview of waste becomes unreliable. Improving how these systems are used can make the data clearer and more useful for planning.

A key improvement is to ensure that all waste is recorded immediately when it happens. Delays lead to forgotten items or incorrect entries, which weaken the accuracy of the system. Assigning a clear responsibility to shift leaders can support this. At the end of every shift, the shift leader should check both SEMS and Hävikki entries to confirm that all waste has been marked. This creates accountability and prevents gaps in the data. Reviewing SEMS only monthly is often too slow to catch patterns in time. Weekly reviews allow managers to spot unusual changes, such as a sudden rise in expired prep items or increased holding-time waste and respond before the problem grows. Making waste information visible to the whole team can also improve awareness. Simple charts placed in the staff area showing weekly or monthly waste amounts help employees see the impact of their actions. Seeing improvements increases motivation and supports consistent behavior across shifts. Both interviews showed that staff are more likely to follow procedures when they see clear results of their actions.

The waste data collected through SEMS and Hävikki can also support planning. Comparing waste numbers with sales data helps identify which products create the most losses and at what times. If data shows that salads or sauces are often wasted toward the end of the week, ordering smaller amounts or adjusting prep levels earlier would reduce spoilage. If holding-time waste increases during specific hours, the restaurant can adjust prep limits or staffing

decisions for those periods. By improving the completeness of data entry, increasing review frequency, and using system data actively for planning, the restaurant can make its existing tools far more effective. This ensures that decisions are based on accurate and up-to-date information, supporting better control of waste and overall efficiency.

4.3.4 Development Output

Based on the findings from the food journey mapping and the interviews with the manager and staff member, a Food Waste Management Improvement Framework was created for Burger King Aleksanterinkatu. The framework combines all recommendations into one practical plan that can be used in daily operations. It focuses on three core areas of waste management: operations, staff behavior, and monitoring systems. Each area includes the main problems identified, the actions needed, and the results expected after implementation.

The framework is designed to be simple and realistic for a quick service restaurant environment. All actions can be applied gradually, without major structural changes or additional financial cost. The aim is to make small adjustments that collectively lead to noticeable reductions in food waste and more efficient use of resources.

Table 3: Food Waste Management Improvement Framework for Burger King Aleksanterinkatu

Area	Problem Found	Action to Take	Expected Result
Storage	Overordering and inconsistent FIFO use lead to expired products.	Plan orders using weekly sales data. Apply color-coded FIFO labels to all stock. Train staff to check expiry dates during storage.	Fresher stock, fewer expired items, reduced storage waste.
Preparation	Overproduction during rush hours and errors linked to “panic cooking.”	Use prep limit charts based on current sales. Encourage staff to check real-time sales before cooking large batches. Give short portion-control reminders before peak hours.	More accurate preparation, reduced overproduction, fewer unsellable items.
Service	Food dropped, unsold, or held past time limits.	Use a shift handover sheet to report leftovers. Remind staff to follow holding time	Fewer serving mistakes, less waste from expired or

		rules. Adjust prep when customer flow slows.	dropped items, smoother shift coordination.
Staff	Inconsistent awareness and motivation regarding waste reduction.	Give daily short reminders. Include waste topics in training. Makeshift leaders responsible for checking waste entries. Recognize teams that show improvement.	Higher engagement, better teamwork, stronger responsibility for waste control.
Monitoring	Waste not always marked, SEMS and Hävikki are reviewed too rarely.	Ensure all waste is recorded immediately and entered SEMS and Hävikki daily. Display simple charts showing weekly waste levels. Review SEMS reports weekly.	More accurate data, clearer trends, faster corrective action.

This framework provides a clear and structured way to improve food waste management in the restaurant. It connects operational routines with staff behavior and system use, showing how each area contributes to waste reduction. By following this plan, the restaurant can strengthen daily habits, improve communication, and use existing tools like SEMS more effectively. This supports reduced costs, better product quality, and progress toward Burger King’s sustainability goals. The framework also supports continuous development. After the first steps are implemented, managers can review results every few months and make further adjustments, such as improving forecasting methods, adding short refresher sessions, or using digital reminders for waste tracking. This gradual approach helps build a long-term waste management culture and supports continuous improvement through everyday work.

4.3.5 Recommendations

The development process produced several practical recommendations that can help Burger King Aleksanterinkatu reduce food waste and strengthen everyday management practices. These recommendations combine operational control, data use, and staff engagement to support long-term improvement.

Integrate waste reduction into everyday work. Food waste practices should be part of normal routines rather than an extra task. Short reminders at the start of each shift can highlight key points such as correct FIFO use, accurate prep levels, and proper waste marking. Linking

these reminders to product quality and teamwork helps employees understand how their actions affect results. When waste prevention becomes a shared expectation, staff act more consistently even during busy hours.

Use data actively in decision-making. The restaurant already collects waste data through SEMS and Hävikki (daily waste lists), but this information should be reviewed more frequently. Weekly comparisons between waste reports and sales data can help managers spot problems early, such as increasing waste from specific items or patterns connected to certain shifts. Using real-time or weekly data creates faster responses and makes ordering, storage, and preparation more accurate.

Prioritize control of short shelf-life items. Fresh products such as lettuce, tomato, sauces, and buns were confirmed in both the interview and mapping results as major sources of waste. These items should be ordered in smaller quantities and checked more often. Assigning one employee per shift to verify expiry dates, rotate stock, and organize the walk-in areas can reduce the risk of spoilage. Better attention to these ingredients will lower storage waste and improve product quality.

Support staff engagement and responsibility. Employee behavior strongly affects how food waste is created and prevented. Managers can build engagement by recognizing teams that show improvement, displaying progress charts in the staff area, and sharing positive feedback. Involving staff in small improvement activities, such as updating prep limit charts or organizing storage areas, increases ownership and encourages consistent habits.

Strengthening communication with suppliers. Some waste issues came from deliveries with short expiration dates or inconsistent product quality. Maintaining regular communication with suppliers allows the restaurant to request fresher stock, adjust delivery quantities, or return unsuitable products quickly. Sharing basic waste trends with suppliers also helps them understand where improvements in packaging or delivery timing are needed.

Together, these recommendations create a balanced approach that combines clear procedures with employee participation. They can be implemented gradually within the restaurant's existing system. By focusing on both people and processes, Burger King Aleksanterinkatu can achieve steady and measurable reductions in food waste.

The combined findings from the food journey mapping and interviews show that food waste at Burger King Aleksanterinkatu results from a mix of operational inefficiencies and daily working habits. Many of the issues are small but consistent, including overordering, short shelf-life items expiring before use, overproduction during peak hours, and incomplete waste marking. Weak communication between shifts and lack of routine checks further increase these problems.

The improvement framework provides a practical way to address these challenges. It connects ordering, storage, preparation, and tracking with stronger staff awareness and teamwork. The steps are simple to apply in daily work and detailed enough to support stable change. By improving planning, communication, and consistent use of existing systems such as SEMS and Hävikki, the restaurant can prevent waste before it occurs. When staff understand the purpose behind each rule and feel responsible for results, waste naturally decreases. Supplier cooperation can further support freshness and reduce losses from short-dated products.

These recommendations do not require major investments or new systems. They focus on daily habits, clear responsibilities, and small process adjustments that save time, reduce costs, and improve product quality. If applied consistently, these steps can build a stronger waste management culture and help Burger King Aleksanterinkatu reduce food waste in a sustainable and practical way.

5 Conclusion

The aim of this thesis was to study food waste management at Burger King Aleksanterinkatu and to develop practical and realistic ways to reduce waste in daily operations. The research focused on identifying where food waste occurred, examining how it was managed, and suggesting improvements that fit within the restaurant's existing systems. The overall goal was to support more sustainable operations using simple, efficient practices suitable for a fast-paced quick service environment.

The theoretical framework examined food waste in the context of quick service restaurants. It discussed key concepts such as waste generation, food waste management, sustainability practices, food recovery hierarchy and circular economy. These frameworks helped link theoretical knowledge with real working conditions and showed how food waste resulted from both structural processes and everyday human behavior.

Two qualitative research methods were used: food journey mapping and a semi-structured interview. The food journey map made it possible to observe how food moved through the restaurant, from ordering and storage to preparation, service and disposal. It identified practical waste points such as overproduction, expired items and incorrect storage. The interviews provided detailed insights into staff routines, internal procedures and daily challenges in managing waste. Together, these methods gave a complete view of the technical and behavioral factors behind food waste. The findings revealed that the main causes of food waste at Burger King Aleksanterinkatu were over-ordering, weak stock rotation, short product shelf life and mistakes made during preparation and service. "Panic

cooking” during busy periods was identified as a frequent source of overproduction. Storage waste was also significant, especially for fresh ingredients with short shelf life. Incomplete or inconsistent waste marking reduced the accuracy of tracking and made it harder to identify trends.

Based on these results, a Food Waste Management Improvement Framework was developed. The framework grouped the main improvements into three areas: operational, behavioral and system-related actions. Operational improvements included using sales data for order planning, clearer FIFO practices and reviewing delivery schedules. Behavioral improvements focused on staff communication, practical reminders and building a sense of shared responsibility. System-related improvements emphasized accurate waste marking, more active use of SEMS data and regular monitoring.

All recommended improvements have been designed to be realistic and easy to apply. They focused on small, routine changes that could be integrated into daily work without major costs. The framework also supported building a stronger waste management culture, encouraging staff to understand the purpose behind each rule and participate more actively in waste prevention.

The research showed that food waste management depended on both systems and people. Even with established procedures, consistent results required clear communication, teamwork and regular follow-up. Management played an important role in maintaining these practices and ensuring that waste reduction remained part of everyday work. For future development, similar studies could have been carried out in other Burger King locations to compare results and identify broader patterns. Further research could have explored digital waste-tracking tools, automation or predictive systems to support decision-making. Cooperation with suppliers might also have offered opportunities to improve product shelf life, delivery timing and packaging.

Although this study focused on a single restaurant, the findings reflected challenges common to many quick service operations. The methods and framework developed here could be adapted for other locations and scaled for broader use.

In conclusion, this thesis provided Burger King Aleksanterinkatu with a practical and structured approach to reducing food waste. By combining operational improvements, stronger staff engagement and consistent monitoring, the restaurant could improve resource use, reduce costs and support more sustainable daily operations. Applying these ideas regularly would help decrease waste and strengthen the restaurant’s commitment to responsible and environmentally aware business practices.

References

Published References (Books and E-books)

- Adams, K. & Lawrence, E. 2019. *Research methods, statistics, and applications*. 2nd edition. Thousand Oaks, California: SAGE Publications.
- Eriksson, P. & Kovalainen, A. 2008. *Qualitative methods in business research*. 1st edition. London: SAGE Publications.
- Kananen, J. 2015. *Online Research for Everyone: Basic Guidelines for Internet-Based Research*. Jyväskylä: Jyväskylä University of Applied Sciences.
- Mason, J. 2022. *Qualitative researching*. 3rd edition. London: SAGE Publications.
- Puusa, A. & Juuti, P. 2020. *Laadullisen tutkimuksen näkökulmat ja menetelmät*. Helsinki: Gaudeamus.
- Stickdorn, M., Hormess, M. E., Lawrence, A. & Schneider, J. 2018. *This is service design doing: Applying service design thinking in the real world*. Sebastopol: O'Reilly Media.
- Silvennoinen, K., Nisonen, S. & Pietiläinen, O. 2020. Food waste in the service sector: Key concepts, measurement methods and best practices. In: Närvänen, E., Mesiranta, N., Mattila, M. & Heikkinen, A. (eds.) *Routledge Handbook of Food Waste*. London: Routledge.

Published References (Others)

- Ajzen, I. 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Aschemann-Witzel A, de Hooge I, Amani P, Bech-Larsen T & Oostindjer M 2015. Consumer-related food waste: causes and potential for action. *Sustainability* 7(6): 6457-6477. <https://www.mdpi.com/2071-1050/7/6/6457>
- Blešić, I., Kilibarda, M. & Milošević, N. 2021. How the extended theory of planned behavior can be applied in the research of the influencing factors of food waste in restaurants: Learning from Serbian urban centers. *Sustainability*, 13(16), 9236. <https://www.mdpi.com/2071-1050/13/16/9236>
- Burger King Company LLC. 2023. The Burger King® Story. Accessed 19 October 2025. <https://franchising.bk.com/about>
- C40 Knowledge Hub. 2025. *Managing Food Waste and Organics Towards Zero Waste*. Accessed 20 October 2025. <https://www.c40knowledgehub.org/s/article/How-to-manage-food-waste-and-organics-on-the-path-towards-zero-waste>
- Chauhan C, Dhir A, Akram M & Salo J 2021. Food loss and waste in food supply chains: A systematic literature review and framework development approach. *Journal of Cleaner Production* 295: 126438. <https://www.sciencedirect.com/science/article/pii/S0959652621006582>
- Chawla, G., & Sharma, R. 2022. Factors influencing hospitality employees' pro-environmental behaviors: A study based on the Theory of Planned Behavior. *Sustainability*, 14(15), 9015. <https://www.mdpi.com/2071-1050/14/15/9015>

- Delgado, L. 2023. Food losses in agrifood systems: What we know. *Annual Review of Resource Economics*, 15, 1-22. <https://doi.org/10.1146/annurev-resource-072722-025159>
- Drewitt, T. 2013. Food waste prevention in quick service restaurants. The International Institute for Industrial Environmental Economics (IIIEE), Lund University.
- Ellen MacArthur Foundation. 2019. Cities and Circular Economy for Food. Accessed 20 October 2025. <https://www.ellenmacarthurfoundation.org/topics/food/overview>
- European Commission. 2016. Estimates of European food waste levels. Accessed 7 October 2025. <https://www.greenpeace.org/static/planet4-eu-unit-stateless/2018/08/4fb2959f-4fb2959f-estimates-of-european-food-waste-levels.pdf>
- European Commission. 2023. EU Platform on Food Losses and Food Waste (FLW). Accessed 20 October 2025. https://food.ec.europa.eu/food-safety/food-waste/eu-actions-against-food-waste/eu-platform-food-losses-and-food-waste_en
- European Commission. 2025. 130 kg of food wasted per person annually in the EU. Eurostat News Release. Accessed 19 October 2025. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20251016-2?utm_source
- European Commission. 2025. EU actions against food waste. Accessed 20 October 2025. https://food.ec.europa.eu/food-safety/food-waste/eu-actions-against-food-waste_en
- European Commission. 2025. Food waste and food waste prevention - estimates. Eurostat Statistics Explained. Accessed 19 October 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Food_waste_and_food_waste_prevention_-_estimates
- Eurostat. 2024. Food waste: 132 kg per inhabitant in the EU in 2022. Accessed 10 October 2025. <https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240927-2>
- FAO 2013. Food wastage footprint: Impacts on natural resources. Rome: FAO. <https://www.fao.org/3/i3347e/i3347e.pdf>
- Fatorachian, H., Kazemi, H. & Pawar, K. 2025. Digital Technologies in Food Supply Chain Waste Management: A Case Study on Sustainable Practices in Smart Cities. *Sustainability* 17(5): 1996. <https://www.mdpi.com/2071-1050/17/5/1996>
- Fight Food Waste CRC. 2020. Consumer perceptions and understanding of packaging: Journey mapping industry report. Fight Food Waste Cooperative Research Centre. https://endfood-waste.com.au/wp-content/uploads/2023/11/FINAL_FFWCRC_JourneyMapping.pdf
- Filimonau, V., Todorova, E., Mzembe, A., Sauer, L. & Yankholmes, A. 2020. A comparative study of food waste management in full service restaurants of the United Kingdom and the Netherlands. *Journal of Cleaner Production*, 258: 120775.
- Financial Times. 2025. EU cracks down on fast fashion and food waste. Accessed 20 October 2025. <https://www.ft.com/content/044a6437-6534-457b-a3bf-7022b7770cf7>
- Finnish Ministry of Agriculture and Forestry. 2024. Platform meetings - European Commission's Food Safety. Accessed 20 October 2025. https://food.ec.europa.eu/food-safety/food-waste/eu-actions-against-food-waste/eu-platform-food-losses-and-food-waste/platform-meetings_en
- Food and Agriculture Organization of the United Nations. 2019. The state of food security and nutrition in the world 2019: Safeguarding against economic slowdowns and downturns. Accessed 10 October 2025. <https://openknowledge.fao.org/server/api/core/bitstreams/16480532-17e9-4b61-b388-1d6d86414470/content>

- Food and Agriculture Organization. 2018. Sustainable Food Systems: Concept and Framework. Accessed 20 October 2025. <https://openknowledge.fao.org/server/api/core/bitstreams/b620989c-407b-4caf-a152-f790f55fec71/content>
- Food Bank Network. 2024. National Food Loss and Waste Strategies. Accessed 20 October 2025. https://atlas.foodbanking.org/wp-content/uploads/2024/04/National-Food-Loss-and-Waste-Strategies_Global-Food-Donation-Policy-Atlas_April-2024.pdf
- Gill, K., Stewart, E., Treasure, E. & Chadwick, B. 2008. Methods of Data Collection in Qualitative Research: Interviews and Focus Groups. *British Dental Journal*, 204(6), pp. 291-295.
- Gonçalves, C., Saraiva, S., Nunes, F., & Saraiva, C. 2023. Food waste in public food service sector Surplus and leftovers. *Resources*, 12(10), 120. <https://www.mdpi.com/2079-9276/12/10/120>
- Graham-Rowe, E., Jessop, D.C., & Sparks, P. 2014. Predicting household food waste reduction: The role of social norms and behavioral control. *Resources, Conservation and Recycling*, 84, 15-23.
- Gustavsson J, Cederberg C, Sonesson U, Van Otterdijk R & Meybeck A. 2011. Global food losses and food waste - Extent, causes and prevention. Rome: FAO. <https://www.fao.org/4/mb060e/mb060e.pdf>
- Haltom, T. M. & Kamdar, N. 2024. Exploring journey maps as products from qualitative research: Application through food-insecure veterans' experiences. *Qualitative Health Research*, online ahead of print. doi:10.1177/10497323241274333. Accessed 20 October 2025. <https://pubmed.ncbi.nlm.nih.gov/39365601/>
- Hopkins. 2024. Burger King Finland's new Kingiklubi loyalty program boosts customer loyalty. Accessed 19 October 2025. <https://www.hopkins.fi/en/references/burger-king-finlands-new-loyalty-program-boosts-customer-loyalty>
- Kirkpatrick S.I., Reedy J., Kahle L.L., Harris J.L., Ohri-Vachaspati P. & Krebs-Smith S.M. 2014. Fast-food menu offerings vary in dietary quality, but are consistently poor. *Public Health Nutrition*, 17(4): 924-931. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3883949/>
- Koivupuro H-K, Hartikainen H, Silvennoinen K, Katajajuuri J-M, Heikintalo N & Reinikainen A. 2012. Influence of demographic, behavioural and attitudinal factors on the amount of avoidable food waste generated in Finnish households. *International Journal of Consumer Studies* 36(2): 183-191.
- Kooijman, F. 2022. Product Journey Mapping: A Design Method to Shift Towards a Circular Economy. Master's thesis. Delft University of Technology, Faculty of Industrial Design Engineering.
- Leanpath. 2025. Food Waste Solutions for Food Service Operations. Accessed 20 October 2025. <https://www.leanpath.com/>
- Lins M, Zandonadi R P, Raposo A & Ginani V C. 2021. Food Waste on Foodservice: An Overview through the Perspective of Sustainable Dimensions. *Foods* 10(6): 1175. <https://www.mdpi.com/2304-8158/10/6/1175>
- Over Easy Office. 2024. The Ultimate Guide to Reducing Food Waste in Restaurants. Accessed 20 October 2025. <https://www.overeasyoffice.com/blog/the-ultimate-guide-to-reducing-food-waste-in-restaurants>
- ReFED. 2023. Strengthening Food Rescue and Donation Systems. Accessed 20 October 2025. <https://refed.org/action-areas/strengthen-food-rescue/>

Renfors, S-M., Nurkka, J., & Koivupuro, H-K. 2024. Food waste management practices in restaurants: How to prevent and reduce food waste? *Matkailututkimus*, 20(1), 71-88. <https://journal.fi/matkailututkimus/article/view/145119/94205>

Sakaguchi, L., Pak, N. & Potts, M. 2018. Tackling the issue of food waste in restaurants: Options for measurement method, reduction and behavioral change. *Journal of Cleaner Production*, 180, 430-436.

Silvennoinen, K., Katajajuuri, J-M., Hartikainen, H., Heikintalo, N., Reinikainen, A. & Koivupuro, H-K. 2015. Food waste volume and origin: Case studies in the Finnish food service sector. *British Food Journal* 117(1): 317-330.

Thyberg K & Tonjes D 2016. Drivers of food waste and their implications for sustainable policy development. *Resources, Conservation and Recycling* 106: 110-123. https://www.academia.edu/89706166/Drivers_of_food_waste_and_their_implications_for_sustainable_policy_development

U.S. Environmental Protection Agency (EPA). 2025. Sustainable Management of Food Basics. Accessed 20 October 2025. <https://www.epa.gov/sustainable-management-food/sustainable-management-food-basics>

UNEP 2024. Food Waste Index Report 2024. United Nations Environment Programme. Accessed 20 October 2025. <https://www.unep.org/resources/publication/food-waste-index-report-2024>

Unpublished References

Restaurant Manager. 2025. Interview by the author on 25 October 2025. Unpublished.

Staff Member. 2025. Interview by the author on 27 October 2025. Unpublished.

Figures

Figure 1: Food waste categories (Silvennoinen et al. 2015).	9
Figure 2: The distribution of food waste throughout the food chain. (Kuluttajaliitto 2021; European Commission 2023).	11
Figure 3: Food Recovery Hierarchy (United States Environmental Protection Agency 2023). .	12
Figure 4: Circular Economy Systems Diagram (Alzaabi, Chia, & Show 2024).	14
Figure 5: Food Journey Map of Fries	30

Tables

Table 1: Comparison of proportions of different types of food waste in multiple studies (Silvennoinen et al. 2020, 148).	10
Table 2: Content analysis of the interviews	22
Table 3: Food Waste Management Improvement Framework for Burger King Aleksanterinkatu	38

Appendices

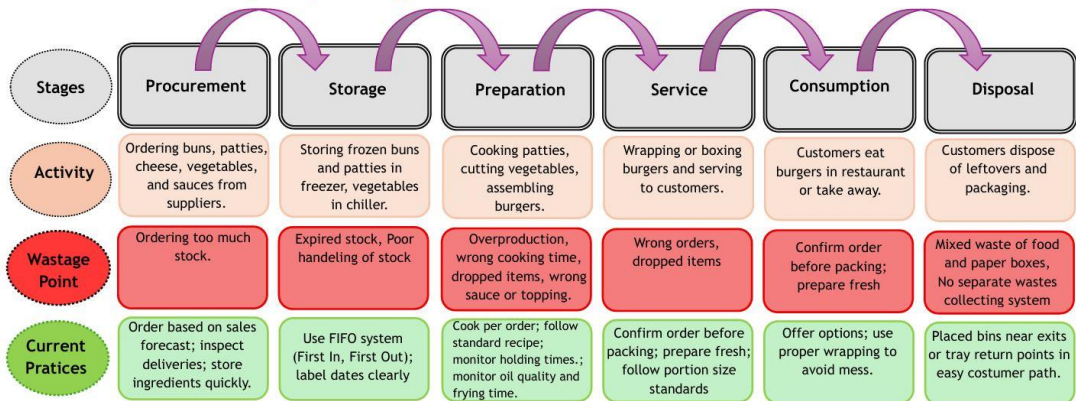
Appendix 1: Food Journey Map 49

Appendix 2: Interview Materials..... 51

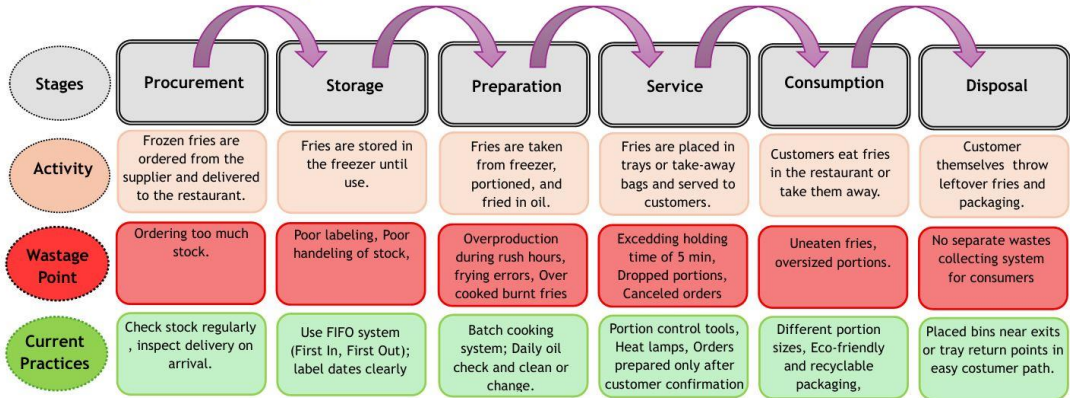
Appendix 1: Food Journey Map

This contains the full Food Journey Maps developed during the research. Each map visualises how food moves through Burger King Aleksanterinkatu’s operations and highlights the stages where waste appears. The maps support the findings presented in Section 4.2 and offer a clear view of how different product categories follow the same operational structure but create waste in different points.

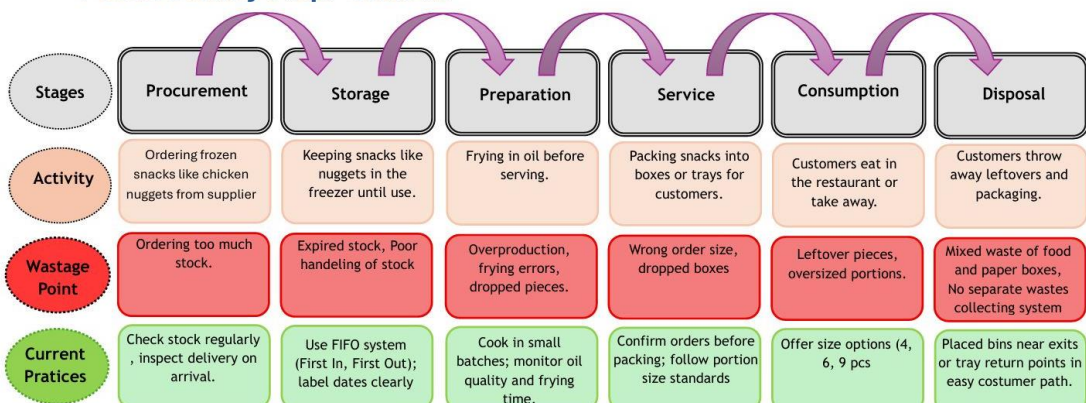
Food Journey Map: Burger



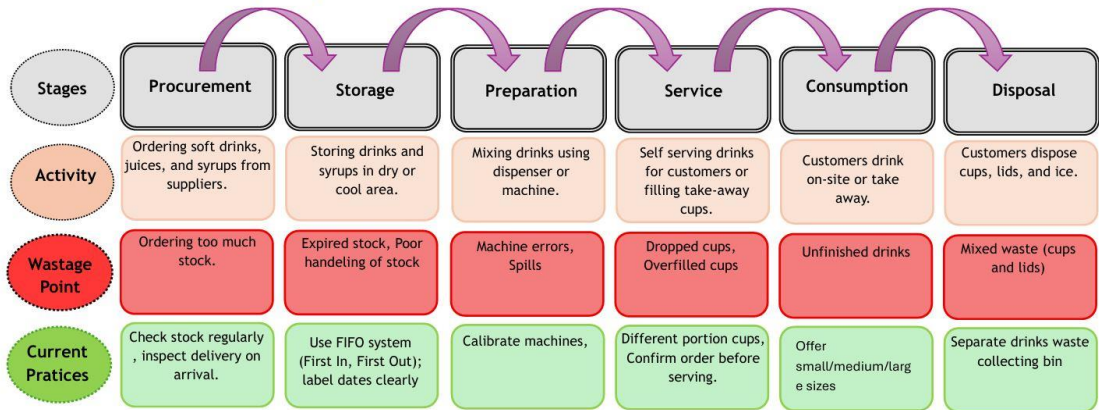
Food Journey Map: Fries



Food Journey Map: Snacks



Food Journey Map: Drinks



Appendix 2: Interview Materials

Theme Interview Questions

Theme 1: Background and Role

Can you tell me about your main role and your daily work in the restaurant?

What responsibilities do you have in food preparation, storage, or service?

Theme 2: Sources of Food Waste

Where do you see the most food waste happening – in storage, cooking, or service?

What types of food are usually wasted the most?

What are the main reasons food gets wasted – overproduction, spoilage, or mistakes?

Theme 3: Waste Handling and Tracking

How do you and your team handle food waste when it happens?

Is there any system or record used to track food waste?

How accurately is waste marked or reported during shifts?

Theme 4: Staff Training and Awareness

Have staff received any training or guidance on reducing food waste?

How well do employees follow prep rules, storage rules, and holding times?

What are the biggest challenges staff face when trying to reduce waste?

Theme 5: Prevention Methods and Improvements

What steps are taken to prevent food waste before it happens?

What actions or methods have been used so far to reduce waste?

What new ideas or changes do you think could help reduce waste more effectively?

Is there anything else you would like to add about food waste management?