

# How food companies operating in Finland translate circular economy principles into business model innovation.

## **A Qualitative Multiple-Case Study of Circular Business Models in the Food System**

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# Abstract

The circular economy (CE) has emerged as a key framework for addressing sustainability challenges in the food sector, but existing literature remains conceptual or policy-focused. Limited attention has also been given to how CE principles are translated into business model innovation (BMI) at the company level, particularly within national contexts considered circular economy pioneers. This thesis addresses these gaps by examining how four Finnish food companies integrate CE principles into their business models and which factors shape this process.

By adopting a qualitative case study design and purposive sampling, the thesis analyses four food-related organisations operating in Finland: Fazer, Hesburger, K-Supermarket, and ResQ Club. Data was collected through a mix of document analysis, site observations, and semi-structured interviews. Data is analysed using Business Model Innovation (BMI) as the primary perspective, supported by Institutional Theory (IT) and the Resource-Based View (RBV).

The findings show that while all of the selected companies engage with CE principles, their levels of business model implementation vary significantly. Physically-established companies like Fazer, Hesburger, and K Supermarket, for example, will integrate circularly through step-by-step operational innovations (such as side-stream valorisation, waste-to-energy solutions, and data-driven food waste reduction) while maintaining their existing business models. In contrast, digital platform businesses like ResQ Club puts circularity at the core of its value proposition which allows for more radical business model innovation focused on surplus food distribution. The analysis further shows that institutional pressures encourage circular engagement but do not determine the extent of transformation. Instead, company-specific resources, capabilities, and strategic positioning play a more decisive role.

## Keywords

Business Model Innovation; BMI; Circular Business Model; CBM; European Union; EU; Institutional Theory; IT; Resource-Based View; RBV; United Nations; UN; United Nations Sustainable Development Goal; UNSDG; Sustainable Development Goal; SDG; Research and Development; R&D; Small and Medium Enterprises; SME

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# 1.0 Introduction

*This chapter introduces the background and relevance of the study. It outlines the CE concept, its significance within the food sector, and the specific context in Finland. The chapter also presents the problematisation, research aim and questions, purpose, and provides an overview of the theoretical perspective and methodological approach adopted in the study.*

## 1.1 Background

The global food industry is facing increasing pressure to respond to sustainability challenges, with the circular economy (CE) emerging as a key framework for reducing waste, improving resource efficiency, and supporting more sustainable consumption patterns (Kumar et al, 2023). Across the food sector as a whole (production, distribution, consumption, disposal, and recycling), the CE concept is particularly relevant due to the environmental impacts associated with food loss and waste generated across the whole supply chain (Petrović et al, 2021a). In response, recent academic studies have also shown a growing interest in how CE principles can be more operationally applied to the food sector, with a particular focus on reducing food waste, making use of by-products, and developing sustainable packaging innovations (Petrović et al, 2021).

Despite these opportunities, the transition towards a CE in the food sector remains challenging. Food companies often face high investment costs, limited infrastructure, and regulatory barriers that slow progress (Kumar et al, 2023). In addition, the successful implementation of CE requires food companies to go beyond technological solutions and embrace fundamental changes. In particular, enhanced collaboration (and compliance) needed with food producers, retailers, consumers, and policymakers is identified as an important condition for enabling circular practices (El Bilali & Sadegh Allahyari, 2018).

This thesis aims to address this research gap by examining the four food-sector companies that operate in Finland. Finland is frequently positioned as a global pioneer in food sustainability and CE development, with ambitious national strategies, policy frameworks, and public support that actively encourages a sustainable food market (Finnish Government, 2021; Ministry of Agriculture and Forestry of Finland, 2017; Sitra, 2020). Therefore, it is expected that food companies operating in Finland are to be influenced not only by their internal management, but also by external institutional and social factors to adopt more circular practices. By focusing on company-level practices across different stages of the food value chain, the study specifically seeks to provide insight into how CE principles are translated into business models and how this process is influenced by both internal capabilities and external pressures.

The study focuses on Finnish food companies to examine CE adoption in a context where national policies, strong public institutions, and societal awareness create a supportive environment. Selecting firms operating in this setting allows for analytical insights into how

companies of different sizes and roles implement circular business models under similar institutional pressures, without implying sector-wide representativeness.

This thesis builds its theoretical framework on three complementary perspectives: Business Model Innovation (BMI), Institutional Theory (IT), and the Resource-Based View (RBV). Combined, these frameworks allow for a comprehensive analysis of circular economy adoption: BMI examines how companies structure value creation, delivery, and capture; IT highlights how regulatory, normative, and cognitive pressures shape company behaviour; and RBV identifies how internal resources and capabilities enable firms to operationalise circular practices. Together, the three perspectives provide an integrated lens to understand both the internal and external determinants of circular business model innovation in the Finnish food sector.

The CE concept has gained increasing global attention as an alternative to the traditional linear “take-make-dispose” model, particularly due to growing environmental and resource-related challenges. At its core, CE aims to minimise waste and maximise resource efficiency by designing products, services, and systems that allow for materials to be used as long as possible (Geissdoerfer et al, 2017). Successfully transitioning towards a CE requires technological innovations and a redesign of business models to institutionalise circular principles such as reuse, recycling, sharing, and regeneration (Bocken et al, 2016).

CE aligns with the UN SDGs (introduced 2015), providing a global policy context for addressing environmental, social, and economic challenges by 2030 (United Nations, 2024). In the context of food systems, CE principles align closely with SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 9 (Industry, Innovation, and Infrastructure). These linkages have contributed to the growing policy relevance and social legitimacy of CE as an approach to addressing food waste and resource inefficiencies (Prokic et al, 2023).

The food sector is widely recognised as a priority area for CE transition due to high resource use, environmental impact, and food loss/waste across all stages of its supply chain (Petrović et al, 2021a). Therefore, circular strategies within the food sector often focus on reducing waste, improving resource efficiency, and maximising the use of by-products and side-streams. Examples include upcycling food waste, implementing closed-loop supply chains, redesigning packaging, and improving inventory and distribution systems to prevent surplus (Jurgilevich et al, 2016; Calvo-Porrá & Lévy-Mangin, 2020). These changes are also externally driven by adjustments such as evolving consumer preferences, stricter regulations, and the growing economic potential of waste solutions (European Commission, 2020).

Aside from operational improvements, transitioning towards a circular food system requires the adoption of circular business models. Circular business models extend value creation beyond customers to include social and environmental outcomes while maintaining economic viability (Lewandowski, 2016). Examples of this in the food sector would include different strategies such as side-streams, resource recovery, circular supply chains, as well as product

life extension. A benefit of these systems is that they allow for a longer lifecycle of a product, whereas End-Of-Life strategies focus on extending the product life as much as possible near the end. Additionally, the main goal of a side-stream circular economy is to optimise the value of, as well as increase the use of waste materials and byproducts from industrial processes within the production of a circular economy.

Despite growing interest in circular economy practices, implementing circular business models in the food sector remains complex. The sector is characterised by strict food safety regulations, perishable products, and reliance on packaging, all of which constrain the applicability of certain circular strategies, such as repair or refurbishment. As a result, circular economy implementation in food systems often takes the form of step-by-step business model innovation (driven by internal and external pressures) rather than radical transformation.

## **1.2 Problematisation**

Finland's attempts to transition to a circular economy are supported by administrative factors such as comprehensive national CE strategic programmes and innovation policies, and by normative factors such as strong societal awareness and consumer engagement in reuse and recycling practices; these combined pressures help reinforce CE adoption across public and private actors (Nylén et al, 2025; Salmi et al, 2021). However, the Finnish food industry continues to face challenges such as higher investment costs and resistance to change, in translating CE principles into concrete and consistent business practices. Some Finnish food companies actively integrate circularity into their operations and business models, while others engage only to a limited or minimally-expected extent (Sitra, 2016). This variation raises questions as to how circularity is operationalised at the company level, even within a highly supportive institutional environment.

Moreover, while institutional frameworks (such as regulations, industry standards, and societal expectations) are often assumed to drive CE adoption, companies operating within the same institutional context respond differently to these pressures. This suggests that institutional pressures alone cannot fully explain CE implementation. Instead, company-specific resources and capabilities may play a more decisive role in shaping whether and how food companies engage in circular BMI (European Environment Agency [EEA], 2021).

One area where this disconnect is apparent is in the management of food side-streams and by-products. Food producers often focus on the safety and quality of their items, ensuring that they are fit for consumption and sale. Some examples of this include oat hulls, vegetable peels, food trimmings, which are often disposed of despite the opportunity to be used and turned into valuable products (Sustainable Upcycling of Fisheries and Aquaculture Wastes Using Cold-Adapted Proteases, 2021). Although technological advancements such as fermentation and bio-refining processes on cereal products, have made it increasingly feasible to give food waste and by-products commercial value, their utilisation within the Finnish

food industry remains limited beyond pilot initiatives or isolated cases (Mourad, 2016). This low level of adoption either indicates potential economic, organisational, or institutional barriers that may constrain a company's ability to move beyond core products and fully integrate circular solutions within their business models.

In addition, assessing CE performance in the food sector presents methodological challenges. This is shown in the context of numerous commonly used CE indicators not being well suited for the characteristics of food systems, such as perishability, nutrient cycles, and consumer-driven food loss (Jurgilevich et al. 2016). Due to this lack of appropriate measurement tools, companies often struggle to assess progress, identify operational trade-offs, and communicate circular performance in a consistent and comparable manner. For example, commonly used circular economy indicators tend to prioritise material recirculation rates and waste volumes, while overlooking food-specific aspects such as nutrient retention, food quality loss, and consumer-driven waste, thereby limiting their practical applicability in the food sector (Saidani et al, 2019).

Furthermore, the adoption of circular economy (CE) practices in the food sector is complicated by fragmented value chains and misaligned incentives among producers, processors, retailers, and consumers, as circular solutions often require shared investments and coordinated action across multiple stages of the value chain rather than isolated firm-level improvements (Korhonen et al, 2018; Rizos et al, 2017). Effective circular solutions therefore depend on close coordination among stakeholders, yet differing economic priorities and risk perceptions can undermine joint efforts to close material loops or extend product life cycles. For example, process innovations at the production level may increase costs or prices in ways that are not supported by retailer strategies or consumer demand, limiting their practical adoption (Rizos et al, 2017). These coordination challenges are particularly pronounced in Finland's decentralised food system, where small and medium-sized enterprises play a significant role and where collaborative governance structures remain limited (Hartikainen et al, 2014).

Consumer acceptance represents a critical yet underexplored dimension of CE implementation in food systems, as CE often prioritises technological efficiency over behavioural responses. Products that have been derived from surplus materials are likely to face reputational challenges related to perceived quality, safety, and naturalness, potentially limiting market uptake (Aschemann-Witzel et al. 2015). Without consumer trust and acceptance, even well-designed circular business models may struggle to achieve long-term viability (Elzinga et al, 2020). In addition, certain consumer groups continue to prefer traditional or specific food production practices due to health-related concerns such as allergies and food sensitivities, religious dietary requirements, or lifestyle choices including veganism (FAO, 2019; EFSA, 2021; Ruby, 2012). The adoption of new circular business models may not always align with these preferences, potentially limiting consumer acceptance and creating additional challenges for companies seeking to implement circular solutions.

These challenges highlight a significant research gap: despite Finland's strong CE ambitions, it remains unclear how institutional pressures (IT), firm-specific resources (RBV), and business model adaptation strategies (BMI) interact to shape the adoption of circular practices at the company level. Investigating this interaction provides analytical insight into why companies operating in the same supportive environment pursue differing approaches to circular business model innovation, and how regulatory, normative, and resource-based factors jointly enable or constrain the operationalisation of circular solutions (Barney, 1991; DiMaggio & Powell, 1983; Bocken et al, 2014).

### **1.3 Research Aim**

The overall aim of this thesis is to examine how circular economy (CE) principles are translated into business models within the Finnish food industry, and to identify the key internal and external factors that influence this transition towards sustainable food systems.

To achieve this aim, the thesis seeks to:

Examine the types of circular business model practices currently adopted by food companies in Finland.

Analyse the practical challenges and barriers that companies encounter when applying CE principles, considering how internal resources (RBV), institutional pressures (IT), and business model adaptation strategies (BMI)

Identify factors and limitations related to business model-level circular economy implementation, including gaps highlighted in existing literature on the food sector.

### **1.4 Research Question**

How do Finnish food companies translate circular economy (CE) principles into business model innovation, and what factors influence this process?

### **1.5 Purpose**

The purpose of this thesis is to contribute to a deeper understanding of how CE principles are operationalised within the Finnish food industry at the company level. By examining business practices across different stages of the food value chain, the study aims to generate empirical insights into how circular principles are translated into BMI, as well as the organisational and contextual factors that influence this process. This research comes at an essential time, as the food industry plays a major role in contributing towards environmental impacts, as well as being a large sector which is able to aid in the European Union (EU) reaching their sustainability goals (European Commission, 2020). The findings aim to contribute to the academic literature on CE and BMI, while also offering relevant insights for policymakers and practitioners seeking to advance circular practices in food systems within national contexts.

## 2.0 Literature Review

*This chapter reviews past academic research on CE and its application in business contexts, with a particular focus on the food sector. It also discusses CE principles, circular business models, and identifies key drivers, barriers, and gaps in existing academic literature that this thesis aims to address.*

### 2.1 Circular Economy and the Food Sector

CE has emerged as a central concept within contemporary sustainability discourse, aiming to replace the traditional linear “take-make-dispose” model with systems that are regenerative by design and oriented toward minimising waste while maximising resource efficiency. Instead of focusing solely on end-of-life product solutions, CE seeks to maintain the value of products, materials, and resources for as long as possible through strategies such as reuse, repair, recycling, refurbishment, remanufacturing, and regeneration (Garcés-Ayerbe et al. 2022). These principles have increasingly been incorporated into corporate sustainability strategies and policy frameworks as a means of supporting long-term economic resilience and environmental protection (Circle Economy, 2021).

Despite its broad appeal, the CE concept has also attracted global scrutiny. At the 2017 Circularity Award ceremony, Alexander Stubb (then Vice-President and now President of the Republic of Finland) described CE as a “win-win-win”: delivering economic benefits through growth stimulation and the potential creation of up to two million jobs by 2030, environmental gains through reduced material use and lower carbon footprints, and business advantages in the form of cost savings and new market opportunities (European Investment Bank, 2017). However, scholars caution that many CE initiatives remain narrowly focused on technical fixes, such as recycling or material recovery, without addressing broader issues like overconsumption, rebound effects, and entrenched linear production models (Korhonen et al. 2018). As a result, CE risks being implemented incrementally instead of serving as a genuine transformative model, or viewed as a form of short-term greenwashing.

In addition, businesses that promote and invest in R&D innovation programmes relating to the circular economy receive tax incentives from the Finnish government as part of their Sustainable Taxation Roadmap (Ministry of Environment Resolution, 2021). They benefit from special incentives for waste tax, land tax, electricity tax category for the recycling industry.

The relevance of CE is quite pronounced in the food sector due to its high resource intensity, reliance on biological materials, and ability to generate large amounts of organic food waste across the supply chain. Food systems are characterised by high material production, perishability, strict health and safety regulations, and complex logistical systems, which both constrain and shape the applicability of circular strategies (Gaitán et al, 2019). While business approaches such as repair and refurbishment seem largely impractical to food

systems, waste prevention, by-product valorisation, redistribution, and packaging redesign emerge as more viable circular solutions (Jurgilevich et al, 2016; Principato et al, 2019).

Packaging waste also remains a major concern in this context, with the average European generating approximately 190 kg of packaging waste per year (European Environment Agency, 2021). This has intensified calls for packaging innovations that enable reuse, recyclability, or material reduction without compromising on food safety. At the same time, Europe's raw material dependency and growing consumption levels (reaching 15 tonnes per capita in 2022) further reinforce the importance of circular resource management in the food sector (European Parliament, 2023).

Finland is able to boost their circularity transition, it was also noted that the circular material use rate in the EU is at an average of 11.8% , whereas, Finland has dropped to 2.4% in 2023 (European Commission, 2009). Resource productivity measures the total amount of materials directly used by an economy in relation to GDP (European Environment Agency, 2025). Comparing the use by Finland in 2023, where they generated EUR 1.17 per kg of material, compared to the EU average of EUR 2.74, making them the country with the third lowest use of circular materials in the EU. Their material footprint, an indicator for raw material consumption, is the highest in the EU at 46.6 tonnes per capita in 2023 (EU average: 14 tonnes per capita)

The CE concept shows potential to help countries and businesses reduce their environmental impacts and improve their resource efficiency, but its practical implementation in food systems remains uneven. Regulatory complexity, insufficient sector-specific frameworks, limited infrastructure for by-product utilisation, and inconsistent consumer engagement continue to hinder widespread adoption (European Environment Agency, 2021; Schröder et al, 2019). These challenges highlight the academic need for a more targeted understanding of how circular principles are operationalised within food businesses, rather than assessed solely at a policy or system level.

Additionally, the Finnish Food and Drink Industries' Federation (ETL – Confederation of Finnish Industries, n.d.) represents food companies in labour market and industrial policy issues. Their Material Efficiency Commitment (2019–2021), (2022-2026) focussed on material efficiency that can lead to cost savings and reduce environmental impact, including food waste and loss. This commitment aims to reduce natural resource consumption while supporting profitability (Finnish Food and Drink Industries' Federation [ETL], 2022).

## **2.2 Circular Business Models and Business Model Innovation**

An increasing amount of academic studies have examined circular business models (CBMs) as a mechanism for translating CE principles into operational practice. CBMs differ from traditional business models by seeking to create, deliver, and capture value while also reducing resource inputs and waste outputs. Examples include product life extension,

resource recovery systems, circular supply chains, and product-as-a-service models (De Angelis, R, 2021).

However, current research gaps identified by scholars include a lack of clarity and consistency in how CBMs are defined and categorised across studies (Geissdoerfer et al, 2017). Furthermore, most of the existing research remains fairly conceptual and offers little empirical evidence on how CBMs function in practice or how different circular strategies are combined within a single business model (De Angelis, R, 2022). These gaps persist in the food sector, where existing linear systems already meet core production expectations related to food availability, safety, and efficiency. Therefore, the introduction of new circular strategies is often perceived by companies as posing financial and operational risks (given the perishability of food products and strict regulatory requirements), thereby complicating the integration of circular practices into core business models (United Nations Environment Programme Finance Initiative, 2020).

Current academic studies agree that business model innovation (BMI) offers a useful lens for examining how companies respond to CE pressures by reconfiguring their value propositions, value creation activities, and value capture mechanisms (Teece, 2010; Geissdoerfer et al, 2017). Instead of viewing circularity as a set of isolated practices across the value chain, BMI encourages systemic change at the business model level, and this enables companies to embed circular practices more deeply into their daily operations (Ritter & Lettl, 2021). This scarcity highlights the need for context-specific, company-level research that examines how food businesses integrate multiple circular strategies within their business models, addressing both operational and strategic challenges.

## **2.3 Drivers and Barriers of Adopting Circular Economy in Food Systems**

Existing literature suggests that the rate of CE adoption is influenced by external institutional pressures and internal company capabilities. External drivers include regulatory frameworks, policy incentives, industry standards, and societal expectations (Korhonen et al, 2018). In the European context, sustainability policies and circular economy strategies have played a significant role in legitimising CE initiatives within the food sector. External institutional pressures, such as regulatory frameworks and policy incentives, interact with firm-specific resources such as technological expertise and networks to influence CE adoption, emphasising the value of combining RBV and IT perspectives in this study.

However, despite the growing body of European-focused research, the literature remains limited in its ability to explain how CE adoption varies across different national and institutional contexts. While Europe and other high-income regions have received substantial attention, comparatively little is known about how cultural norms, regulatory structures, and economic conditions interact to shape CE implementation at the country level (Korhonen et al, 2018). Comparative and context-specific studies, particularly in high-performing CE

countries such as Finland, are therefore essential to deepen understanding of how institutional environments influence firm-level adoption. An additional challenge lies in language and accessibility, as many national policies, regulatory documents, and empirical studies are published in Finnish or Swedish, which may limit their visibility in international English-language research. This further contributes to the underrepresentation of context-specific insights from Finland in the broader CE literature.

At the internal company level, existing resources such as technological expertise, organisational culture, and innovation skills strongly influence a company's ability to respond to CE pressures. In this context, scholars acknowledge that companies with greater access to knowledge, networks, and capital are better positioned to experiment with applying circular solutions (Kirchherr et al, 2017). Furthermore, current research also indicates that over 80% of a product's environmental footprint is dependent on its design phase (European Environment Agency, 2021), underscoring the strategic importance of internal design capabilities and decision-making processes. These studies highlight the relevance of examining CE adoption further from a resource-based perspective.

Additional barriers can arise from fragmented value chains and misaligned incentives between producers, processors, retailers, and consumers. Current studies confirm that effective circular solutions often require coordination across these actors, but differing priorities and economic interests can undermine collaborative efforts (Korhonen et al, 2018). Innovations such as food waste valorisation, improved logistics, packaging redesign, and redistribution schemes have been identified as effective measures to reduce inefficiencies across the supply chain (Tamasiga et al. 2022), but each of these innovations create new opportunities and burdens for different actors. For example, food waste valorisation may give additional revenue to producers and processors, but requires upfront investment and technological solutions that smaller companies may lack. Improved logistics can also reduce spoilage for retailers and distributors, but may shift costs upstream through stricter delivery requirements placed on producers. Furthermore, consumer acceptance further complicates implementation, as products derived from surplus materials may face reputational challenges related to perceived quality or safety (Aschemann-Witzel et al, 2015). Challenges such as fragmented value chains, misaligned incentives, and variable consumer acceptance illustrate why CE implementation cannot be explained by institutional pressures alone, reinforcing the importance of examining internal capabilities and business model adaptation.

In terms of enablers, digital technologies can help improve traceability, transparency, and operational efficiency. Despite this opportunity, the literature shows that there is indeed a lack of sector-specific indicators and assessment tools capable of capturing the unique characteristics of food systems, such as nutrient cycles and food loss at the consumer level (Antikainen et al. 2018).

## 2.4 Gaps in the Literature

Existing gaps in empirical studies, context-specific research, and SME inclusion demonstrate the need for a theoretical framework that integrates BMI, IT, and RBV to capture both internal and external determinants of circular business model innovation in the Finnish food sector. While growing scholarly attention to CE and CBMs have been identified, some important gaps remain. Firstly, empirical research at the company level is limited, particularly at the food sector, where studies often rely on conceptual frameworks or sector-wide analysis instead of detailed examinations of organisational practices (Manninen et al. 2018; De Angelis, R, 2022). As a result of this, there is insufficient understanding of which CE strategies are the most effective in real-world and true business settings, how they are able to be integrated into daily operations, and what outcomes they are able to produce in terms of environmental, economic, and social impact. Furthermore, most assessment tools used in CE are designed for general industries and are not able to account for the unique characteristics that are found in sectors related to food production, food distribution, and retail (Calvo-Porrall & Lévy-Mangin, 2020; Tanveer et al, 2021). Without these specific metrics, this makes it difficult to evaluate any progress, compare outcomes across firms, or even to identify which practices are best when applied to the food industry (Genovese, Lopolito, & Ioppi, 2021). Addressing these gaps through the combined lens of Business Model Innovation, Institutional Theory, and the Resource-Based View enables a comprehensive understanding of how internal capabilities, external pressures, and business model adaptation collectively shape CE adoption in food companies.

Secondly, existing research provides limited insight into how CE principles are systematically integrated into, rather than being implemented as isolated or incremental operational initiatives. This gap is particularly significant, as embedding CE within business models requires fundamental changes to firms' value propositions, value creation processes, and value capture mechanisms, rather than the adoption of standalone sustainability practices (Geissdoerfer et al, 2017). Although CE is frequently promoted as a solution for sustainable growth, its application within the food sector requires context-sensitive approaches due to the sector's reliance on biological materials, the perishability of products, and the complexity of food supply chains. Existing research agrees that these characteristics require unique strategies that balance environmental objectives with economic viability and food safety requirements (Jurgilevich et al. 2016; Calvo-Porrall & Lévy-Mangin, 2020). While the integration of circular principles with supportive policy frameworks, technological innovation, and consumer engagement can facilitate progress toward more regenerative food systems, significant research and practical efforts remain necessary to bridge the gap between CE's theoretical potential and its operational implementation (Cahyadi et al, 2024). In this context, addressing this gap is essential to ensure that circularity can function as a genuinely transformative model for sustainable development within food-related business contexts.

Third, small and medium-sized enterprises (SMEs), which play a major role in the food sector, remain underrepresented in existing CE research. Many existing studies focus on larger corporations, overlooking the distinct constraints and innovation potential of smaller

firms (Kirchherr et al, 2017). By further investigating SMEs, the information can be highly significant to countries that have high-performing CE such as Finland, where smaller firms are able to act as innovators and even early adopters (Tura et al, 2019). This is particularly relevant as SMEs generally lack multiple important factors that larger companies use in circular practices, this includes relations, available technology, and available monetary value. Investigating SMEs in Finland provides insight into how smaller firms with limited resources leverage institutional pressures and innovative practices to implement circular strategies, offering lessons for broader CE adoption in similar contexts

Fourth, current studies seem to insufficiently explore geographical and contextual factors. Although high-income European countries have received attention, there is limited company-level research that examines CE implementation within national contexts that are considered frontrunners, such as Finland. Much of the existing research relies on cross-country comparisons or aggregated analyses, which tend to overlook how national regulatory frameworks, cultural norms, market structures, and institutional arrangements shape firm behaviour (Korhonen et al, 2018). In the Finnish context, CE development has been strongly supported by national strategies, public funding mechanisms, and innovation agencies such as Sitra, positioning Finland as a global leader in circular economy policy (Sitra, 2016). However, relatively little empirical research has examined how these favourable institutional conditions translate into concrete business model innovation at the firm level. Studying Finnish firms allows insights into how companies leverage favourable institutional conditions to implement circular business models, without implying sector-wide representativeness. As a result, it remains unclear whether and how companies operating within advanced CE policy environments are able to leverage these contextual advantages in practice (Antikainen et al, 2018). Addressing this gap is essential to better understand the relationship between national CE leadership and firm-level implementation outcomes.

Finally, longitudinal studies that examine the long-term impacts of CE strategies on business performance, environmental outcomes, and consumer behaviour remain scarce. As a result, questions regarding scalability, durability, and sustained competitive advantage remain largely unanswered. Most research has only been able to capture short-term initiatives, pilot projects, or cross-sectional studies that provide partial insights into the effectiveness of circular strategies over time (Antikainen et al, 2018; De Angelis et al, 2018). This gap is particularly significant given that the successful implementation of CE often requires substantial organisational learning, investment, and gradual reconfiguration of business models. Without longitudinal evidence, it is difficult to assess whether early circular innovations lead to sustained environmental improvements or long-term economic benefits, or whether they remain isolated experiments with limited scalability (Geissdoerfer et al, 2017). The dominance of short-term studies can partly be explained by the relatively recent emergence of CE as a business paradigm; however, addressing this gap is essential to understanding the long-term viability and competitive implications of circular business model innovation. The absence of longitudinal studies limits understanding of the sustainability and scalability of circular business models, emphasising the importance of research that considers both short-term innovation and long-term operationalisation

## 2.5 Summary

In summary, existing studies recognise the growing relevance of CE as a framework for addressing sustainability challenges within the food sector, particularly in relation to resource efficiency, food waste reduction, and environmental impact mitigation. While CE principles are increasingly promoted through policy initiatives and corporate sustainability agendas, existing research suggests that their implementation within food systems remains uneven and highly context dependent, shaped by sector-specific characteristics such as perishability, food safety requirements, and complex supply chains.

The literature review further reveals that much of the existing CE literature focuses on conceptual frameworks, technological solutions, or system-level analyses, offering limited insight into how circular economy principles are translated into BMIs at the company level. In particular, research on CBMs remains fragmented, with insufficient empirical evidence on how companies can reconfigure their value propositions, value creation processes, and value capture mechanisms to embed circular practices within core business operations.

Important research gaps identified in relation to the research aim of this thesis include a lack of company-level empirical studies in the food sector, limited attention to how multiple circular strategies are combined within business models, and an underrepresentation of SMEs. In addition, while Europe is often characterised as a leader in CE development, there is limited context-specific research examining how national institutional environments in CE frontrunner countries (such as Finland) influence companies' abilities to adopt and implement circular BMI. Short-term and cross-sectional studies further limit understanding of the long-term viability, scalability, and sustained competitive advantage associated with CE. In response to these gaps, this thesis aims to adopt a company-level, context-sensitive approach to investigate how Finnish food companies translate circular economy principles into business model innovation, and which internal and external factors influence this process.

Overall, the literature highlights uneven CE adoption in food systems, limited company-level studies, and insufficient exploration of how internal resources, institutional pressures, and business model innovation interact underscoring the need for this thesis to adopt a context-sensitive, company-focused approach. Taken together, these gaps underscore the need for research that integrates internal resources, institutional pressures, and business model innovation, rather than treating these factors independently, to understand the complex drivers of CE adoption.

## 3.0 Theoretical Framework

*This chapter outlines the research design, theoretical foundation, and analytical frameworks employed in this study. All methodological and theoretical choices are justified according to established academic standards. The chapter uses formal, third-person academic language to ensure Master's-level rigour and systematically links the research approach to the study objectives.*

### 3.1 Integrated Theoretical Framework

The study draws on multiple theoretical perspectives to analyse how CE practices are translated into the business models of Finnish food companies. The transition from linear to circular systems is a complex and multi-dimensional process that involves not only technological and operational change, but also regulatory pressures, normative expectations, and institutional factors. As highlighted in the literature review, circularity cannot be adequately explained through a single theoretical lens (particularly in highly regulated and resource-intensive sectors such as food).

Therefore, the study adopts an integrated theoretical framework that combines Business Model Innovation (BMI), as the primary lens, supported by Institutional Theory (IT), and Resource-Based View (RBV) for a more appropriate analysis. By applying these theories together, the study aims to examine whether, how, and why CE principles are incorporated into firm-level business models.

BMI is used to analyse how circular principles are embedded into the company's value propositions, value creation, and value capture mechanisms. IT explains the external pressures (such as regulations, societal expectations, and industry norms) that encourage companies to engage with circular practices. RBV complements BMI and IT by explaining company-level variations, and highlighting how differences in resources and capabilities shape the depth and form of circular business model innovation.

The three theories have distinct limitations: BMI does not explain why companies are pressured to make changes, institutional theory does not sufficiently account for variations between companies, and RBV does not capture the broader regulatory and normative environment. When combined, however, they provide a stronger theoretical framework to understand CE adoption as the outcome of institutional pressures translated through business models and mediated by firm-specific resources. BMI examines how circular principles are operationalised within value propositions, value creation, and value capture. Institutional theory explains external pressures that influence adoption, such as regulations, societal expectations, and industry norms. RBV accounts for differences in firm-specific resources and capabilities that determine the extent and form of circular practices. By integrating these perspectives, the study captures both the internal and external determinants of circular business model innovation, ensuring a more complete understanding than any single theory

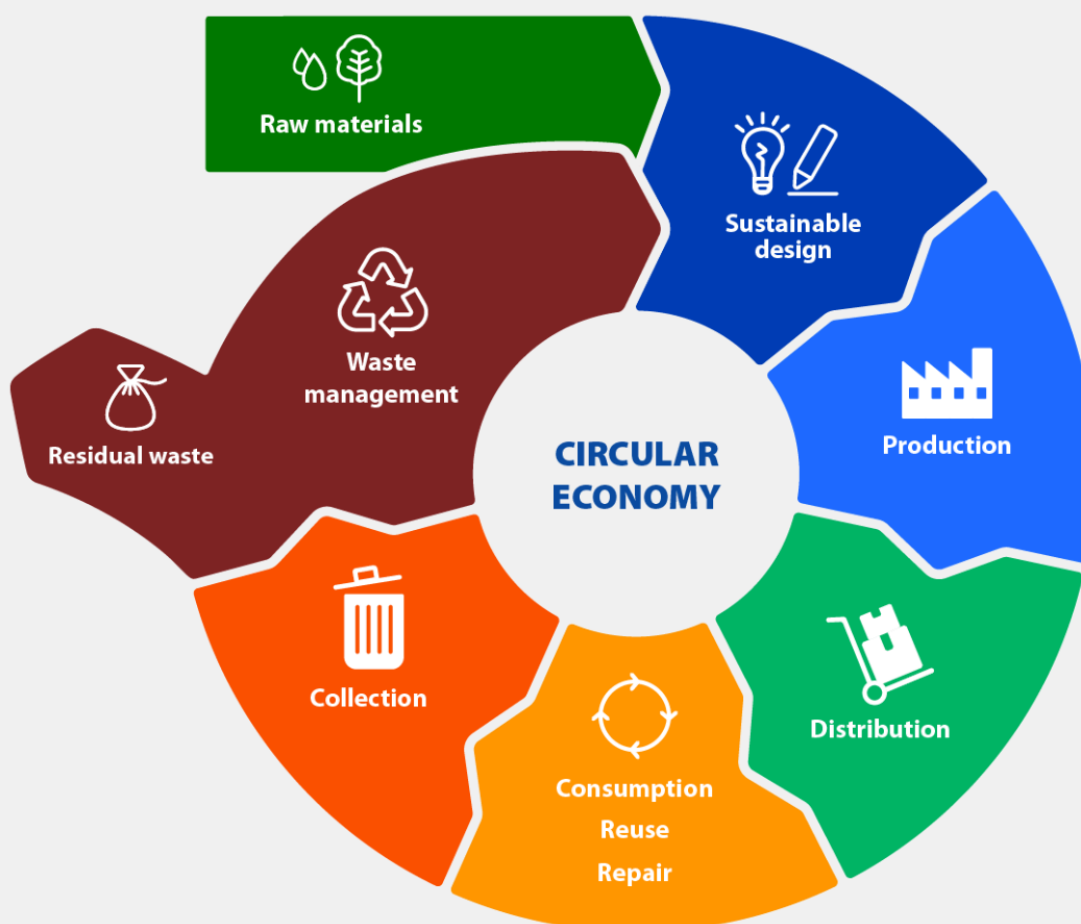
could provide. This integration also directly informs the design of interview questions, case selection, and coding procedures, aligning methodology with the theoretical framework.

### **3.2 Circular Economy as the Conceptual Foundation**

CE represents a systemic alternative to the traditional linear “take-make-dispose” model, which is characterised by one-way material flows and increasing resource depletion (Ellen MacArthur Foundation, 2013). In contrast, CE seeks to retain the value of products, materials, and resources for as long as possible through strategies such as reuse, recycling, regeneration, and recovery. CE therefore aims to create a system where products and resources are used for as long as possible, ideally never meeting the disposal phase (Ellen MacArthur Foundation 2013). This puts a particular highlight on creating products that are built to last, are repairable, and recyclable, as a way of cutting down on waste and the requirement of constantly extracting raw materials (Geissdoerfer et al, 2017). By moving away from a linear approach and towards a circular approach, businesses are able to enhance their sustainability, optimise their resource use, and contribute towards a global economy that is more sustainable (Lacy & Rutqvist, 2015). Such a transition is not only necessary for the environment, however, also an opportunity for innovation and economic growth (Bocken et al, 2014).

**Figure 1:** Example of the Circular Economy Model.

## The circular economy model: less raw material, less waste, fewer emissions



Source: European Parliament Research Service



Figure 1 illustrates the circular economy as a closed-loop system, highlighting strategies such as reuse, recycling, and resource recovery relevant to the food sector (European Parliament, 2023). Contrary to the traditional “take-make-dispose” model, where an item is only used for its purpose and then brought to its end, the circular economy focuses on sustainable design, extended use through repair and reuse, and recovering value from items that are normally considered to be waste.

Figure 1 is particularly relevant to the food sector, where high levels of resource use, perishable products, and extensive packaging create significant environmental pressures (Jurgilevich et al, 2016). Circular strategies in this context typically focus on food waste prevention, side-stream valorisation, improved resource efficiency, and nutrient or energy recovery (Calvo-Porrá & Lévy-Mangin, 2020). However, due to biological constraints and food safety regulations, the application of CE principles require context-specific and sector-sensitive approaches rather than generic solutions developed for non-perishable goods industries.

As circular economy practices gain more attention in businesses and daily life, some common examples that are found in the food industry include product manufacturing, package design, overall life extension, as well as material sourcing. This is extremely beneficial due to the high volume of waste, alongside rising energy consumption, and depletion of natural resources that are generated from the food industry. These problems have even become of concern for scientists across the globe due to the large volume (Rajković et al, 2020). Due to the vast amount of resource consumption stemming from all aspects and processes of the food industry, as well as the substantial amount of waste generated by the food industry, it is one of the best sectors to work towards achieving a circular economy (Rabbi & Amin, 2024).

Finland provides a particularly relevant context for examining circular economy implementation. The country is widely recognised as a global frontrunner in CE policy, having launched the world's first national circular economy roadmap and invested heavily in innovation funding, public-private partnerships, and sustainability governance (Sitra, 2016). Within this context, the food sector plays a critical role due to its environmental footprint and central position in everyday consumption. This study therefore uses CE as the conceptual foundation for analysing how Finnish food companies operationalise circularity through business model innovation. The Finnish food sector provides a relevant empirical context for analysing circular economy implementation due to its high resource intensity, significant food waste generation, and reliance on packaging to ensure food safety across the value chain. Circular economy initiatives in the food sector typically focus on reducing food waste, valorising by-products through side-stream utilisation, improving resource efficiency, and designing systems for nutrient recovery and recycling (Summer, 2017). In practice, these strategies include surplus food redistribution, conversion of organic waste into animal feed or bioenergy, and the development of closed-loop supply chains that minimise environmental impacts while retaining product value for as long as possible.

In this study, these practices are examined through three complementary analytical lenses: business model innovation, institutional theory, and the resource-based view. In addition, the R-framework, resource recovery concepts, and side-stream utilisation models are applied as operational tools to assess how circular economy principles are embedded within firms' value propositions, value creation processes, and value capture mechanisms.

The transition towards a circular economy has been able to present significant opportunities in terms of enhancing sustainability in the business sector. In a country such as Finland,

where CE principle integration is on the rise, the food industry plays a major role in the shift towards CE. This is due to the high resource rate and environmental footprint left by the sector. By deeply focusing on this sector, the research aims to provide valuable insights which may potentially support further development of the industry-specific business models, namely in Finland and globally.

Additionally, there are beneficial factors that coincide with the CE and link deeply with the theories mentioned above, particularly the 9R framework with RBV, as well as the UNSDGs which is an important framework being used by the selected firms to drive their CE motivation.

This chapter also outlines and explains the analytical models and extra factors which are applied in this study, particularly the R-framework (e.g. Refuse, Reduce, Reuse, Recycle), which serves as a tool to assess and compare the companies' circular strategies. The R-framework provides a structured hierarchy of circular actions, with higher-level strategies such as refusing and reducing consumption generally having greater sustainability impacts than recycling (Potting et al. 2017). In addition, the concepts of side-streams and resource recovery are applied to evaluate how businesses utilise waste or by-products as inputs for new processes and recover value from materials that would otherwise be lost. Side-streams allow companies to reduce waste while creating additional value from materials such as food by-products, whereas resource recovery focuses on regaining energy, nutrients, or raw materials from waste (Kirchherr et al. 2017). Together, these approaches provide the foundation for examining how each business case aligns with CE principles and contributes to the United Nations Sustainable Development Goals (UNSDGs). This combined framework supports a structured analysis of the companies' practices, highlighting both their strengths and limitations in advancing sustainability.

While the UN SDGs are not applied as an analytical framework in this study, they are acknowledged as a broader policy and normative backdrop that has contributed to the institutionalisation and societal relevance of circular economy practices within the food sector, particularly with Goal 12, which focuses on responsible consumption and production, alongside Goal 13 on climate action (United Nations, 2015). In addition, the R-framework, sidestream utilisation, and resource recovery are not treated as standalone theoretical lenses in this thesis, but are used as descriptive concepts that help illustrate how circular economy practices are operationalised within firms and interpreted through the lenses of institutional theory, business model innovation, and the resource-based view. These descriptive contexts form an analytical foundation which can be used to evaluate the extent of which the four selected companies are able to integrate CE principles into CBMs, which offers a structured approach to evaluate the true degree of circularity in business operations (Potting et al. 2017).

Explanations of circular economy principles, Finnish policy context, and sector-specific characteristics are provided in the literature review (Chapter 2) and are referenced here without repetition. This approach ensures Chapter 3 focuses on the theoretical and analytical frameworks guiding the study, rather than repeating background information.

### **3.3 Business Model Innovation (BMI)**

Business Model Innovation (BMI) refers to the changes in how firms create, deliver, and are able to capture value (Teece, 2010). Rather than focusing solely on products or technologies, BMI examines how an organisation operates and sustains itself economically. A widely adopted conceptual framework describes business models as three core components: value proposition, value creation and delivery, and value capture (Osterwalder & Pigneur, 2010).

BMI is particularly applicable in sustainability research because many environmental challenges cannot be addressed by efficiency improvements alone. Instead, BMI requires firms to rethink how value is generated and for whom the value is generated. In the context of CE, BMI provides a mechanism for translating abstract sustainability principles into concrete organisational practices (Bocken et al, 2016). Circular Business Models aim to disconnect the value creation from their resource consumption, which is fulfilled by extending product lifecycles, utilising waste as input, and reducing environmental impact (Bocken et al, 2016). As a substitute for treating the CE initiatives as detached operational improvements, a business model perspective allows for a deeper analysis of how circularity is able to reshape the core logic of a firm. Due to this, BMI is used as an advantageous analytical framework when examining how companies are able to integrate CE principles into their day-to-day activities.

Prior research suggests that firms vary in their approach to innovating their business models in response to sustainability challenges. Established firms generally pursue additional business model innovation, embedding circular practices within already existing structures, while newer or more agile firms may develop business models that are circular by design (Geissdoerfer et al, 2017). This distinction is exceptionally relevant when firms in the food sector are analysed, particularly where legacy systems, regulatory constraints, as well as supply changes influence the scope of the business model change. In this thesis, BMI works as a structured lens to examine how CE principles are reflected in value propositions, value creation services, as well as value capture mechanisms across different Finnish food companies.

### **3.4 Institutional Theory (IT)**

Institutional theory (IT) explains how organisational behaviour is shaped by regulatory frameworks, social norms, and shared beliefs that define what is considered legitimate or appropriate within a given context (Scott, 2014). Rather than assuming purely efficiency-driven decision-making, IT highlights the role of legitimacy and conformity in shaping firm behaviour.

When applied to CE, IT helps to explain why companies engage with CE practices even when immediate economic benefits are uncertain. In Finland, strong policy commitments, public discourse, and societal expectations create significant institutional pressures for companies to demonstrate sustainability alignment, particularly in resource-intensive sectors

like food (Eriksson-Zetterquist et al, 2020). These institutional conditions encourage firms to demonstrate alignment with CE goals, regardless of whether implementation poses practical challenges.

However, institutional pressures do not guarantee deep transformation. Firms may respond symbolically, adopting visible but limited circular practices to signal compliance (DiMaggio & Powell, 1983). This limitation makes IT particularly valuable when combined with RBV, as it explains the direction of change but not its extent.

### **3.5 Resource-Based View**

Resource-Based View (RBV) explains firm behaviour and performance by focusing on internal resources and capabilities that are valuable, rare, hard to imitate, and organisationally embedded (Barney, 1991). These resources may be tangible, such as infrastructure and capital, or intangible, such as knowledge, routines, or relationships.

In connection with circular economy adoption, RBV explains why firms facing similar institutional pressures respond differently. Implementing circular business models often requires substantial investments, technological expertise, and organisational flexibility. Companies with higher resources are therefore better positioned to invest in more advanced or systemic circular innovations (Eriksson-Zetterquist et al, 2020).

When combined with IT, RBV enables a closer analysis of how external pressures are filtered through company-specific capabilities. Even if the rules and expectations are the same for everyone, some businesses are still better equipped than others to respond to and adapt. By placing the focus on what makes each company unique, including its people, skills, and resources, this perspective shows how internal strengths and weaknesses influence how well a business can put circular economy ideas into practice. In this thesis, the researcher uses the RBV alongside institutional theory to show how the specific resources and abilities of Finnish food companies can help or hinder their efforts to innovate and become more circular.

### **3.6 Complementary Analytical Frameworks**

To implement the three theoretical perspectives (BMI, IT, and RBV), this study applies a set of analytical frameworks to compare CE implementation across the cases. Specifically, the 9R framework, together with side-stream utilisation and resource recovery, is used to assess how CE principles are translated into business model practices. These frameworks are then linked to the United Nations Sustainable Development Goals (UN SDGs), which provide an internationally recognised benchmark for evaluating sustainability outcomes.

The 9R framework (Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, and Recover) offers a structural understanding of circular strategies. For example, actions like refuse and reduction of resources result in greater sustainability benefits

when compared to end-of-life solutions like recycling or energy recovery (Potting et al, 2017). This supports the analysis of how deeply circularity is embedded within firms' business models, instead of just identifying the presence of isolated circular initiatives.

From a sustainability perspective, the 9R framework aligns mostly with UN SDG 12 (Responsible Consumption and Production), which calls for waste prevention, resource efficiency, and sustainable management of natural resources (United Nations, 2015). Strategies such as food waste reduction, surplus redistribution, and packaging redesign contribute directly to SDG 12 by extending product lifecycles and minimising resource losses across the food value chain.

Furthermore, side-stream utilisation is applied as an analytical concept to examine how companies repurpose by-products and secondary outputs from food production processes. Side-stream strategies enable firms to convert materials that would otherwise be treated as waste into valuable inputs for new products or processes, thereby improving resource efficiency and reducing environmental burdens (Kirchherr et al, 2017). This approach not only supports SDG 12, but also contributes to SDG 9 (Industry, Innovation and Infrastructure) by encouraging process innovation, new product development, and the creation of circular value chains.

Similarly, resource recovery focuses on extracting energy, nutrients, or materials from waste streams, such as converting food waste into biogas or fertiliser. While positioned lower in the circular hierarchy, resource recovery remains an important strategy in the food sector due to the biological and perishable nature of many inputs. These practices contribute to SDG 13 (Climate Action) by reducing methane emissions from landfills and supporting renewable energy generation, while also reinforcing SDG 12 through improved waste management (Tonini et al, 2018).

Taken together, the 9R framework, side-stream utilisation, and resource recovery (mapped against relevant SDGs) improves the analytical lens for evaluating circular business model innovation in the Finnish food industry. This combined framework allows the study to assess not only whether circular economy practices are adopted, but also how they are embedded within business models and to what extent they contribute to broader sustainability objectives. As such, it directly supports the study's research aim and research questions by linking firm-level business model choices to both circular economy theory and global sustainability goals.

## **4.0 Methodology**

*This chapter outlines the research design and methodological approach of the study. It describes the qualitative case study strategy and the selection of four food companies in Finland operating at different stages of the food value chain. It details the qualitative data collection methods employed, including interviews, observations, and secondary data sources. Furthermore, the chapter explains the analytical procedures used to examine and compare the cases in line with the theoretical framework.*

### **4.1 Research Approach**

This study adopts a primarily inductive research approach, beginning with empirical observations of circular economy practices within Finnish food companies and progressing toward the identification of patterns, themes, and theoretical insights. Inductive reasoning is particularly appropriate for exploratory research in emerging fields, such as circular economy implementation at the business model level, where existing empirical evidence remains limited (Bryman, 2016).

While the research is primarily inductive, it employs abductive reasoning to iteratively compare empirical findings with existing theory (Timmermans & Tavory, 2012). This approach enables interpretation of unexpected observations and refinement of analytical understanding using BMI, IT, and RBV, ensuring that both firm-level capabilities and external pressures are considered.

This flexible approach fits the study's aim of comparing diverse organisations and uncovering similarities and differences in how circular business models are implemented. It also supports the integration of multiple data sources, such as documents, interviews and observations, to create a comprehensive view of practices. By combining inductive exploration with abductive interpretation, the research approach balances openness to emerging insights with a critical engagement with established theoretical frameworks.

### **4.2 Research Design**

A qualitative multiple case study design was employed in this study to examine CE practices in real-life business contexts within the Finnish food industry. Case studies are well-suited to explore complex phenomena where boundaries between the phenomenon and its context are not clearly defined (Crowe et al. 2011). Qualitative methods enable researchers to investigate the how and why of phenomena, providing depth that numerical data alone cannot capture (Hammarberg et al. 2016). This approach is particularly valuable in an exploratory and comparative thesis of this nature, where the goal is to understand processes, perceptions, and contextual influences rather than to test predetermined hypotheses. A qualitative approach also allows flexibility in adapting data collection and analysis as new insights emerge, which is critical when studying sustainability practices that are still evolving (Bansal et al. 2018).

The primary empirical materials consist of company sustainability reports, industry articles, and academic literature. These documents provide foundational knowledge about the companies' circular economy initiatives, policies, and publicly reported performance. However, it must be pointed out that document analysis alone may not reveal on-the-ground practices or the subtleties of implementation. In order to address this, in-person interviews and observations were conducted to capture data that is not visible online. Interviews, such as the one conducted with the ResQ Club CEO, allow for direct interaction, enabling the researcher to adapt questions, follow-up on emerging themes, and clarify ambiguous responses in real time. This level of adaptability is an advantage over fully structured or remote formats, which may restrict conversational depth (Bryman, 2016). Interviews are also particularly suited to sustainability research because they can uncover the motivations, challenges, and contextual factors influencing circular economy adoption that are often absent from public reports (Adams et al. 2014).

Observations at Hesburger, Fazer, and K-Supermarket sites provided opportunities to witness circular practices as they unfolded in natural settings. Naturalistic observation captures real-time behaviours and interactions in operational contexts, offering insight into how sustainability initiatives are actually implemented and experienced (Angrosino, 2007). For example, observing product labelling in supermarkets or packaging use in restaurants enables the researcher to identify discrepancies between reported strategies and actual practice. This method is especially useful for detecting behaviours that may not feature in interviews, either because they are taken for granted by staff or because they are considered as sensitive topics (Ciesielska et al. 2018).

Using a combination of these methods, including documents, interviews, and observations, enables methodological complementarity, as each method contributes different but related insights into the phenomenon under study. This approach allows the strengths of one method to compensate for the limitations of another, resulting in a more refined and comprehensive understanding of how circular economy practices are implemented within firms. The use of multiple approaches (methodological complementarity) to study the same phenomenon therefore supports the credibility of the study by broadening the analytical perspective and reducing reliance on a single source of empirical material (Flick, 2018). Rather than applying triangulation in the strict methodological sense, this study adopts methodological complementarity to integrate insights from different qualitative sources.

In sustainability research, the use of multiple data sources is particularly important, as environmental and social claims are often based on self-reported corporate information, which may be influenced by impression management or selective disclosure. Cross-referencing with other data sources enables the researcher to construct a more accurate and nuanced understanding of real practices and to assess the degree of alignment or misalignment between reported strategies and enacted practices. Whilst observations enrich understanding of context and human behaviour, interviews, on the other hand, provide access to motivations and interpretations, and reports illuminate strategic intentions and performance claims.

This qualitative, multi-method design enables comparative analysis across organisations while accounting for contextual differences in how circular economy practices are implemented.

### 4.3 Case Selection

To explore how CE principles are applied across different business models and organisational contexts, four Finnish food-related organisations were selected as case studies:

**ResQ Club:** an online platform and mobile application that allows consumers to purchase surplus meals and groceries at reduced prices, was interviewed at their Helsinki office.

**Fazer:** a major food and confectionery producer, which is known for integrating sustainability into its operations, was unable to accommodate a formal interview due to time constraints. Instead, they invited participation in a guided tour, during which an observation was conducted.

**Hesburger:** a popular fast-food chain, where observations were completed around different franchise locations in Helsinki, in regards to their recycled uniforms and serving items.

**K-Supermarket:** a grocery store which focuses on extending the lifecycle of food through donation and decreased pricing, as well as producing biogas and compost from unused food. Observations were carried out in several of their stores.

The cases were selected using purposeful sampling to identify variations in company size, market roles, and positions within the food value chain. This diversity of case studies enables comparisons between producers, retailers, and intermediaries, and supports analysis of how circular economy adoption differs depending on organisational scale, resources, and institutional exposure.

Online information was gathered in terms of secondary data through articles, business reports, and reviews of companies. Interviews were not always possible due to representatives of the companies being unavailable due to other commitments; therefore, one interview was focused on and was conducted with ResQ Club, which had less publicly available information online. Secondary data was also utilised in order to supplement the primary data, primarily sourced from business reports, sustainability reports, company annual reviews, and other reputable online resources.

Certain circular food-related companies in Finland were chosen as the focus of this thesis for several compelling reasons, namely: Finland is frequently cited as a leading country in circular economy policy and implementation; the country launched the world's first national circular economy roadmap in 2016 and continues to set clear ambitions for material efficiency and carbon neutrality through 2050 (Sitra, n.d.; Finland Toolbox, n.d.). Finland

provides a relevant institutional context for examining circular economy adoption due to its established policy framework, early adoption of a national circular economy roadmap, and strong alignment between public institutions and sustainability objectives. This context allows analysis of how firms respond to relatively consistent institutional pressures, rather than comparison across divergent regulatory environments.

While large firms such as Fazer and Kesko may possess greater financial and technological resources, smaller actors such as ResQ Club may demonstrate greater agility and business model innovation. Fazer, Hesburger, and K-Supermarket were selected due to their scale, visibility, and embeddedness in everyday Finnish food consumption, which positions them as influential actors in shaping mainstream circular practices. Their established operations and market reach make them particularly relevant for examining how circular economy principles are integrated into dominant business models rather than niche initiatives.

Examining companies that operate at different stages of the food value chain allows the study to highlight how circularity in Finland emerges not through isolated initiatives, but through coordinated actions across production, retail, consumption, and surplus redistribution (Bocken et al, 2014; Sitra, 2016).

The selection of these four cases is analytically motivated rather than intended to be representative of the Finnish food sector. The cases were deliberately chosen to reflect variation in firm size, organisational role, and position within the food value chain in order to examine how circular economy principles are translated into business model innovation under different structural conditions. By including a producer (Fazer), a retailer (K-Supermarket), a food service provider (Hesburger), and a surplus redistribution platform (ResQ Club), the study aligns case selection directly with the research question by enabling analysis of how resource availability, institutional pressures, and value creation mechanisms shape CE implementation across interconnected everyday actors. This comparative logic supports theory-driven analysis of how firm resources, institutional pressures, and business model design shape circular economy implementation, rather than making claims of sector-wide generalisation (Yin, 2018; Eisenhardt, 1989).

## **4.4 Data Collection and Methods**

This thesis employs qualitative data collection methods to explore circular economy practices among selected Finnish food industry companies. Empirical data were gathered through company sustainability reports, academic and industry articles, interviews, and direct observations. The combined approach allowed for a nuanced understanding of both the strategic intentions reported by companies and their practical implementation.

The interview conducted with the CEO of ResQ Club in February 2025 provided insight into how the company frames its circular economy activities and priorities in circular economy strategies. Interview data were transcribed and analysed thematically in line with the analytical framework outlined in Section 4.5. ResQ Club's focus on reducing food waste

through a digital platform aligns with circular principles by extending product life cycles and promoting resource efficiency (ResQ Club, 2023).

An observational visit to Fazer in February 2025 enabled the collection of first-hand data on circular practices within their production facilities. The observation focused on identifying practices presented by the company as part of its circular economy strategy, which were later examined during the comparative analysis. According to Fazer's 2023 sustainability report, the company prioritises the use of renewable materials and invests in bio-based packaging solutions to reduce environmental impact. Academic sources highlight Fazer's role as a leader in Finland's food industry circular transition, with innovative projects supporting circular supply chains and bioeconomy development ( Fazer, 2023). Fazer's Green Finance Framework (Fazer, 2025) confirmed their sustainability agenda and strategy by using sustainable products and increasing vegan offerings with 41% and using recycled packaging material with 87%

In June 2025, the researcher visited Hesburger franchise locations, which revealed practical examples of circular economy initiatives. These include staff uniforms, including shirts and hats, made from recycled plastic materials. These practices reflect the company's stated focus on material reuse and resource efficiency to sustainable sourcing and circular product design (Hesburger, 2024). Additionally, recycled materials were used in serving trays, supporting waste reduction and resource recovery goals. These observations were later examined alongside interview and documentary data during the comparative analysis, which emphasise material efficiency and waste minimisation throughout their operations (VTT, 2022).

The researcher's observations at various K-Supermarket locations in Helsinki in June 2025 focused on the use of red sticker discounts for food items nearing expiry. It was observed that the discounted section was actively frequented by customers, indicating consumer engagement with waste reduction efforts. According to K-Supermarket's 2023 sustainability report, the red sticker initiative forms part of the company's end-of-life food management strategy, aimed at minimising food waste by encouraging timely consumption of perishable products (Kesko, 2023). Studies on retail food waste confirm that such discounting strategies effectively reduce unsold food and contribute to circular food systems (Papargyropoulou et al. 2014).

Combining interviews, observations, and document analysis was essential for revealing both the visible and subtle dimensions of circular business models. Together, these data collection methods provided a complementary understanding of reported corporate strategies and observed practices across four companies operating within the food sector in Finland, thereby offering a more nuanced view of how circular economy principles are implemented at the firm level.

## 4.5 Analytical Approach

*The analysis follows a qualitative, comparative approach, guided by the theoretical frameworks outlined in Chapter 3.*

### 4.5.1 Analytical Frameworks

This study applies three core theoretical lenses as the primary analytical framework: Business Model Innovation (BMI), Institutional Theory (IT), and the Resource-Based View (RBV). Together, these perspectives guide the interpretation of how circular economy principles are embedded in business models, shaped by institutional pressures, and enabled or constrained by firm-specific resources.

- **Business Model Innovation (BMI):** to examine how CE principles are embedded in the companies' value propositions, value creation processes, and value capture mechanisms (Teece, 2010).
- **Institutional Theory (IT):** to analyse regulatory, normative, and social pressures that shape and influence CE adoption.
- **Resource-Based View (RBV):** to assess how company-specific resources and capabilities enable or constrain circular innovation.
- **Circular Economy Tools:** including the 9R framework, side-stream valorisation, and resource recovery models (Potting et al, 2017).

In addition to these theoretical lenses, analytical tools from circular economy literature were used to structure and compare empirical observations. These include the 9R framework, side-stream valorisation, and resource recovery models, which support the categorisation of practical circular actions without functioning as standalone theoretical explanations.

The Sustainable Development Goals (SDGs) were used as a contextual reference point to situate observed practices within broader sustainability ambitions, rather than as an analytical framework guiding theory development.

These frameworks allow the assessment of not just what companies do, but how these actions align with both high-level sustainability goals and functional CE strategies.

### 4.5.2 Data Sources and Integration

This analysis incorporates multiple qualitative data sources in a complementary manner, including a semi structured interview with a representative from ResQ Club, which provided insight into operational motivations and practical challenges. In addition, site visit observations conducted at Fazer, K Supermarket, Hesburger, and ResQ Club offered opportunities to observe circular economy related practices in everyday operations.

Finally, document and content analysis of corporate sustainability reports, company websites, third-party articles, and industry statistics were undertaken to gather evidence of CE activities. By combining these sources, the study evaluates both stated strategies in reports

and real-world practices, helping to identify discrepancies, strengths, or gaps in CE implementation.

### **4.5.3 Comparative Analysis and Evaluation Criteria**

A comparative analysis was performed across the four selected Finnish food sector organisations and these were examined in relation to how circular practices were operationalised using the 9Rs framework and side-stream and resource recovery actions, their alignment with SDGs, and operational indicators such as the volume of food or materials diverted from waste, reported waste reduction percentages, or resource recirculation schemes.

The comparative analysis focused on identifying patterns and differences in how circular economy principles are operationalised across the cases, rather than evaluating company performance. The analysis examined the extent to which circular practices were integrated into business model elements, the types of institutional pressures influencing adoption, and the role of firm-specific resources in shaping implementation pathways.

### **4.5.4 Rationale and Completeness**

This analytical approach ensures a robust and evidence-based evaluation. It aligns with best practice in CE research, which emphasises both conceptual frameworks and empirical validation (Kirchherr et al. 2017). In addition, it captures both intent, through reports and stated goals, and action, through interviews, observations, and performance data. Finally it also allows for nuanced comparison between companies that may share industry space but differ in scale, innovation, or sectoral role.

## **4.6 Limitations**

Despite the comprehensive qualitative approach adopted in this research, several limitations should be acknowledged. First, the study focuses on a small number of companies within the Finnish food industry, which may limit the generalisability of the findings to other sectors or geographic contexts. Although the selected companies represent diverse business models and circular economy initiatives, their specific circumstances may not fully reflect the broader industry trends (Creswell & Poth, 2018).

Notably, the reliance on interviews and observations introduces potential biases. For instance, interviews depend on participants' willingness to share information openly and accurately, which can be influenced by social desirability or organisational image concerns (King & Horrocks, 2010). The ResQ Club interview, while insightful, reflects the perspective of a single individual and may not capture all internal dynamics related to circular economy practices.

Overall, observations were limited to specific locations and time periods. For example, the visits to Hesburger and K-Supermarket outlets provided snapshots of circular economy activities but may not represent practices across all franchise locations or over longer time

frames. Additionally, observations are inherently subjective and may be influenced by the researcher's interpretation (Angrosino, 2007).

Another limitation is the availability and transparency of company sustainability reports and external articles. While these documents offer valuable data on corporate strategies and self-reported performance, they may also present a biased view, emphasising positive outcomes and underreporting challenges or failures. Cross-referencing with interviews and observations aimed to mitigate this issue, but some gaps or inconsistencies may remain (Adams & Frost, 2008). Additionally, Hesburger did not have much public access to their reports online, leading towards limited knowledge and information being available.

In addition, as an exploratory and comparative study, the research does not aim to establish causal relationships or quantify impacts. Instead, it provides a descriptive and interpretive understanding of circular economy implementation, which should be complemented by further research using mixed methods or longitudinal designs to deepen insight into effectiveness and scalability (Bryman, 2016).

As a qualitative multiple case study, the aim of this research is not statistical generalisation, but analytical insight. The findings are intended to contribute to theoretical understanding of circular economy adoption by illustrating how institutional pressures, organisational resources, and business model structures interact in a specific context. Transferability to other settings depends on the degree of similarity in institutional environments and organisational characteristics, rather than representativeness of the cases.

## **4.7 Ethical Implications**

This research carefully considered ethical implications throughout the data collection process. For the interview with ResQ Club conducted in February 2025, informed consent was obtained prior to the discussion (Wiles et al, 2008). The interviewee was informed when the recording started and stopped and the questions were shared with them beforehand in order to ensure transparency and comfort during the interview (Orb, Eisenhauer, & Wynaden, 2001). The interviewee was informed about the purpose of the study, the voluntary nature of participation, data handling procedures, and confidentiality prior to the interview.

Whilst Fazer did not agree to an interview, the company invited the researcher to join their public guided tour for observational data collection. In the case of Hesburger and K-Supermarket, observations were conducted without prior notification to the companies, as the settings were public and unobtrusive, thus aligning with accepted practices for naturalistic observation in public spaces (Gold, 1958; Kawulich, 2005).

This research strictly follows the ethical guidelines provided by the university to ensure respect for participants and organisations involved. Confidentiality of company data has been maintained, with sensitive information anonymised or omitted to prevent misrepresentation or reputational harm (British Educational Research Association, 2018). Care has been taken

to present findings accurately and fairly, avoiding bias and ensuring that interpretations are grounded in evidence to uphold the integrity of the research (Wiles et al, 2008).

Ethical considerations were treated as an ongoing process throughout the research, ensuring that data collection, analysis, and presentation adhered to principles of transparency, respect, and academic integrity.

## 5.0 Empirical Presentation

*This chapter presents the empirical observations from four Finnish food-sector companies. The findings are organised on a company-by-company basis on how CE principles are reflected in each company's business model. Specifically, the chapter describes how circular practices are embedded within value proposition, value creation, and value capture. Attention is also given to observed practices related to waste reduction, by-product utilisation, resource efficiency, and circular service offerings. The chapter also identifies initial drivers and constraints that influence CE implementation, as reflected in company practices and statements. The findings in this chapter are presented descriptively, without extensive theoretical interpretation.*

### 5.1 Fazer

#### 5.1.1 Company Profile and Strategy

Fazer is a large Finnish food manufacturer (employing over 6,000 people) which operates across multiple product categories including bakery, confectionery, and plant-based foods (Fazer Group, 2024). Sustainability and CE objectives are integrated into the company's overall strategy and governance structure. For example, Fazer's agenda has long-term sustainability targets extending to 2030, including an aim to reduce emissions and food waste by 50 percent, ensure 100 percent of raw materials are sustainably sourced, and increase its plant-based product offering (Fazer Group, 2023). The responsibility for sustainability remains at the highest corporate level, with the Board of Directors overseeing and approving climate, circularity, and sustainable sourcing ambitions (Fazer Group, 2024), which reflects a formal organisational commitment

#### 5.1.2 Circular Practices Across the Value Chain

Fazer's circular practices are visible across sourcing, production, packaging, and logistics. A central example includes using oat hulls (a by-product of oat milling) to produce xylitol at its Lahti facility (Fazer Group, 2021). Additional bakery by-products like oat husk and dough are also recycled into valuable outputs and energy (Bakery and Snacks, 2020; Fazer Group, 2023) to help Fazer reduce waste from its production processes.

Packaging initiatives include sustainable packaging designs, unified recycling labelling, and reductions in cling film use in confectionery production (Fazer Group, 2023). These initiatives exemplify how internal resources and operational capabilities are mobilised to implement circular practices, consistent with the resource-based view. Packaging systems for food waste and plant-based ingredient updates align with improved waste management practices.

Fazer collaborates with research institutes and start-ups, including Solar Foods, to advance innovations such as cell-cultured cocoa and regenerative farming (Fazer Group, 2022; Fazer Group, 2024). This collaborative approach demonstrates the integration of circular principles

into the company's business model innovation, allowing experimentation with novel practices that extend product and material lifecycles.

### **5.1.3 Empirical Insights from Observation**

Observations at Fazer's facilities indicate a structured approach to circular practices, with sustainability integrated across operations. Waste streams were clearly labelled, side-stream processing units were operational, and staff incentives were linked to measurable food loss reduction targets, reflecting the alignment of organisational routines with CE objectives. The Makeamoka programme diverts substandard confectionery products from disposal by redirecting them for resale, exemplifying operationalisation of circular principles at the production stage.

The xylitol plant stood out as a powerful demonstration of circularity in action. It transforms oat husks into xylitol and energy, and the facility has already received recognition via Finland's Circwaste award (Fazer's xylitol factory, 2024). The visibility of real-time data on food loss and waste generation during the tour emphasised how the Bege project results drive continuous improvement and engagement among employees.

Finland's Food2.0 initiative consisting of a multi-partner research and development ecosystem led by Valio and supported by Business Finland aims to develop innovative circular economy solutions for the food system by promoting sustainable production, side-stream utilisation, and resource-efficient practices across the value chain (Valio, 2024). Led by organisations such as VTT, Åbo Akademi University, and RISE, these projects include pilots like L2C (Linear to Circular) and EBITDA. Their aim is to support data-driven business models, improve material efficiency, and develop tools for assessing circular profitability. One pilot explores alternatives like cell-cultured cocoa as a more sustainable sourcing method. Although these initiatives demonstrate potential for cross-sector collaboration and innovation, scaling circular technologies is constrained by regulatory requirements and high development costs, highlighting institutional and resource-related barriers to widespread CE adoption. In contrast, VTT's "Fantastic Fungi" project demonstrates how industrial organic by-products including food processing side streams are valorised through novel bioconversion technologies to retain nutrients and create sustainable industrial feedstocks, aligning with circular economy objectives. (VTT, 2024).

### **5.1.4 Limitations in Fazer's Circular Transition**

Despite clear ambition and innovation, Fazer still faces challenges in its circular shift. The cell-cultured cocoa initiative remains experimental and is not commercially available due to high development and regulatory costs (Fazer Group, 2022). The Makeamoka surplus candy programme, while valuable, does not yet prevent total food waste, as it operates at pilot scale rather than company scale. Traceability infrastructure depends partly on external certification systems; this can leave supply chain gaps in regions with limited monitoring capacity.

Furthermore, scaling circular practices beyond Finland presents logistical and financial challenges. Legacy processes, low margins, diverse regulatory environments, and uneven resource availability across Fazer's international operations present both complexity and constraints for global implementation.

## **5.2 ResQ Club**

### **5.2.1 ResQ Club's Approach to Circularity**

ResQ Club is a Finnish foodtech company committed to tackling food waste by connecting consumers with surplus meals from restaurants, cafés, and grocery stores. Their core circular strategy lies in redistributing food that would otherwise go to waste, thus supporting food system efficiency and contributing to sustainable consumption patterns. Through their mobile platform, ResQ Club enables businesses to monetise excess food while providing affordable meals for customers, creating environmental, economic, and social value. This aligns with the principles of a circular economy by prolonging the life of edible products and reducing waste at the consumption end of the food supply chain (ResQ Club, 2023). The company also emphasises transparency, encouraging participating businesses to display sustainability metrics related to saved food and emissions reduction.

Key industries adopting circular economy principles in Finland include manufacturing, waste management, technology, and food services. In this context, ResQ Club stands out within the foodtech and hospitality sectors, which are traditionally challenged by high levels of waste. Their approach complements broader waste management strategies, such as biowaste collection and energy recovery, by targeting edible surplus food before it becomes waste. Finland's strong digital infrastructure and progressive environmental policies have also enabled startups like ResQ Club to thrive within the sustainability ecosystem (Sitra, 2024).

In May 2022, ResQ Club reported that they have over 30,000 active monthly users in active cities and that around 80,000 portions were sold through the app. In a five year period (2016-2021), they reported that around 5.3 million food servings were saved by consumers using their app (ResQ Club, N.D.). In 2025, they opened the market for larger wholesale batches.

### **5.2.2 Circular Economy Role and Business Model Logic**

A structured interview was conducted with the CEO from ResQ Club, Mr Sebastian Wikström, for purposes of gaining practical insights into the application of circular economy strategies in the Finnish food industry. The participant was selected based on their expertise in sustainable food supply chains and their company, which focuses on extending product life. The interview took place on 6 February 2025 in person and lasted approximately 35 minutes. It was recorded with the participant's consent and selected excerpts from the interview were transcribed and included in the analysis

*“I think players like ourselves actually have quite a significant role in the circular economy because we do what can be done within the current system and we promote that mindset.”*  
(Sebastian Wikström, CEO, ResQ Club)

Due to the analogy of a perfect circular economy being defined as a product lifecycle where the item does not meet an end, ResQ Club does not automatically assign itself as a circular company. However, its business model focuses on reducing the amount of food and items that are left over at the end of the day, meaning that a substantial amount of food no longer goes to waste. This is a prime example of how companies can implement circular business models and take baby steps to move towards a circular mindset, that businesses do not have to start by being fully circular, but rather focus on what they can do (S. Wikström, CEO ResQ Club, 2025). As a company, it has managed to save 18,080,000 products from going to waste, meaning that they have contributed towards the resource recovery of 18,080,000 items (ResQ Club, n.d.).

*“Now, in Finland, we have such a strong position already that there's actually not a lot of restaurants that aren't either in ResQ or then we have contacted them and they have, for some reason, declined.”* (Sebastian Wikström, CEO, ResQ Club)

ResQ Club provides restaurants, cafés, bakeries, and grocery stores in Finland with an easy way to sell surplus food through a simple mobile app (ResQ Club, n.d.). Businesses can list their extra items in just a few steps, and nearby customers can purchase them at a discount. This ease of use has made it possible for a wide range of companies, from small cafés to large retail groups such as S-group (Retail Company), to join the platform and reduce their food waste (Yle News, 2016). By making the process quick and straightforward, ResQ Club has helped save millions of items across its markets, showing that small actions by many businesses can add up to a significant reduction in waste (Sifted, 2020).

Research has shown that when circular practices are simple, convenient, and fit easily into daily routines, more people and businesses are likely to take part. The OECD (2017) notes that reducing effort and making actions easy to do increases participation, whether it is recycling, repair, or food-waste recovery. This is exactly where ResQ Club excels: reaching out is simple, joining the platform is straightforward, and connecting with local customers takes just a few clicks. The result is that saving surplus food becomes an easy and regular habit for businesses in Finland.

*“The thing is, though, that the beauty of this business is that there's also the money side, like the buyer saves and the seller gets some extra revenue from something that would otherwise just go to waste. So, and there's no conflict between the sustainability side and the economy side.*

*It works even if neither party, seller or buyer, gives a sh\*t about sustainability. It still kind of works. And of course, that's great news because you don't need to, you can operate in markets where sustainability is not that important.”* (Sebastian Wikström, CEO, ResQ Club)

ResQ Club’s model proves that making participation easy and accessible brings in a much wider audience than just those who prioritise sustainability. By offering surplus food at a reduced price via a mere app, more people willingly engage in resource recovery, particularly cafés, restaurants, and stores get to sell what would otherwise go to waste, buyers save money, and ResQ earns revenue on each transaction. This convenience means that CE actions become part of routine behaviours.

Evidence from behavioural science suggests that when sustainable choices are made effortlessly and integrated into ordinary routines, people are far more likely to adopt them (Boston Consulting Group, 2023). With ResQ Club's effortless onboarding, streamlined listing process, and instant access to local demand, the transaction cost for businesses is minimal, so surplus food recovery becomes a regular, everyday practice in Finland. These findings reflect broader national priorities, as Finland has increasingly positioned the circular economy as a driver of business growth and innovation (Business Finland, 2024).

*“So, you know, for instance, grocery stores to sell there, those who are close to expiry date, and they sell them at 30% discount or the red price. So that's kind of also one form of competition in a sense. And maybe a third challenge is that, you know, there's so much going on now. People kind of have bigger problems than sustainability. So it's not like top of their minds at the moment. On the other hand, inflation is also playing its part. So the reduced prices we can offer is, again, a benefit, of course, in many, many places.” (Sebastian Wikström, CEO, ResQ Club)*

In terms of competition, grocery stores with their red sticker discounts are the strongest, as they offer a similar product (As seen with K Supermarket). Another challenge ResQ Club faces is that people do not always prioritise sustainability; for many, it is only a secondary consideration and does not strongly influence their purchasing decisions. Research shows that consumers often make choices based on immediate concerns such as price, convenience, or time, rather than sustainability (NielsenIQ, 2021). However, periods of inflation work in ResQ Club’s favour, as the reduced prices offer a tangible benefit to buyers, making the service more attractive.

*“So you mentioned already that the red stickers are pretty random and in ResQ you can see what's on offer. If we look at grocery stores, for instance, like today already, they can sell also surplus flowers, cosmetics, basically anything that has the best before date.” (Sebastian Wikström, CEO, ResQ Club)*

A key advantage ResQ Club holds over supermarket red sticker discounts is the ability for customers to browse available items and their prices in real-time through the app, offering greater transparency and convenience. In contrast, red sticker deals in-store can be unpredictable, often requiring customers to be physically present to discover discounts. Beyond this, ResQ Club's commitment to expanding its offerings, by looking at what other

stores sell, such as flowers, cosmetics, and products with best-before dates, directly contributes to extending the lifecycle of these items.

By ensuring their sale before they reach their end-of-life, ResQ Club effectively reduces waste and supports a more sustainable consumption model. Research indicates that extending the lifespan of products not only conserves resources but also significantly diminishes environmental impacts. For instance, increasing a product's life expectancy by 50% can reduce the need for replacements and associated environmental impacts by approximately 33% (National Institute of Standards and Technology [NIST], 2023). Therefore, ResQ Club's model exemplifies how increasing the availability and lifespan of products can enhance sustainability efforts and strengthen the principles of the Circular Economy.

### **5.2.3 Limitations in ResQ Club's Circular Transition**

While ResQ Club's model offers clear environmental benefits, it also faces limitations in its ability to fully integrate circularity. One significant barrier is the dependency on voluntary participation from food providers. Not all businesses are willing to commit to food redistribution due to reputational concerns, logistical challenges, or limited incentives. Additionally, regulatory barriers around food safety and liability may limit the kinds of surplus food that can legally be redistributed. Another issue is scalability. Although the platform is available in several cities, achieving systemic change across the food industry requires broader behavioural shifts and collaboration with larger retail chains and institutional providers.

Furthermore, the model focuses on the tail end of the food value chain and does not address waste upstream, such as inefficiencies in production or overstocking. As a digital platform, ResQ Club also relies on consumer engagement and smartphone access, which may exclude certain demographics. Despite these limitations, the company continues to innovate within its niche, and its model could inform future policy development on circular food systems in Finland and beyond.

## **5.3 Hesburger**

### **5.3.1 Hesburger's Circular Economy Policies and Incentives**

Hesburger has integrated circular economy policies into several areas of its operations, combining environmental targets with practical business strategy. One of its notable initiatives involves converting used cooking oil into renewable diesel through a collaboration with Neste. Since 2021, Hesburger has collected frying oil from over 300 restaurants to produce Neste MY Renewable Diesel™, which reduces greenhouse gas emissions by up to 90 percent in transport operations (Neste & Hesburger, 2021). The company has also taken steps to reduce packaging waste by replacing plastic straws and selecting more sustainable packaging options (Hesburger, n.d.-a).

### **5.3.2 Circular Economy Across Key Industries**

Hesburger's approach to circularity includes partnerships across industries, particularly in textiles and material recovery. The company's uniforms are manufactured by TouchPoint using recycled plastic bottles and surplus textile waste. When the uniforms are no longer usable, they are repurposed into outdoor table sets. This demonstrates effective material loop closure and shows how hospitality, textile, and recycling sectors can cooperate to generate added value from waste (Hesburger, n.d.-b; Kestävyysloikka.n.d.).

### **5.3.3 Insights from Observation**

During site visits to the Hesburger franchise locations in Helsinki, several examples of circular practices were observed. Staff uniforms, including jackets and hats, were visibly labelled as being made from recycled materials, consistent with TouchPoint's supply of workwear made from post-consumer plastic bottles and leftover textile fibres (Hesburger, n.d.-c). Serving trays used in-store were also marked as recycled, reportedly manufactured from old transport boxes that were cleaned and remoulded into trays at domestic recycling facilities (Kestävyysloikka. (n.d.). These items appeared durable and fit for repeated use, indicating an effort to integrate circular design into everyday operations.

### **5.3.4 Limitations in Hesburger's Circular Transition**

Despite Hesburger's progress, its circular strategy still has several limitations. Most packaging remains single-use, and customer-facing waste sorting appears limited. There is little evidence of reusable packaging systems or reverse logistics processes in public locations. While textile recycling and oil recovery show promise, they are largely dependent on third-party partners and may be difficult to scale internationally. Additionally, while Hesburger communicates many of its circular actions, there is a lack of transparency around how these are monitored or assessed in practice.

## **5.4 K Supermarket**

### **5.4.1 K-Supermarket's Circular Economy Policies and Incentives**

K-Supermarket operates under Kesko's sustainability framework, which commits to halving food waste by 2030 from the 2019 baseline (Kesko, 2025). Key policies include precise demand forecasting, selection management, and proactive logistics that minimise overstocking. Discounting products nearing expiry with red-label pricing is a core strategy. In 2024, nearly 50 million such items, including bread, ready meals, meat, and dairy, were sold at reduced prices. This contributes both to food waste reduction and the retailer's broader sustainability goals (Kesko, 2025).

### **5.4.2 Circular Economy Across Key Sectors**

K-Supermarket's approach to the circular economy spans retail, logistics, and food manufacturing. Inedible biowaste from nearly 600 stores is transported to Gasum-operated biogas plants, where it is converted into renewable energy. This energy is then used to produce Pirkka-branded food items, such as ice cream (Kesko, 2023). Additionally, surplus fruit and vegetables from central warehouses are turned into Hyvis soups, reflecting active cooperation between grocery and food processing sectors (Kesko, 2023; Ethical Food Entrepreneurship, 2025).

### **5.4.3 Insights from Observation**

In the K-Supermarket locations visited in Helsinki, red discount stickers were applied clearly to food items nearing their expiration date. These included a wide range of products, from ready meals to baked goods. The red-sticker areas were noticeably active, especially in the early parts of the day, but became emptier in the afternoon. This likely reflects consistent consumer interest in discounted food and shows that many of these items are successfully purchased before they expire. The use of this system appears efficient and widely accepted among local shoppers.

### **5.4.4 Limitations in K-Supermarket's Circular Transition**

Despite K-Supermarket's visible efforts in circular economy practices, some limitations remain. The success of red-label discounting is dependent on consumer behaviour and cannot fully eliminate waste. Reuse systems, such as packaging return or refill models, are not yet evident at the store level. Furthermore, much of the circular process relies on external partners such as Gasum and food producers. This means that while Kesko facilitates the flow of surplus and waste into new value chains, it does not control the entire cycle of reuse and recovery.

## **5.5 Comparison of Sectors and Companies**

Across the four case studies, CE practices are clearly present but they vary in terms of scope, depth, and positioning within the food value chain. Whilst each company engages with circularity, they do so through different mechanisms. This reflects differences in organisational size, market role, resource availability, and exposure to regulatory and societal expectations.

Fazer and K-Supermarket demonstrate comprehensive engagement with circular economy principles, with initiatives spanning sourcing, production, logistics, retail, and end-of-life management. In contrast, ResQ Club and Hesburger implement more targeted interventions at specific stages of the value chain. Both companies also embed circular principles into their core operational processes rather than treating them as stand-alone sustainability initiatives. Examples include Fazer's industrial sidestream valorisation and biogas integration, and Kesko's combination of demand forecasting, food redistribution, and biowaste-to-energy

systems. These practices are supported by extensive internal resources, data infrastructures, and long-term strategic commitments, enabling large-scale and coordinated implementation.

In contrast, ResQ Club and Hesburger apply more focused and targeted circular solutions, which operate at specific points within the value chain. ResQ Club focuses more on the consumption and end-of-life stage, addressing surplus food through digital redistribution. Its platform-based model also allows for rapid scaling, but it does not directly influence upstream production or sourcing practices. Similarly, Hesburger’s approach targets used cooking oil and textile waste through partnerships with external actors such as Neste and TouchPoint. These initiatives demonstrate effective circular outcomes but remain limited in scope when compared to the vertically integrated strategies of larger companies

The comparative analysis indicates variation in the integration of circular practices within each firm’s business model. In Fazer and Kesko, circularity is closely linked to operational efficiency and core value creation, whereas ResQ Club’s model centres on end-of-life food recovery, and Hesburger applies circular practices in a supplementary capacity. In Fazer and Kesko, circularity is closely linked to their core value creation and operational efficiency, with waste reduction, sidestream utilisation, and energy recovery forming part of everyday business activities. In ResQ Club, however, the entire business model is built around surplus food recovery. Furthermore, Hesburger occupies more of an intermediate position, where circular initiatives complement, rather than redefine, its traditional fast-food business model.

Below are some tables that recognise each company and which models they align with:

**Table 1: Company Alignment with 9 R Models**

Company:	R0 Refuse	R1 Rethink	R2 Reduce	R3 Reuse	R4 Repair	R5 Refurbish	R6 Remanufacture	R7 Repurpose	R8 Recycle	R9 Recover
Fazer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hesburger	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
K Supermarket	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ResQ Club	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

When assessed against the 9R framework, all four case studies show strong engagement with strategies like Rethink, Reduce, and Repurpose. However, only Fazer, Hesburger, and K Supermarket show activities across lower-level strategies such as Recycle and Recover. ResQ Club primarily operates at the Rethink and Reduce levels by altering food distribution practices, while Hesburger’s initiatives are concentrated around Repurpose and Recover through material and energy partnerships.

**Table 2:** Company Alignment with the UN Sustainable Development Goals (UNSDGs)

	<b>Fazer</b>	<b>Hesburger</b>	<b>K Supermarket</b>	<b>ResQ Club</b>
<b>SDG 9: Industry, Innovation and Infrastructure</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>SDG 12: Responsible Consumption &amp; Production</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>SDG 13: Climate Action</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

When compared with the UNSDGs, all case studies contribute directly to SDG 12 (Responsible Consumption and Production) through food waste reduction, improved resource efficiency, and waste diversion. SDG 13 (Climate Action) is SDG commonly addressed, particularly by companies investing in renewable energy and emissions reduction. However, differences emerge in the companies' level of SDG engagements. For example, larger companies such as Fazer, ResQ Club and K Supermarket are in broader alignment with additional goals like SDG 9 (Industry, Innovation and Infrastructure), reflecting their wider operational reach and influence.

In summary, the empirical findings chapter demonstrates that CE implementation in the Finnish food sector is highly context-dependent. Factors like company size, position in the value chain, and access to resources strongly shape how their circular principles have been operationalised.

## 6.0 Analysis and Discussion

*This chapter presents the empirical findings and analyses them through the three theoretical perspectives outlined in Chapter 3. When using BMI, the analysis examines patterns in how CE principles are translated into business model elements across the four case companies. Institutional theory is applied to analyse how regulatory, normative, and cognitive pressures within the Finnish context influence firms' engagement with circular practices. Furthermore, RBV is used to explore how company-specific resources shape the capacity of the case companies to implement and sustain circular BMI. Through a comparative analysis, this chapter identifies similarities and differences among the four case companies, examines variations in the adoption of circular economy principles, and discusses how institutional pressures and internal capabilities interact to shape circular business model outcomes.*

### 6.1 Circular Economy Integration Across Business Models

Across the four cases, CE principles are reflected in all the business models in distinct ways, particularly in relation to value proposition, value creation, and value capture. However, the extent to which result in incremental versus radical business model innovation differs markedly among the companies.

From a BMI perspective, circularity was most often reflected in value creation processes, such as waste reduction, side-stream utilisation, and energy recovery, rather than in fundamental changes to value propositions or value capture mechanisms. In the case of Fazer, the circular economy principles are incorporated primarily through incremental adjustments to existing business models. The company's production of xylitol from oat hulls illustrates how the industrial side streams can be transformed into valuable inputs. This extends the value proposition and simultaneously improves resource efficiency (Fazer Group, 2021). Similarly, Fazer's collaboration on recyclable packaging solutions demonstrates how circularity is embedded within value creation processes rather than redefining the overall business model (UPM Specialty Papers & Fazer, 2024). These initiatives indicate that, for large and established producers, the adoption of circular economy principles typically reinforces and improves existing business models rather than producing radical transformation.

Maintaining the BMI perspective, circular economy adoption in large food companies also occurs often as incremental changes that modify value creation instead of redefining the core business model. In the case of Hesburger and K Supermarket, both larger businesses, they display similar patterns of operational business model innovation. Hesburger's conversion of used cooking oil into renewable diesel represents a circular approach to waste management that reshapes value creation and supports value capture through reduced emissions and fuel costs (Helsinki Times, 2023). In the retail context, K Supermarket implements food waste reduction strategies such as dynamic pricing, improved demand forecasting, and biogas conversion. This alters how value is created and retained across the supply chain (Kesko, 2024; Kesko, 2025). These practices illustrate how circular economy principles can be

integrated into daily operations without fundamentally altering the companies' market positioning.

Furthermore, in the BMI perspective, companies that embed circularity from their inception are more likely to pursue radical circular business models, as value creation can be designed around circular principles rather than adapted later (Bocken et al, 2016; Geissdoerfer et al, 2017). For example, ResQ Club represents a case where circular economy principles form the foundation of the business model. Their platform's value proposition centres on rescuing surplus food by connecting restaurants and retailers with consumers via a digital marketplace. Consumers are encouraged to be part of the solution and save money in the process. Value creation is achieved through matching supply and demand, while value capture occurs through platform-based transactions (ResQ Club, 2021). This case highlights how circular economy principles can drive more radical forms of business model innovation when circularity is embedded from inception.

The findings in this section help address the main research question by illustrating how Finnish food companies translate circular economy principles into business model innovation. While all four companies integrate circularity to some degree, most CE adoption takes the form of incremental business model innovation that primarily reshapes value creation processes rather than fundamentally redefining value propositions. This pattern is mostly observed among larger, established firms, while smaller firms engage in more radical business model innovation when circularity is embedded from their inception. These findings also support past BMI literature which suggests that the depth of circular integration depends on whether circularity is adjusted into existing models or designed into new ones.

### **6.1.1 Observed Differences in Circular Economy Practices Across Cases**

The findings indicate that Finnish food-related companies incorporate circular economy principles into their business models in different ways, largely shaped by firm size, organisational role, and position within the food value chain. In all four cases, engagement with the circular economy primarily involves incremental business model innovation, integrating circular practices into existing operations without fundamentally altering value creation or capture. This pattern is particularly visible among established firms such as Fazer, Hesburger, and K-Supermarket, where circular initiatives are embedded within operational processes including side-stream utilisation, renewable energy use, material substitution, and food waste reduction.

These observations are consistent with prior research suggesting that incumbent firms often pursue incremental forms of business model innovation in order to align sustainability objectives with existing revenue models and organisational routines (Geissdoerfer et al, 2017). In these cases, circular economy principles are primarily reflected in value creation activities, while the overall market positioning and core business logic remain largely

unchanged. Circularity therefore functions as an extension of existing practices rather than a restructuring of the business model.

ResQ Club provides a contrasting example, embedding circular economy principles at the core of its platform-based business model. The company's value proposition is structured around surplus food redistribution, with value creation occurring through the digital matching of supply and demand and value capture achieved through platform-mediated transactions. Unlike the larger firms, circularity is not integrated into pre-existing operations but constitutes the foundation of the business model itself. This aligns with literature indicating that digitally oriented firms and start-ups exhibit higher organisational flexibility enabling them to design business models around circular principles from inception (Bocken et al, 2016).

Taken together, these cases illustrate that circular economy implementation within the Finnish food sector is not uniform but varies according to organisational context. Differences in scale, resource availability, institutional exposure, and functional role within the value chain shape how circular practices are adopted and how they translate into business model innovation. Rather than indicating differences in success, these variations demonstrate the multiple pathways through which circular economy principles can be operationalised across different types of organisations within the food value chain.

## **6.2 Institutional Pressures Shaping Circular Economy Engagement**

Institutional theory provides insight into how regulatory frameworks, societal expectations, and industry norms influence companies' engagement to conform with circular economy practices. All four companies operate within a robust institutional environment defined by EU circular economy strategies, national sustainability targets, and strong societal expectations for responsible business conduct (EEA, 2021; Sitra, 2016). These pressures establish a common baseline of mandatory compliance, encouraging companies to adopt circular economy principles to maintain organisational legitimacy.

For established firms such as Fazer, Hesburger, and K Supermarket, institutional pressures appear to encourage compliance-oriented and incremental innovation. Deeply embedded social structures, like laws, regulations and norms that relate to national sustainability goals and public expectations create incentives to demonstrate responsibility through visible circular initiatives. The use of renewable energy and food waste reduction becomes practices that contribute to maintaining organisational legitimacy within a sustainability-oriented market environment (Sitra, 2016).

However, the analysis indicates that institutional pressures alone do not dictate the extent or sophistication of circular economy implementation. Companies differ significantly despite operating under similar regulatory conditions, and how circular economy principles are translated into business models. This supports prior research suggesting that institutional

forces tend to shape the direction of change, but not the extent of transformation, unless supported by internal capabilities (DiMaggio & Powell, 1983; Scott, 2014).

In contrast, for ResQ Club, institutional pressures act as enabling conditions rather than constraints. For ResQ Club, the policy focus on reducing food waste and promoting responsible consumption has created a supportive environment for its surplus food redistribution platform (European Social Fund Plus, 2022). Rather than adapting an existing model, ResQ Club leverages institutional goals to legitimise and scale its inherently circular business model.

### **6.3 Firm-Specific Resources and Capabilities**

The resource-based view (RBV) offers a robust framework for understanding why firms differ in their capacity to translate circular economy principles into business model innovation. For instance, the study's findings indicate that financial capacity, technological infrastructure, organisational scale, and relational resources play a decisive role in shaping both the scope and sophistication of circular initiatives.

The strength of internal capabilities that enable the company to pursue capital-intensive circular initiatives is supported by Fazer's investments in biogas partnerships. (Gasum & Fazer Bakery Finland, 2024). Similarly, the important partnerships formed between Kesko's centralised logistics systems and data-driven waste management capabilities allow K Supermarket to systematically reduce food waste across its retail network (Kesko, 2025). These examples demonstrate how organisational scale and technical expertise support the implementation of circular practices .

Hesburger's approach highlights the importance of relational resources. Their partnership with energy providers such as Neste, provides the company with access to renewable fuel technologies without developing them internally. This enables circular innovation through collaboration (Helsinki Times, 2023). It suggests that external partnerships can complement internal resource limitations without extra cost to enter the field themselves.

The core resources of ResQ Club are primarily intangible. It is central to the company's digital platform, user network, and organisational agility and its ability to scale a circular business model across markets (ResQ Club, 2021). These capabilities clearly illustrate how non-physical resources can underpin circular economy success, particularly in platform-based business models.

ResQ Club plays a unique role in advancing circular economy principles. This is done by appealing to consumers primarily through affordability rather than through sustainability awareness. Their mobile app allows users to save by viewing available surplus items at lower prices in real time, thus allowing them participation without barriers. The "red sticker" discounts in supermarkets, which allow them in store to find the best deals. Choices are often driven by price rather than environmental intentions. While both approaches support circular

outcomes, ResQ Club's digital platform promotes wider engagement, including among users unfamiliar with circular economy concepts, by offering immediacy and convenience.

Both ResQ and red sticker strategies demonstrate that making circular actions simple and value-driven boosts participation. However, ResQ's digital visibility positions them more favourably to turn surplus into sustained circular engagement.

Fazer further distinguishes innovation in side-stream utilisation. The company's Lahti-based facility transforms the by-product oat hulls from its milling operations, into xylitol. This creates a high-value output from otherwise underutilised waste (Fazer Group, 2022). Additionally, the hull residue fuels a biomass heating plant that supplies energy to Fazer's factory complex, exemplifying a closed-loop system with zero waste (Fazer Group, 2022). Combined with smart packaging solutions designed to extend shelf life, Fazer is successful to integrate circular economy principles at both product and process levels.

In contrast, none of the four companies (ResQ Club, Fazer, Hesburger, or K-Supermarket) are engaged in repair, refurbishment, or remanufacturing. This absence can be because the perishable nature of food products and the systemic limitations in the food industry by extending product lifetime, inherently differs from circular economy models applied to durable goods.

Hesburger's circular economy contribution is demonstrated through its collaboration with Neste. Transforming used cooking oil into renewable diesel ensures using it for its transport fleet. By collecting up to 420 tonnes of waste oil annually from over 300 outlets, Hesburger achieves a reduction of transportation-related greenhouse gas emissions by up to 90 percent (Neste & Hesburger, 2021). This approach aligns directly with resource recovery and closed-loop waste-to-energy conversion. Both are vital components of a circular economy.

K-Supermarket employs sophisticated selection management using data analytics to reduce overproduction and to minimise food waste. It also taps side-streams by rerouting inedible waste, such as trimmings and organic by-products, into biogas. This is mirroring Hesburger's approach in aligning waste management with energy recovery. Their focus on halving food waste by 2030 aligns with national and the EU-level circular economy goals by reflecting a systematic integration of circular thinking into operations.

This study explores how Finnish food companies implement circular economy principles in business model innovation and the factors shaping this implementation. By focusing on combining business model innovation as the primary analytical framework with institutional theory and the RBV, the discussion highlights how circular economy adoption is shaped by the interaction between external pressures and internal organisational capabilities. The findings demonstrate that while circular economy principles are widely acknowledged and recognised within the Finnish food sector, their translation into business model innovation varies significantly across businesses. It is generally accepted that the specific

implementation and innovation levels differ among companies, particularly those of different size, market sector, as well as amount of stakeholders.

## **6.4 Alignment with the Theoretical Framework**

### **6.4.1 Business Model Innovation**

From a Business Model Innovation (BMI) perspective, the cases illustrate how circular economy principles are reflected in value proposition, value creation, and value capture in different ways depending on firm size and position in the value chain. Fazer has worked CE principles into their business model through a vast range of different innovations that impact their value premise, value creation, as well as value capture. This can be seen in their production of xylitol, which is formed from oat hulls, a byproduct (Sidestream) of their oat milling process, used to create oat flakes, oat flours, oat groats, oat bran, as well as Fazer oat pure oil (Fazer Mills, n.d.). This creates a new revenue stream for their Xylimax chewing gum and pastilles, from what would have previously been food waste (Fazer Group, 2023). Due to Fazer's industrial upcycling strategy, the firm has been recognised with sustainability awards in Finland, such as the "Circwaste – Towards Circular Economy in Finland" project's circular economy award (Fazer Mills, 2021), aligning with the broader CE goals of turning waste into value (Fazer Group, 2021; FoodIngredientsFirst, 2022). Additionally, Fazer has also collaborated with partners such as UPM Specialty Papers in order to create recyclable packaging solutions for their products, this collaboration supports the ease of recycling the products while keeping quality at constant, something that consumers often worry about when sustainability enters (UPM Specialty Papers & Fazer, 2024). These different initiatives clearly demonstrate a shift in Fazer's value position towards sustainability-oriented products, additionally monetising their side streams from what used to be cost centres through value capture.

In contrast to incremental innovation within established firms, the core business model of ResQ Club, the Finnish tech provider, built their business model entirely around circular economy principles. Their mobile app connects consumers with businesses that have extra and surplus food. For the consumer, this results in discounted meals and for ResQ confirmation of their CE principles of value proposition and capture. The extra and surplus food that would usually go to waste is then sold through a marketplace in each location. This results in a revenue or profit from a possible loss and contributes to waste reduction (ResQ Club, n.d.; ResQ Club, 2021). This prime example of a successful circular business model that maximises the utilisation of products enhances the value creation logic.

A similar pattern of operational BMI can be observed in the fast-food sector. CE innovations in Hesburger include turning used cooking oil into renewable diesel through collaboration with the energy provider Neste, the world's leading producer of sustainable aviation fuel (SAF) and renewable diesel. This is done when used French fry cooking oil from the restaurants is repurposed into renewable diesel in a 4-step process (Neste Corporation 2021; Neste 2023, Man Engines 2025):

- Used cooking oil is collected from Hesburger franchises with the same trucks that deliver the fresh items.
- Oil is cleaned and filtered to remove any leftover food or impurities.
- Cleaned oil is sent to a refinery for Hydrotreatment, which converts fats and oils into biodiesel.
- Distribution of biodiesel.

This repurposed oil is then used by Hesburger in their own logistics department to fuel their own transportation, which significantly reduces their emissions and is able to create a tangible closed-loop for their oil waste (Helsinki Times, 2023). This type of contribution reflects change in value creation, where waste products are not fully disposed of; however, rather to turn it into an input for sustainable logistics. Additionally, this contribution also reflects changes in value capture as there is an increase in cost savings and a reduction in emissions. Furthermore, Hesburger has shown further commitment by increasing plant-based menu offerings, which in turn contributes towards repositioning of their own value proposition in order to appease broader environmental and health trends.

At the retail level, circular business model innovation takes a different operational form. K-Supermarket, for example, is owned by a larger firm called Kesko Group, a firm that focuses on grocery trade, building/technical trade, as well as car trade across the Baltic and Nordic region. K-Supermarket stores also implement other practices related to CE that align in order to shape their business models. Some examples include forecasting, discount-pricing for goods that are close to expiry (red stickers), alongside partnerships with Gasum to collaborate by processing any excess food-waste into biogas (Kesko, 2025). This exemplifies both value creation and capture as K-Supermarket creates a new product out of waste and turns this into a sustainable profit. By involving the firm with practices such as these, it allows K-Supermarket to not only reduce their excess waste, however also to transform their logistics and operational processes. This is done by focusing on developing an integrated approach towards CE while maintaining their everyday retail operations, the firm keeps up with their daily requirements while also implementing new factors that directly benefit them and sustainability. Another example from K-Supermarket is where the firm takes edible but unsellable produce and repurposes it into a new edible product. This is done with what is considered to be “non-aesthetic” food, then turned into products such as soups, where customers are less likely to want to purchase the fresh fruits because they are not as aesthetically pleasing as others. Waste streams are also a major contributor of biogas production; old waste becomes repurposed into biogas and then is used in other value-added products (Kesko, 2025; Kesko, 2024).

#### **6.4.2 Institutional Theory**

When it comes to circular practices, owing to its size and market position, Fazer is subject to institutional pressures at both national and EU levels, particularly regarding waste reduction and resource efficiency. One example of a sustainability commitment directly from Fazer is that they aim to focus on carbon reduction targets, one of these targets being to reduce their

greenhouse gases by 42 percent by the year 2030, whilst also increasing their use of biogas, which is generated from their own food waste, for their transport across the company (Gasum & Fazer Bakery Finland, 2024). Such strong sustainability expectations create a sense of urgency for firms to integrate circular economy principles into their operations. This is particularly seen in contexts where regulation, alongside public opinion, values environmental performance and sustainability as a firm. In this thesis, using IT helps explain exactly why major food companies such as Fazer, Hesburger, K-Supermarket, and smaller companies such as ResQ Club, venture into circular initiatives such as renewable gas, recyclable packaging, and food longevity in order to maintain their legitimacy as well as excel in their competitive position in a sustainability-focused market.

Institutional pressures can be directly visible when reflecting on ResQ Club's growth, where aims to reduce food waste across the EU, is taken by both consumers and firms. Firms aim to reduce food waste to meet guidelines set by Governmental bodies, and consumers aim to help food waste reduction by buying surplus food at discount prices. Many similar examples have arisen such as websites/applications and tangible opportunities, such as red stickers in grocery stores. The EU aims to significantly cut down on any excess food by 2030, which is directly supported by ResQ Club's operations, where the firm reduces excess and wasted food through their app, a technological invention (European Social Fund Plus, 2022), by lowering the price of food near its deadline and allowing it to have a second chance. This not only appeals to consumers who are aiming to be more sustainable, but also to consumers who would like to save money. Therefore, the consumer demand for sustainability alongside the policy emphasis on responsible consumption, strengthens the relevance of the platform provided by ResQ Club, which encourages restaurants/cafes and other retailers to adopt the platform as part of their own CE strategies.

Circular initiatives for Hesburger are reflective of the pressure stemming from environmental regulations; these pressures are often evolving and relate to consumer expectations of sustainability in the fast-food industry. Hesburger's move towards renewable energy and development to offer more plant-based meal options is a firm sign of responsiveness to institutional demands for reduced greenhouse gas emissions as well as lower environmental impacts. This is something that is of high significance in Finland, where societal awareness of climate issues, as well as policy drivers which are related to renewable energy and the reduction of emissions, motivates firms such as Hesburger to adapt their traditional business models so that they are able to coordinate with circular principles.

In terms of institutional pressures, Kesko's main sustainability strategy decidedly focuses on their commitment to reduce their food waste by half by the year 2030, alongside increase in how much they recycle, as well as meeting the EU expectations related to national climate and waste reduction frameworks (Kesko, 2025). In terms of regulatory norms and consumer awareness, Kesko has succeeded in a widespread adoption of internal waste management, which aligns directly with regulatory norms set by the government bodies and authorities in Finland, whilst consumer awareness of the brand directly increases store-level practices which include sorting and donating and surplus food the company has. IT helps to explain

why Kesko invests time and money into complying with their systemic circular practices, this is because compliance with both policy and social expectations is essential towards maintaining legitimacy amongst stakeholders. For example, Kesko has committed to halving food waste in its grocery trade division by 2030, and by the end of 2024 had already achieved significant reductions against this baseline, reflecting the firm's response to regulatory and societal pressure to improve resource efficiency and waste management (Kesko, 2025).

### **6.4.3 Resource-Based View**

While institutional pressures create common expectations, the Resource-Based View explains why firms differ in their capacity to respond to these pressures through circular business model innovation. Due to Fazer's internal resources and capabilities, this benefit allows the firm to shape its ability to innovate within a CE. This can be seen in their investments with biogas partnerships, renewable gas, as well as their advanced processing facilities, which underscores an internal capability to leverage technological assets for sustainability outcomes (Gasum & Fazer Bakery Finland, 2024). Additionally, due to the size of their company, alongside brand popularity comes financial strength and an established research and development (R&D) infrastructure. This allows Fazer to strongly invest in large-scale projects which can benefit them financially, sustainably, as well as in the public eye, such as their xylitol factory and biogas logistics solution. Such capabilities of a firm allow them to differentiate themselves from smaller firms by demonstrating how internal resource endowments can influence both the depth and the scope of circular business models.

The digital platform technology and end user network used by ResQ Club's, confirmed their internal capabilities, which are fundamental resources that enhance their circular business model. The company's app and partner ecosystem demonstrate how the use of technological assets and organisational dexterity can shape circular innovation. It allows them to scale rapidly across local cities and venture into international markets. They are also able to attract and integrate with a network of food partners. This relational capability supports their value creation and expansions. This demonstrates that internal and external resources are critical determinants of successful circular economy implementation.

Due to the internal capabilities of Hesburger, the firm is able to implement more circular practices. One example of this is their collaboration with Neste, where Neste provides technical resources that Hesburger would not be able to independently develop, meaning that Hesburger would not be able to provide the biodiesel without Neste. This shows how relational resources are able to contribute towards circular innovation, and that collaboration can be an essential factor that contributes strongly towards a CE future. However, Hesburger still makes great use of its own personal production capabilities, which include its plant protein facilities, which allow them to cater to a wider market as well as offer more sustainable products. Both factors exemplify the importance of resource networks as well as firm-specific capabilities in a business, focusing on how critical these are when implementing circular business model innovations.

Using the operational scale and logistical capabilities of Kesko for K-Supermarket, a company can implement circular solutions that may be a challenge to adopt for smaller retailers. Operational capabilities and material resources (centralised waste management, data-driven forecasting and specialised infrastructure for biogas conversion) emphasise how they can be used to support CE. Supply planning and sustainability reporting becomes useful in adapting business models to integrate circular principles. The dept of implementation is supported by internal resources and competencies. This is reflected in Kesko's grocery trade, where large-scale data systems and logistics networks enable the systematic reduction of food waste and the conversion of unavoidable waste streams into biogas for energy use (Kesko, 2024).

#### **6.4.4 Other Factors**

In addition to the three core theoretical perspectives, the analysis also draws on complementary analytical frameworks (namely the 9R framework, side-stream utilisation, and the UN Sustainable Development Goals) to further contextualise the firms' circular practices. Fazer's strategies align with multiple stages of the 9 R's framework in the circular economy. Refuse and rethink are evident in efforts to phase out palm oil and introduce plant-based alternatives. Reduce is central to commitments such as a 50 per cent cut in emissions and food waste. Reuse, refurbish, and repurpose appear in programmes like Makeamoka, which resells aesthetic surplus candy, and production processes that turn oat side-streams into xylitol. Recycle and recover initiatives include onsite energy recovery from by-products across production sites.

These actions are strongly aligned with several UN Sustainable Development Goals. SDG 12 on responsible consumption and production is addressed through waste and packaging reduction strategies. While SDG 9 on infrastructure is supported via initiatives that build on infrastructure capabilities to offer side-stream opportunities, SDG 13 on climate action is directly served by greenhouse gas emission reduction efforts and investments in renewable energy.

Fazer demonstrates side-stream utilisation through its innovative use of oat hulls converted into xylitol. This approach not only minimises waste but also adds value by creating a secondary product from material that would otherwise have limited use. The transformation of oat hulls into xylitol exemplifies how side-streams can contribute to resource efficiency and sustainable production within the food industry (Fazer Group, 2021).

The 9 R's framework offers a helpful framework to assess ResQ Club's circular actions. The company operates primarily within the "Rethink," "Reduce," "Reuse," and "Recover" levels. By changing how food is distributed and consumed, they encourage more efficient resource use. Their model does not involve physical recycling or remanufacturing but rather prioritises higher-order strategies in the hierarchy by rethinking food logistics. From a Sustainable Development Goals (SDG) perspective, ResQ Club's work directly supports SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action) by addressing food waste, greenhouse gas emissions, and consumption efficiency. Indirectly, it supports

SDG 2 (Zero Hunger) and SDG 9 (Industry, Innovation and Infrastructure) through innovation and improved access to affordable food.

Hesburger's activities reflect alignment with several circular economy frameworks, including the 9 R's (refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle). For example, cooking oil is repurposed into fuel, and textiles are recycled into furniture, representing resource recovery. These actions also support the United Nations Sustainable Development Goals (UNSDGs), specifically Goal 12 (Responsible Consumption and Production) and Goal 13 (Climate Action).

For example, Hesburger employs side-stream strategies by utilising waste materials generated in its operations to promote circularity. One example is the collection of used cooking oil from its restaurants in Finland and Latvia. This oil is then converted by partners such as Neste into renewable diesel fuel, which is used in Hesburger's delivery vehicles. By repurposing cooking oil that would otherwise be discarded, Hesburger reduces waste and supports sustainable fuel alternatives, contributing to a circular approach within its supply chain (Neste, 2021).

K-Supermarket's activities reflect several circular economy strategies. Red-label discounting and food repurposing align with the principles of reduce, reuse, and recycle. The biowaste-to-energy system is an example of resource recovery, keeping materials in use for longer. These actions contribute directly to the UN Sustainable Development Goals, particularly SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action) (Prokic et al. 2023). While the full Product-as-a-Service model is not present, the retailer indirectly supports such concepts by extending the life cycle of food items and collaborating across the value chain.

K-Supermarket employs end-of-life strategies to reduce food waste by using a red sticker system to mark products nearing their expiration dates. These stickers signal to customers that items are being sold at a discount to encourage quick purchase and consumption. Observations in Helsinki stores revealed that the red sticker sections are actively visited, often resulting in minimal leftover stock. This practice effectively extends the shelf life of food products, reduces waste, and supports circular economy objectives by keeping food in the consumption cycle for longer (Kesko, 2025).

## **6.5 Summary Comparison**

The cross-case analysis demonstrates the importance when circular economy principles are included into business model innovation as it is shaped by the interaction between institutional pressures and firm-specific resources. While regulatory and societal expectations create a common framework for circular economy engagement, companies respond differently depending on their focus, internal capabilities and strategic orientation. The

importance of customer response drive demand for circular products/services (their purchasing, usage, and disposal decisions)

Established food companies like Fazer, Hesburger, and K Supermarket pursue incremental business model innovation, embedding circular economy principles to enhance their existing business models. These companies focus on innovations that promote efficiency improvements, waste reduction, and side-stream utilisation while maintaining their core revenue logic. This reflects path dependency and risk aversion associated with protecting established market positions. In contrast, newer businesses such as ResQ Club manage to embed circularity from the start into the core of their value proposition. These findings suggest that circular business model innovation is not uniform but is rather contingent in terms of organisational context, resource endowments, as well as the nature of institutional pressures.

Institutional theory aids the explanation why circular economy practices are widespread across the cases. It is however insufficient to account for variation in depth and form of implementation. All companies operate within the same Finnish and European institutional environment. They are , characterised by strong policy frameworks, sustainability roadmaps, and societal expectations relating to responsible business conduct (Sitra, 2016; EEA, 2021). To create a shared baseline of circular economy engagement and encourage pressures firms to demonstrate compliance and legitimacy.

The findings indicate that institutional pressures primarily influence the direction rather than the extent of circular business model innovation. Regulatory and normative expectations motivate firms to adopt circular practices, but it does not prescribe how these practices should be integrated into their business models. As a result, companies do not always implement circular practices in ways that align with their existing structures and capabilities. Earlier research argued that institutional forces often lead to symbolic or incremental change unless accompanied by internal drivers of transformation is supported by the findings. (DiMaggio & Powell, 1983; Scott, 2014).

In the case of ResQ Club, institutional pressures appear to function as enabling conditions rather than constraints. The Policy created emphasis on food waste reduction and responsible consumption that further created market opportunities that the company actively exploits. It is suggested that institutional environments can foster innovation and firms are able to align their business models with societal goals, rather than merely responding to regulatory demands.

In terms of translating CE principles into BMI, the findings suggest that Finnish food companies translate circular economy principles into business model innovation mainly through incremental rather than radical change. For established firms such as Fazer, Hesburger, and K Supermarket, circular economy initiatives tend to enhance existing business models by improving efficiency, reducing waste, and strengthening sustainability-oriented value propositions. These firms integrate circularity into value creation

processes while maintaining their core business logic, with good examples such as through side stream utilisation, renewable energy use, and food waste reduction.

It confirms previous research where it was noted that firms often pursue incremental business model innovation due to path dependency and the need to protect established revenue streams (Geissdoerfer et al, 2017). Circular economy principles are embedded within operational practices and this approach allows firms to respond to sustainability demands while minimising disruption to existing structures, instead of redefining how value is created and captured.

In contrast, ResQ Club illustrates a fundamentally different mode where circular economy principles are embedded at the core of the business model. Their platform-based model directly addresses food waste by redefining value creation and capture around surplus redistribution. This clearly supports the argument that start-ups or digitally oriented businesses are often better positioned to implement radical circular business models. This is due to fewer structural constraints and greater organisational flexibility (Bocken et al, 2016). The comparison highlights that business model innovation in the context of the circular economy is not uniform, but contingent on firm type and strategic positioning.

### 6.5.1 Summary Comparison Table

Company	Digital Surplus Model	Side-stream Utilisation	CE Innovation	Food Waste Target
<b>ResQ Club</b>	Mobile app for surplus	No	Digital access and awareness	Implicit via sales
<b>Fazer</b>	No	Yes (Oat hulls to xylitol and heat)	Smart packaging and closed-loop energy	Yes (50% reduction by 2030)
<b>Hesburger</b>	No	Yes (Used oil into diesel)	Circular economy partnership with Neste	No explicit target
<b>K Supermarket</b>	Red stickers	Yes (Inedible food to biogas)	Data-driven stock management	Yes (50% reduction by 2030)

### 6.6 Restating Key Findings

In response to the research question on Finnish food companies, this study finds that these companies translate circular economy principles into business model innovation each on their

own in diverse ways. It ranges between incremental operational improvements to fully circular platform-based models. This process is influenced by a combination of institutional pressures and firm-specific resources and capabilities while also complying with EU principles.

In response to Research Question 1, the findings show that Finnish food companies translate CE principles into business model innovation primarily through changes in value creation rather than value capture. Incremental innovations are preferred among established firms.

Regarding Research Question 2, institutional pressures provide strong incentives for CE engagement across all cases but do not determine the depth of the company's innovation. Regulation and societal expectations shape what firms do, but not how far they go.

In response to Research Question 3, firm-specific resources and capabilities are the decisive factor explaining variations. Access to high financial capacity, technological infrastructure, partnerships, and intangible digital assets determine whether CE principles result in operational optimisation or fundamental business model transformation. The Finnish institutional context provides strong incentives for circular economy engagement, but the ability to innovate at the business model level largely depends on internal organisational factors and access to critical resources.

The findings from this study demonstrate that Finnish food companies engage with the CE in varied ways. They often focus on waste reduction, side-stream utilisation, and innovative business models. ResQ Club indirectly contributes to CE by enabling consumers to purchase surplus food at a lower price, thereby diverting food waste from landfills (ResQ Club, 2023). Fazer demonstrates its strong engagement with side-streams, most notably through the conversion of oat hulls into xylitol and the use of smart packaging to extend food shelf life (Fazer, 2022).

Hesburger's primary contribution lies in its use of waste oils and plastics to produce staff uniforms and food trays. By doing it, they are creating innovative applications for otherwise discarded materials (Hesburger, 2021).

K-Supermarket plays a significant role in CE through advanced data-driven supply chain management, biogas production from unsellable food. Their discount "red stickers" to reduce food waste (Kesko, 2022) is well used and popular with customers who then save money.

The resource based view provides critical awareness into the reason why companies differ in their ability to translate circular economy principles into business model innovation. In the findings it indicates that firms with substantial financial, technological, and organisational resources are better equipped to implement circular initiatives at any scale. Fazer's investments in processing infrastructure and renewable energy partnerships indicates and exemplifies how resource availability enables more advanced circular solutions (Gasum & Fazer Bakery Finland, 2024).

Similarly, Kesko's centralised logistics systems and data-driven waste management capabilities allow for systematic implementation of circular practices across a large retail network. These capabilities support the argument that organisational routines and technical expertise are key enablers of circular business model innovation (Barney, 1991).

In the case of Hesburger it highlights the importance of relational resources (intangible assets) . Their social connections, and collaborating with external partners such as Neste, accesses the company's capabilities that may be costly to develop internally. This reinforces the view that circular economy innovation often depends on inter-organisational collaboration and network-based resources (Bocken et al, 2019).

ResQ Club illustrates that their circular business model innovation relies on intangible resources such as digital platforms and user networks. This does not require extensive physical assets. For them, technological capabilities and organisational dexterity serves as critical resources for embedding circularity into value creation and capture mechanisms.

These findings align with the research question by showing how Finnish food companies operationalise CE through different practices, each addressing waste and sustainability challenges in their own unique ways (site visits, author's observations, 2024).

## **6.7 Comparison With Previous Research**

The results of this study align with previous literature by highlighting the food sector as a central area for CE interventions, that focus particularly in addressing food waste and resource efficiency (Borrello et al. 2017; Caldeira et al. 2019). Like prior studies, this research found that digital platforms such as ResQ Club act as intermediaries that extend the life of food products by creating new markets for surplus goods (Schanes & Stagl, 2019). This is then also beneficial to the customer. Similarly, the importance of side-stream valorisation, as seen with Fazer's oat-based xylitol, supports the findings from Kirchherr et al. (2017) that CE innovation often arises from industrial symbiosis and technological innovation. However, this study also finds that consumer-facing practices are often more price-driven than sustainability-driven. This diverges slightly from literature suggesting rising consumer awareness as a major CE driver (Camacho-Otero et al. 2018).

The research findings contribute to circular economy research by demonstrating the importance of examining circularity at the business model level rather than focusing solely on practices or technologies. The combination of business model innovation with institutional theory and the resource-based view provides the study with an understanding of how and why firms engage with circular economy principles.

Taking a practical perspective, it is suggested in the results that policy makers should recognise that institutional pressure alone is insufficient to drive deep business model transformation. Support mechanisms that enhance firms' capabilities (e.g. funding for

innovation, knowledge sharing platforms, and partnerships) are essential to promote more substantial circular business model innovation. Companies should be aware that the findings highlight the need to align circular economy initiatives with firm-specific resources and strategic goals rather than adopting one-size-fits-all solutions.

This thesis works to contribute to the already growing body of research on CE in order to provide others with an in-depth comparative analysis which presents exactly how CE principles are able to translate into BMI by food companies that operate in Finland. Although existing research prevails, many tend to focus on national strategies and sector-level indicators, whereas this study focuses on how firms are able to respond differently to institutional constitutions that are similar. By focusing on this, the thesis addresses the gap in the literature which links to the practical implementation of CE principles within firms, particularly those in a context of a country that is regarded a global leader in CE development.

By comparing companies of different sizes, ownership structures, as well as positions in the food industry and system, this thesis demonstrates that CE adoption is not only shaped by general policy and societal expectations, however, also that firm-specific resources, business relationships, and capabilities are essential and relevant to decisions that can be made. The thesis findings show that beneficial factors for a firm's transition to becoming circular is their access to financial resources, technological infrastructure, as well as their organisational scale. Companies with less access will generally have less ability to become circular. The amount of easy access to these factors plays a significant role in both the scope and depth of circular BMI. This shows that one very important limitation that exists in current CE research is that many assume that strong regulatory frameworks are the most important factor to be able to drive a transformative change within a firm.

Furthermore, the comparative approach that is adopted in this thesis is used to reveal how different types of business models are used to either enable or constrain a firm's circular practices. Producers, digital platform-based companies, as well as retailers, engage with CE principles in different ways. This highlights the differences they have over control of material flow and value creation processes. Retailers tend to focus on excess leftover food, producers tend to focus on decreasing food waste during production, and digital platform-based firms are able to focus on a broader spectrum. By analysing the variations that stem from within the national context, the thesis provides a deeper refinement in understanding just exactly how CE principles are operationalised in practice. This contributes to academic knowledge and debates in regards to the CE by demonstrating the importance of coordinating institutional perspectives with resource-based explanations when firm-level responses are analysed.

In addition to the theoretical contribution of the thesis, empirical insights which can lead to support in learning and diffusion of circular practices across the food sector are also offered. By highlighting concrete examples of how circular solutions are used across different types of companies, the study provides further basis of knowledge for other firms to identify practices that are able to be adapted to fit best. These practices can potentially offer the

opportunity for other firms to adapt and replicate those that suit them best based on size, organisation, and resource constraints. Therefore, the thesis contributes to knowledge as well as provides a deeper and practice-oriented understanding of how CE principles are able to be translated into viable business models for different types of firms.

## **6.8 Fit With Frameworks**

The findings the researcher observed show clear alignment with several Sustainable Development Goals (SDGs), particularly SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 2 (Zero Hunger), as all companies address waste reduction and resource efficiency in different ways. Their initiatives also connect with SDG 9 (Industry, Innovation, and Infrastructure), demonstrated by Fazer's packaging innovations and Hesburger's uniform production, and SDG 8 (Decent Work and Economic Growth), with new industries and green jobs arising from waste valorisation.

Additionally, some initiatives also contribute indirectly to SDG 6 (Clean Water and Sanitation) by reducing the environmental impacts of food production. Applying the 9R framework (Potting et al. 2017), companies engage with strategies such as Reduce (food waste minimisation), Reuse (ResQ surplus food), Recycle (biogas production), and Recover (side-streams into new products). Higher-order strategies, including Repair, Refurbish, and Remanufacture, are largely absent, reflecting their impracticality in the food industry owing to hygiene, safety, and quality constraints (Borrello et al, 2017).

## **6.9 Implications for Circular Economy Theory and Practice**

These findings indicate that institutional pressure alone is insufficient to drive comprehensive transformation of business models. CE in Finland's food sector seems to be advancing through practical measures aimed at reducing waste, creating new value streams, and integrating digital tools. The companies studied demonstrates collectively that CE is achievable through both consumer-facing platforms (ResQ, K-Supermarket) and industrial innovation (Fazer, Hesburger). Together, they contribute to national and global climate goals by reducing methane emissions from food waste, lowering carbon footprints, and promoting the recovery of resources.

However, the variation in approaches indicates that the implementation of circular economy principles remains fragmented across business models. Each company excels in specific areas but then lacks a fully integrated CE strategy. It is also recommended that policymakers should complement regulatory frameworks with mechanisms that strengthen company capabilities, such as innovation funding, partnerships, and knowledge-sharing platforms. In response, companies should be able to align their circular initiatives more appropriately with internal resources and strategic goals rather than adopting generic solutions.

## **6.10 Limitations and Future Research**

This study is limited by its small sample size and reliance on secondary data, as well as the absence of direct consumer perspectives. Although secondary data provides valuable contextual understanding, it may limit the depth of insight into the internal strategies and motivations of each company. The initiatives such as ResQ Club and red stickers depend heavily on consumer participation but are a challenge to determine.

Future research could incorporate interviews across multiple companies to gain direct insights from decision-makers. Additionally, consumer behaviours should also be examined more closely, particularly the extent to which purchasing decisions are motivated by price rather than sustainability. Comparative studies between Finland and other countries would also provide valuable insights into how national context shapes CE practices in the food industry.

## 7.0 Conclusion

This study analysed the integration of circular economy (CE) principles within the business models of selected Finnish food sector companies, specifically ResQ Club, Fazer, Hesburger, and K-Supermarket. The study applied a theoretical framework integrating Business Model Innovation (BMI), Institutional Theory (IT), and the Resource-Based View (RBV), supplemented by the 9R framework and the United Nations Sustainable Development Goals (UNSDGs), to provide a structured analysis of CE operationalisation across firms of different sizes and positions within the value chain. The findings also demonstrate that while CE practices are present across all the case studies, the scope and strategic role of circularity differ substantially depending on company resources, institutional pressures, and business model structures.

This study addressed its research aims through findings which show that CE integration varies significantly according to company size, resource availability, and position within the value chain. Large companies tend to adopt CE through either systemic business model innovation or efficiency-driven process improvements, while smaller companies are more likely to embed circularity directly into their core value proposition through digital and relational business models. The research further identifies key enablers and constraints of CE adoption, including institutional pressures, firm-specific capabilities, operational complexity, and consumer behaviour.

The case of Fazer demonstrated how a large and resource-rich manufacturer was able to translate the CE principles into strong BMI by integrating their circularity processes across their production, value creation, as well as product development. Circularity is deeply embedded into Fazer's value proposition through advanced side-stream utilisation of converting oat husks (primary production lines) into xylitol production to chewing gum and pastilles (secondary production lines). This practice exemplifies resource efficiency and waste reduction, consistent with RBV assumptions regarding the strategic utilisation of firm-specific resources. Additionally, Fazer also showcases strong internal capabilities, which include their research and development (R&D) expertise, long-term supplier relationships, and alignment with Finland's national CE strategies. For example, Fazer demonstrates how CE can function as a strategic driver of competitive advantage rather than as a set of isolated sustainability initiatives. This helps confirm RBV assumptions that firms with substantial tangible and intangible resources are better positioned to pursue deep and scalable CE-driven business model transformations. Furthermore, institutional pressures, namely those linked to national CE strategies within Finland, as well as sustainability expectations, are a main factor for reinforcing Fazer's commitment to present measurable and systematic circular practices.

In contrast, Hesburger represents a case of incremental and process-oriented CE adoption rather than full business model transformation. This was evident through multiple factors, namely circularity, institutional pressure, as well as financial resources. Hesburger was able to show how circularity was primarily reflected through their value creation through

operational efficiency measures, such as converting used cooking oil into renewable fuel for its internal logistics and delivery services. Additionally, institutional pressures related to climate policy and public expectations were shown to play a large role in encouraging their visible and communicable actions. Institutional pressures in Finland, including regulatory expectations and societal norms, likely incentivise Hesburger's adoption of incremental circular practices. Furthermore, financial resources as well as established logistics played a pivotal role in enabling implementation; however, circularity at Hesburger remains focused on efficiency improvements within existing structures rather than on redefining the firm's core business model. This suggests that even large firms may favour targeted circular solutions when full business model innovation is perceived as costly or operationally complex. This means that Hesburger's circularity requires deeper logistics related to improving efficiency, such as reusing their own renewable fuel instead of setting up a new business model change, which would be more costly and require more complicated implementation.

K-Supermarket highlighted how a large retail group is able to leverage data, scale, and logistics infrastructure to implement its circular practices (especially while balancing central coordination), while independent store ownership occurs. Its CE principles are mostly visible in value creation and value capture through food waste reduction, surplus redistribution, and and biogas solutions in collaboration with external partners. For example, creating soup from unsold yet edible food, as well as discounted red stickered items, is a positive way to reduce food waste and redistribute surplus. On the other hand, K-Supermarket's collaboration with Gasum to provide them with spoiled and inedible food showcases value creation and capture as it is turned into biogas. Furthermore, institutional demands for both transparency as well as compliance play a major role in shaping systematic sustainability practices, showing stakeholders that K-Supermarket focuses on legitimacy in terms of providing sustainability. Furthermore, having access to firm-specific resources such as centralised infrastructure as well as data-driven forecasting, allows K-Supermarket to enable circular solutions that other smaller retailers would struggle to adopt for themselves. Access to centralised infrastructure and data-driven forecasting enables K-Supermarket to implement circular initiatives that may be challenging for smaller retailers, illustrating the role of firm-specific resources in CE adoption.

ResQ Club's initiatives provide another contrasting perspective as it shows how a small digital platform can build an entire business model around CE principles, despite limited financial and material resources. Circularity forms the core of ResQ Club's value proposition by directly addressing food waste through a digital redistribution of surplus food. The platform creates shared value for multiple , including food providers, consumers, and the company itself. For example, ResQ Club gains a small percentage from the sale, the original seller is able to make a sale of something that would otherwise likely not have sold, and the consumer is able to purchase an item at a lower price than usual. The business model relies fully on digital and relational capabilities rather than physical infrastructure, which allows ResQ Club to operate their app at a smaller level. Additionally, due to their size, institutional pressures are much less formal, as market demand and societal norms act as the primary

drivers of engagement. ResQ Club demonstrates how digital and relational capabilities allow smaller firms to construct CE-focused business models, highlighting the constraints associated with scalability and consumer-dependent operations, consistent with BMI and RBV considerations.

## **7.1 Limitations of the Study**

The study relied predominantly on secondary data sources, including company reports, sustainability publications, and academic literature, complemented by one interview and personal site visits. While this approach enabled a broad comparative analysis, it limited the depth and representativeness of firm-level and stakeholder perspectives. The missing perspectives include consumer attitudes beyond price sensitivity, employee perspectives within the companies, and longitudinal data to assess the long-term effectiveness of CE strategies. Furthermore, the study sample was restricted to four case companies, and despite their variation in size and business models, this constrains the generalisability of the findings to the wider Finnish or international food sector.

The findings confirm gaps already identified in available CE literature. Much research remains conceptual, with limited empirical work on how food companies apply CE in practice (Jurgilevich et al. 2016). Additionally, only a few studies address the consumer dimension, and in particular the comparison between affordability and sustainability, which emerged strongly in this research. The focus on repair, refurbish, and remanufacture is also largely absent from the literature on food CE, which reflects the inherent limitations of applying these strategies to perishable goods. These findings indicate that future CE research should place greater emphasis on side-stream utilisation and resource recovery strategies, particularly in the context of perishable food products, to address gaps identified in the literature (Jurgilevich et al, 2016). Moreover, existing research often examines firms of similar size within a single sector, limiting understanding of how firm-specific resources, inter-firm relationships, and financial capacity influence CE adoption. These are particularly relevant for food systems.

## **7.2 Contribution to Circular Economy Literature**

Despite the study's limitations, it addresses several gaps identified in the circular economy (CE) literature. Research on circular food systems remains largely conceptual, with limited empirical evidence on how CE principles are implemented in practice (Jurgilevich et al, 2016). This study contributes empirical insights into how CE is operationalised across different organisational contexts and positions within the food value chain. In particular, the findings confirm the relative absence of repair, refurbish, and remanufacture strategies in food-sector CE, reflecting the constraints associated with perishable goods and reinforcing the importance of side-stream utilisation and resource recovery.

By comparing firms of different sizes, structures, and business models, the study highlights the critical role of firm-specific resources, business relationships, and institutional context in

shaping CE adoption. The research successfully applies a robust analytical framework that integrates Business Model Innovation (BMI), Institutional Theory (IT), and the Resource-Based View (RBV) alongside the 9R framework, the Sustainable Development Goals (SDGs), side-streams, and resource recovery. By integrating BMI, IT, and RBV, this framework provides a theoretically grounded analysis of CE practices, highlighting how firm resources, institutional pressures, and business model configurations jointly shape CE adoption in the Finnish food sector.

The cross-case comparison reveals both distinctive firm-level contributions, such as Fazer's advanced side-stream innovations, and shared sectoral objectives, including the reduction of food waste in line with the 2030 sustainability targets. In addition, site visits enriched the analysis by providing observational evidence that complemented and validated findings derived from company reports and secondary data sources.

### **7.3 Future Research Directions**

Future research could build on this study by incorporating a larger number of qualitative interviews with managers, employees, consumers, and policymakers to capture a more comprehensive range of perspectives. Comparative studies between Finland and other countries would also strengthen understanding of how national contexts, such as climate, legislation, and consumer culture, shape CE practices by region or in the EU.

Furthermore, future studies could employ quantitative methods to measure the actual environmental impacts of specific CE initiatives, such as waste reduction percentages or greenhouse gas savings. In particular, consumer behaviour would also warrant closer examination to focus on the balance between price sensitivity and sustainability concerns in shaping demand for CE-based solutions.

In summary, this study demonstrates that while Finnish food companies are making meaningful progress in integrating circular economy principles, CE adoption remains uneven and strongly shaped by firm size, resource endowments, and institutional context. Large firms tend to implement CE through systemic or efficiency-driven approaches, while smaller, digitally oriented firms can embed circularity directly into their core business models. Innovations in side-stream utilisation, resource recovery, and digital redistribution platforms represent promising pathways for advancing circular food systems. Collectively, these findings contribute to a more nuanced understanding of how circular economy principles can support sustainable transformation within the food sector and align with Finland's broader sustainability objectives.

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## Appendix 1: Interview Guide

### ***Introduction & Background***

1. How did ResQ Club start? What inspired the founders to create this company?
2. Are there any key circular economy principles that guide ResQ Club's business Model?

### ***Business Model & Operations***

3. How has ResQ Club's business model changed since its launch? Have you had to pivot or adapt based on market demand or regulations?
4. What role do businesses and restaurants play in Finland's food waste reduction efforts? How easy or difficult is it to get them involved?

### ***Policy & Challenges***

5. How has Finland's policy framework (e.g, government incentives, regulations) supported the growth of food waste reduction initiatives like ResQ Club?
6. What are the biggest challenges ResQ Club faces in expanding its impact in Finland? Are these challenges specific to the Nordic region, or do you think they are Universal?

### ***Expansion & Future Growth***

7. Do you plan to expand beyond Finland and the Nordics, perhaps with Southeast Asia? If so, what markets are you considering?
8. What are the biggest challenges you foresee in achieving these long-term goals?

### ***Innovations & Vision***

9. Are there any partnerships, technologies, or trends that excite you for the future of food rescue and circular economy solutions?
10. Looking 10 years ahead, how do you think the food rescue industry will evolve, and how will ResQ Club adapt to those changes