

# **The suitability of eco-platforms reducing food waste for hotel food service providers: expectations and experiences**

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<b>Degree programme</b> Hospitality, Tourism and Experience Management	
<b>Report/thesis title</b> The suitability of eco-platforms reducing food waste for hotel food service providers: expectations and experiences	<b>Number of pages and appendix pages</b> <b>53 + 3</b>
<p>Food waste globally has major impacts to environmental, economic and social aspects of sustainable development. The importance of the need to make changes in different industries is seen for example from the UN Sustainable Development goals and the new EU edict aiming to measure and reduce food waste. It is important for different industries such as the operators within the hospitality industry to collaborate with different companies and organizations to reduce food waste together more efficiently.</p> <p>The thesis is written in collaboration with ResQ Club, a platform that is working with different food service providers with a common goal to reduce food waste. The objective in this thesis is to map out the expectations of hotel food service providers towards the platform and in addition map out experiences from hotel food service providers who are using it already. The aim is to find out the level of suitability of this platform as a method to reduce food waste, specifically in hotels in Helsinki.</p> <p>The theoretical framework addresses three different topics: corporate social responsibility, food waste and its terminology and innovations in hospitality industry. The theory helps to describe the motives of companies or hotels to work more sustainable, addressing the issue of food waste, its effects and why reducing it has become more important and as well what is the role of innovations in hotels. Two research methods were conducted in this thesis: qualitative semi-structured interviews and participation observation in a food waste reducing workshop held by Motiva.</p> <p>Results from the empirical research give an overview of the suitability of the platform. On an idea level, all of the respondents agree that ResQ is a good idea, however when it comes actually using it the results differ from each other. The main differences seem to be within the attitude towards it, as the economic benefits do not raise too high. What makes the experiences more profitable is when considering more the marketing and image value of the platform. The suitability highly depends on the strategies and operations of an individual hotel rather than considering the suitability on the hotel industry as a whole. The participation observation results also highlight the need the of co-operation and modern solutions that are suitable for modern food service operations.</p>	
<b>Keywords</b> Food waste, accommodation sector, corporate responsibility, innovation	

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# 1 Introduction

A Finnish executive chef, Aki Koivuniemi (2019) comments following in a recent article: "Food waste is pointless. We have so many climate related issues, where we cannot affect right now or stop from happening, for example driving. Food waste is in Finland and globally a big contributor to climate change. We could easily reduce it, if we would just think a little more" (Harju 2019).

Reducing food waste has become a major issue in many countries and sectors all around the world during the recent years. To highlight better the criticality issue of food waste, the United Nations has a goal to halve the food waste by 2025. However, the target could be achieved even faster with the collaboration of different companies and organizations. (Stuart 2009, xxi.) Besides the UN goal, the EU commission has prepared a new edict that will standardize defining food waste and its monitoring and as well reporting and its requirements in Europe. (Luonnonvarakeskus 2019.)

Food waste is a substantial global issue. The impacts of the matter are seen in the environment, economy and in our society. Environmentally food waste has a high carbon footprint, the water used to produce the food wasted is also lost or wasted and a large portion of the food waste ends up in landfills. The actual food wasted is also reflecting to the economies. In industrialized countries the wasted food is equivalent to 680 billion US dollars wasted (approximately 614 billion euros) and in developing countries to 310 billion US dollars (approximately 280 billion euros). (FAO.) In addition to the environmental and economic impacts, the social aspect is an urgent issue as well. One in nine people in the world are malnourished, which is due to the fact that 800 million people do not have the same access to food as the people in the developed countries. (TRVST.)

Hospitality industry is also contributing to the global food waste problem. This has led to many practitioners to believe that hospitality industry has a responsibility to have a corporate social responsibility strategy and additionally also to promote it (Zizka, 2016). Furthermore, even though there is a clear pressure from the society and from the growing niche of sustainable aware consumers (Singal & Rhou 2017, 3), the actions against food waste are also researched to reduce costs and possibly helping in maximizing the revenue.

In contrast to the inevitable and serious impacts of food waste, there are also a lot of actions done and starting to be done against it. Examples on the waste reducing actions in hotels are training and motivating the kitchen staff, recycling everything that can be recycled and changing the menus to more waste-friendlier options. Besides these types of ac-

tions, the digitalization has made possible new types of technology, such as eco-innovations or platforms towards reducing food waste to enter the markets. There are innovations directly designed for hotels to help the kitchen.

As stated in the paragraph above, there are multiple actions where to choose from. However, there are not a lot of explanatory or describing research done on the expectations or experiences of hotel food service providers on these eco-platforms. Especially from the perspective of the growing hotel market of Helsinki.

### **1.1 Collaborator company ResQ Club**

One of these platforms against food waste is a Finnish start-up ResQ Club, which is the company that this thesis will be done in co-operation with. It focuses on reducing food waste in the city of Helsinki by connecting restaurants, cafes and grocery stores to consumers who appreciate quality and affordable food. Examples from the Helsinki food service market are Luckiefuns restaurants, different K-Markets, Robert's Coffees, Sandro, Teboil and different hotels which are the main subject of this research. Their mission is to create and work towards societies that are food waste-free by starting from the operators in the food service industry. Besides the product being a technological platform, they emphasise that they want more co-operation with companies to reach their mission of a waste-free society. The CEO of ResQ, Sauli Böhm (2019), describes ResQ as an online marketplace for restaurants, cafes and grocery stores where consumers nearby can purchase and pick up the food from the premises. (ResQ 2019.)

They list as the benefits for the operators to get more sales from the otherwise thrown away food, new customers and waste reducing. In addition to the economic benefits for the operators, the environmental aspect is also there: 273 tons of CO<sub>2</sub> emissions reduced every month. To make the figure more concrete, this number count as for example 227 flights between Helsinki and New York. (ResQ 2019.) According to Böhm (2019), seven in ten meals put on the platform are sold. The start-up has been operating almost four years and has already grown in Europe, which means it can be found in other cities than Helsinki and countries than Finland as well. In Finland the reach of ResQ is in 61 cities, in Sweden in 13 cities, in Germany in two cities and in Poland in one. (ResQ 2019.)

## 1.2 Thesis objective and research questions

This thesis is aiming to map out, understand and describe the expectations and experiences of the hotel food service providers towards technological platforms related to sustainable development such as ResQ. The objective is to indicate the motivations from hotels' side towards eco-platforms and their suitability in the hotel environment. When researching and discovering the motivations this can lead to relevant data on how ResQ can strengthen and increase its market share within the Helsinki hotel industry. In addition to the possible increasing of the market share, it can provide relevant information how does the concept of ResQ fit to hotels when they consider it as tool to reduce or utilize their food waste. Because information and literature of food waste is still limited, in addition to the primary objectives, secondarily this research can provide relevant data towards knowledge and awareness of food waste in hospitality industry.

The main research question of this thesis is:

What are the expectations and actual experiences of the hotel food service providers towards technological platforms against food waste such as ResQ?

The sub-questions in this thesis are:

1. What drivers there are to reduce food waste in hotels?
2. Are eco-platforms seen in hotels as effective solution towards sustainable development?
3. Can eco-innovations be a part of the corporate social responsibility strategy?

The main research method in this thesis will be qualitative. The qualitative semi-structured interviews will be aiming to get information from a topic that has been either not at all or only a little bit researched previously (Hirsjärvi, Remes & Sajavaara 2009) The interviews will be conducted with the staff of the hotel food service providers who are using ResQ and as well as who are not using ResQ to provide information from both perspectives to map both expectations and experiences. The semi-structured interviews will be consisting questions about the food waste reducing and as well as the feelings, motivations and expectations towards eco-innovations or eco-platforms. The questions are formed with the help of the theory framework and tested with test interviews to strengthen the reliability in this thesis.

### **1.3 Thesis structure**

This thesis is containing seven chapters starting with the introduction chapter. The first chapter contains introduction to the thesis topic, introducing the collaborator company, objectives and the research methods used. Following the introduction chapter, the second chapter, corporate social responsibility will be introduced, as well its role in hospitality industry and its key drivers and barriers. In the third chapter, the food waste issue is discussed. First the issue will be discussed on a global level, followed by terminology and the food waste issue in hospitality industry, which has the main focus in this thesis. Furthermore, the raised consumer awareness towards reducing of food waste will be discussed. The hospitality subchapter will contain more information about the issue in hospitality industry, as in where it generates and what causes it. The chapter four will focus on the innovations and eco-innovations and the role of those in hospitality industry. The fifth, methodology chapter will present the research methods used in this research which are interviews and participation observation. After the methodology the results of both will be displayed and analysed, followed by further detailed discussion and answers to the research questions.

## **2 Corporate social responsibility**

Corporate responsibility (CR) is a term, which is strongly a part of sustainable development in the organizational level. "Corporate responsibility seeks to add value to an organization's activities by ensuring they have a positive impact on society, the environment and the economy" (Scott 2018). The corporate responsibility should be seen and have an effect in the workplace, marketplace, community and environment (Scott 2018).

Corporate responsibility is also strongly linked to the other very similar term: corporate social responsibility (CSR). CSR the term has emerged and developed since the 1970's with the help of raised consciousness in the world and developed technology. (Bogetic, Antić & Lekić 2017, 24.) Corporate social responsibility can be expressed in terms: corporate citizenship, corporate responsibility, corporate social responsiveness, corporate social performance, corporate stakeholder responsibility, corporate integrity, organizational responsibility, responsible business practice and social responsibility. Dividing the terms in the organizational world are not crystal clear, there are multiple different definitions on the terms. Throughout this thesis the term to reflect on the corporate responsibility will be CSR due to its more common usage in the matter in research papers. (FK & Nigatu 2015, 2-3.)

### **2.1 CSR models**

To understand the complex term CSR, there are models to visualize it. For example, figure 1, Carrols CSR Pyramid, displays four of the main components of responsibilities: economic responsibilities, legal responsibilities, ethical responsibilities and philanthropic responsibilities (Carroll 2016, 1-5). The economic responsibilities are the foundation of the other responsibilities in the pyramid. What combines companies in different sectors and industries is the core idea of being a profitable organization. The economic responsibilities require the organizations to generate profit in morally, ethically and legally allowed and accepted ways. The legal responsibilities follow the economic responsibilities. The organizations should follow all the relevant laws and regulations on the matter. The third component of the Carrols pyramid is the ethical dimension of it. The ethical component requires the organizations to act ethically towards the concerning issue surrounding the area of operation and try to avoid harm to the community and general public. Finally, on top of the pyramid is the philanthropic responsibilities that are defined in a way that all of the firms should contribute resources to the community and improve the quality of the life of the people connecting to them and act as a good corporate citizen. (Carroll 2016, 1-5.) Besides the Carrols Model, hierarchy- type of model there are also other relevant models to



graphically display and explain the complexity of CSR: Side-by-Side Model and Star Model of CSR.

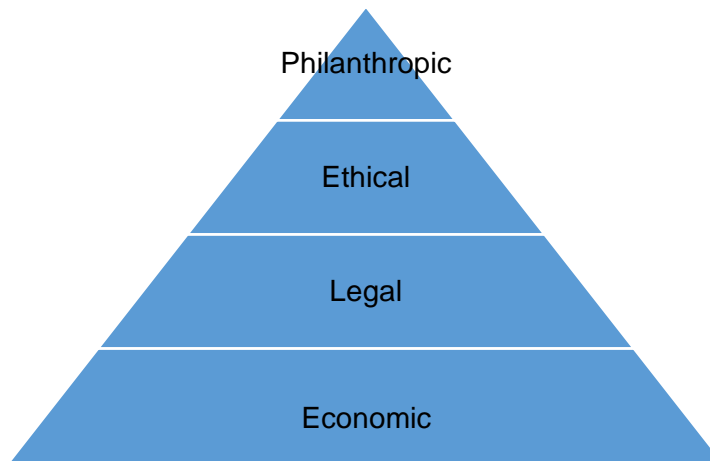


Figure 1. Carrols Model (Carroll 2016)

The side by side model, illustrated in the figure 2, expresses and examines the principles motivating the responsible behaviour, the processes of responsiveness and the outcomes of social performance. The principles are listed to be institutional legitimacy, organizational public responsibility and individual managerial discretion. Processes of the social responsiveness are environmental assessment, stakeholder management and issues management. After these two the outcomes of corporate behaviour are social impacts, social program and social policies. This approach would entail the three aspects across all domains of the companies' operations. (For example, economic, legal, ethical, and discretionary). (Jun 2012, 4.)



Figure 2. Side-by-Side Model (Jun 2012, 4)

In addition to the ones mentioned above, the star model in figure 3, is also considered to be a relevant framework in illustrating and expressing the term CSR. The model has an emphasis on the stakeholder relationships. Specially in the case of small and medium size enterprises stakeholder relationships are increasingly recognized as an important aspect. It focuses on re-conceptualizing the firm and finding and considering new stakeholders beyond the traditional stakeholders such as customers, suppliers and employees. (Jun 2012, 4-5.)



Figure 3. Star Model (Jun 2012, 4-5)

According to a survey made by Clutch Marketing, the majority of people think that all of the global industries should be participating and commit to the corporate social responsibility. However, more frequently mentioning food-related industries such as grocery retailers, restaurants, technology and fashion industries. (Cox 2019.)

## 2.2 CSR and the Hospitality Industry

Hospitality industry is one of the industries whose activities and practices have an impact to the environment which leads to an opinion that the industry has a responsibility of promoting social change by engaging employees, owners, and customers in their CSR initiatives (Zizka 2016). Hospitality industry has significant negative effects on economic, environmental and social environments, including air and noise pollution, biodiversity loss and waste generation. From the broad range of hospitality industry, it is argued that hotels should be the ones that are the most involved in the environmental management, due to

the multiple negative effects. (Martínez García de Leaniz & Rodríguez-del-Bosque 2013, 4-5.) In the beginning of the developing CSR concept, hotels were more focusing on the Carrol's model top part: the philanthropic responsibilities by for example donating certain funds to charity. The problems concerning human rights, environmental protection and fight against corruption were added later to the CSR activities due to changes in the society and market. An example within the hotel industry of CSR activities and reporting it (which is counted highly important towards accountability towards stakeholders) is the Hilton- hotel chain. They have listed 4 directions in their business philosophy: creating opportunities, strengthening communities, celebrating cultures and living sustainably. Like the example of the Hilton hotel chain, large international hotel chains are considered as the initiators in the domain of social responsibility in the hotel industry. (Bogetić & al. 2017, 24-26.) However, even though the larger hotel chains have a bigger sustainable impact, the impact of smaller hotels are considered not less significant (FK & Nigatu 2015, 3).

### **2.3 Drivers and barriers of CSR**

CSR is not only a necessity but can be counted as a benefit: hotels or other organizations can benefit from the usage of corporate social responsibility in the corporate strategy and in daily practice since it is imperative due to symbiotic nature of its relationship with the surrounding natural, economic, social and cultural environment. (FK & Nigatu 2015, 3.) There are a lot of arguments towards the positive effects of the CSR practices in the hotel environment. The activities are considered to be a successful tool in improving hotels brand awareness and customer loyalty. Considering, for example, the new demographic segments like millennials, socially conscious consumers and the nurture demand for green hotels, a growing niche which considers sustainability when making a hotel decision. According to several studies, consumers are even willing to pay more for green and sustainable hotels and restaurants. (Singal & Rhou 2017, 2-3.)

Besides the argued consumer-related advantages, the CSR strategies are believed to increase the positive company culture in the organization: retaining, motivating and recruiting the employees (Bello & Banda 2017, 4). In addition, practices like environmental care, minimization of waste, conservation along with the use of sustainable practices (reduces, reuse, recycle) are considered to bring significant cost reduction to the organization (Frangos 2018). Beside the economic, corporate culture and consumer-related drivers, the other drivers are considered to be government legislation, consumer lobby groups, the type of industry and the potential for competitive advantage (Marketing Study Guide).

Even though the adaptation of CSR practices has a lot of benefits and drivers towards it, there also barriers that affect to its usage in different companies. According to a research journal of Thomas Laudal, there are different barriers when it comes to the size of the company: small and medium sized enterprises (SME's) and multinational enterprises (MNE's). One barrier SME's have comparing to MNE's is the cost/ benefit ratio. A cost equal to one percent towards CSR activities of the turnover can mean to the MNE's the capability of to recruit specialists to be in charge of the CSR strategy while on the other hand for SME's the same percentage is insufficient for making any lasting kind of impact. SME's are lacking the same kind of financial resources than MNE's. A barrier towards the MNE's is however, the large and complex organizations have more difficulties controlling all of the aspects of the corporate behavior. The barrier is named as "internal control". (Laudal 2011, 7-8.)

### **3 Food waste**

The matter of food waste is considered to be an urgent global issue, considering its environmental, economic and social effects to our society, economy and nature. The following chapter three will discuss important terms related to food waste, the scope of the issue globally and in hospitality industry and additionally discussing the reducing of food waste.

#### **3.1 Terminology**

On a global scale an estimated one third of all food produced is either lost or wasted. To understand it better, it is important to establish the differences of these two terms: food loss and food waste. The term food loss is used when discussing about: “any food that is lost in the supply chain between the producer and the market. This may be the result of pre-harvest problems, such as pest infestations, or problems in harvesting, handling, storage, packing or transportation” However, when considering the hotel industry and the food losses, the term food waste is used more commonly. The definition of the food waste term is “discarding or alternative (non-food) use of food that is safe and nutritious for human consumption”. (FAO.)

Food waste can be divided in separate food waste categories which are displayed in the table 1 below, according to what kind of food is wasted. The categories can be established as avoidable, unavoidable and possibly avoidable waste. By distinguishing these categories, it is easier to understand the food that has been wasted and what actually can be reduced. The food waste category of avoidable waste can include for example slices of bread, fruits, chicken or other types of meat products. Food products like meat bones, eggshells and orange skin are part of the unavoidable food waste category, because those are not eaten under any circumstances. Furthermore, the possible avoidable waste includes food products like bread crusts or potato skins, that can be eaten by some people in some circumstances. (WRAP.)

Table 1. Food Waste Categories (WRAP)

<b>FOOD WASTE CATEGORIES</b>	
<b>Avoidable/ Edible waste</b>	Food that was prior to disposal edible
<b>Unavoidable/ Inedible waste</b>	Food that that has not been edible in normal circumstances
<b>Possibly avoidable/ Possibly edible waste</b>	Food that some people do eat, and some people do not/ can be eaten if the food is prepared in another way

Food waste is associated to current global moral, environmental, economic and social challenges. The impact of food waste is not just financial, but as mentioned has other aspects too. The food going to landfills is making a significant contribution to global warming. (Lephilbert, 2016.) The term landfill is highly connected with food waste and its negative disposal. Besides many other problems landfills cause, they also are responsible for approximately eight percent of world's anthropogenic methane emissions. In countries with high gross domestic product, GDP, this value goes up to 30- 37 percent (Melikoglu, Lin & Webb 2013).

### 3.2 Global issues of food waste

Globally around one third of the food produced for human consumption (1.3 billion tonnes) is lost or wasted at some point of the food supply chain (FAO). In the US the amount of food waste is already even more, 40 percent of the food produced (Climate Collaborative). The economic loss from this amount of food lost or wasted equate to an approximately 680 billion US dollars in industrialized countries and 310 billion US dollars in developing countries. The difference between the quantities of food are closer to each other than the economic losses: 670 tonnes in the industrialized countries vs. 630 tonnes in the developing countries (FAO). Furthermore, even though the quantities seemed to be relatively same, where the waste occurs in different countries varies from area to area, depending on the infrastructure matters, culture and how industrialized the country is. Furthermore, from an environmental aspect food waste is one of the highest co2 emitters. The co2 emissions are around 3.3 billion tonnes a year (TRVST). In the next figure 4 is shown that

if food waste would be a country, it would be the third-largest greenhouse gas emitter only China and USA before it (FAO).

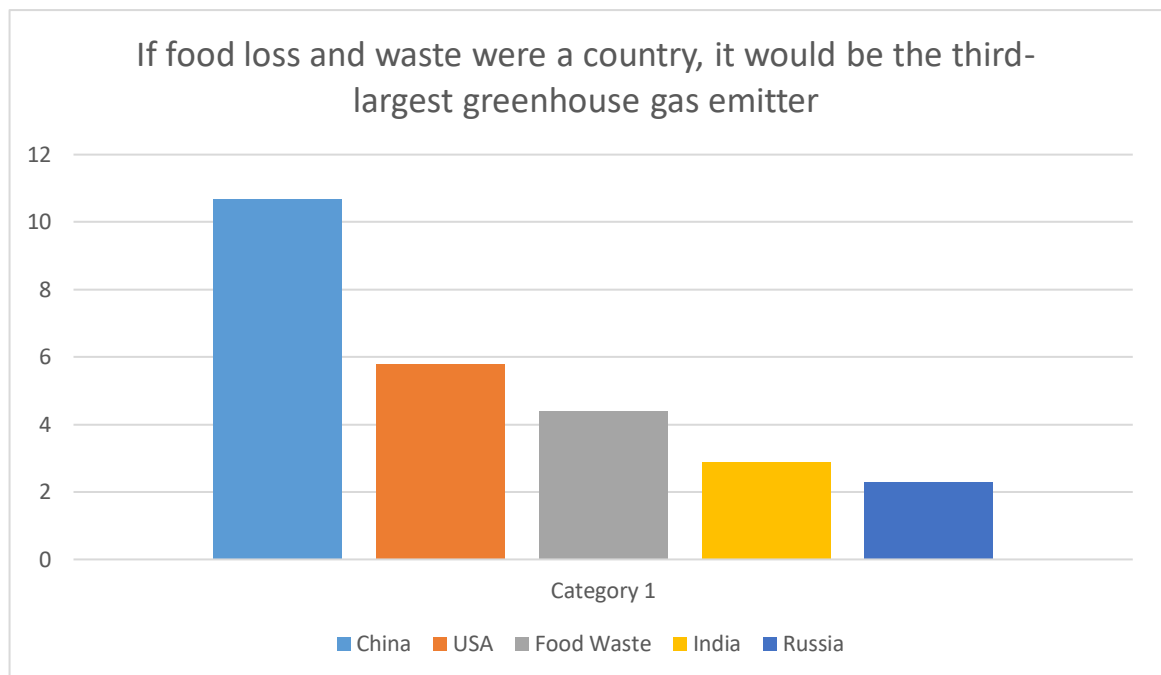


Figure 4. Largest Green House Gas Emitters (FAO 2015)

In addition to the economic and environmental issues, food waste has also substantial social and moral issues. There are around 800 million people in the world who do not have the same access to food as people in the industrialized and developed countries. This has led to that one in nine people in the world are starving or malnourished (TRVST). The urgency of the issue can be seen in for example that United Nations has announced food and starvation one of the top global issues. According to UN the number of undernourished people in the world has been on the rise since 2015 and reached an estimated 821 million in 2018 (UN).

As stated in the previous chapter there are different kind of categories within the food waste issue. However, there are multiple sources where the mentioned waste is originating from. The figure 5 illustrates the problematic areas of food waste in the developing countries, where the consumer losses are the biggest contributor. Furthermore, the local conditions also contribute to the amount of waste in each country. Globally there is a highly visible pattern: in high income regions such as Europe or more specifically Finland the volumes of food waste occur in processing, distribution and consumption stages. (FAO.)

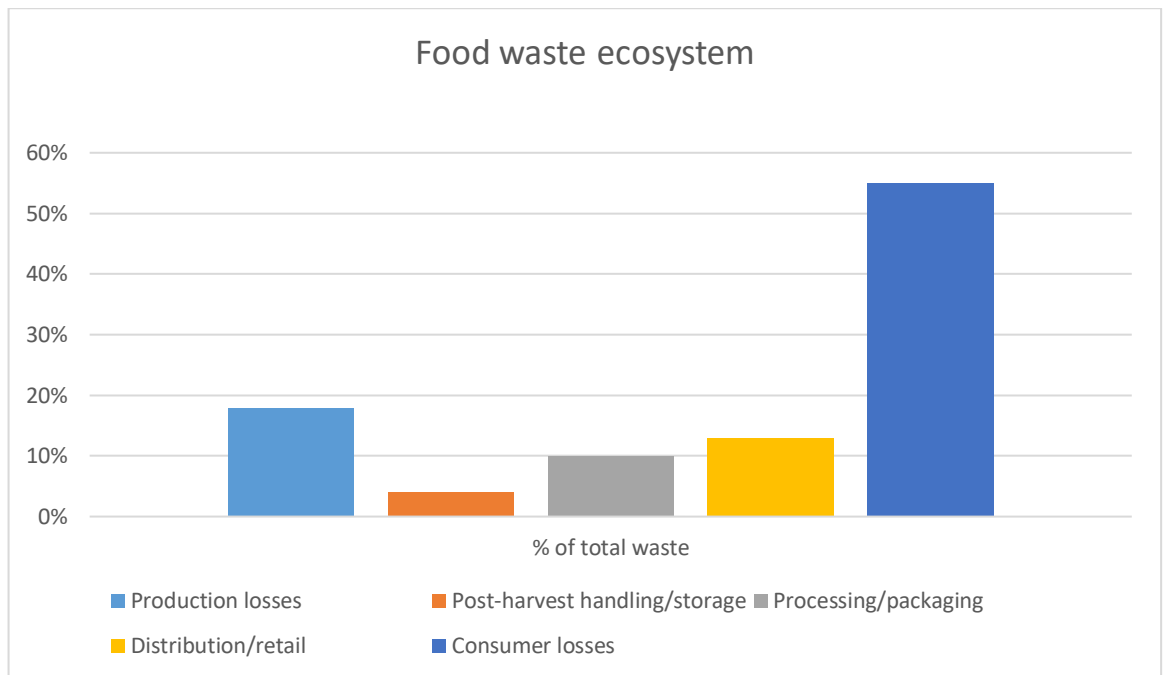


Figure 5. Food Waste Ecosystem (FAO)

On a controversy to this in low-income countries food waste occur in the production and post-harvesting phases. This is usually caused by lack of infrastructure and knowledge, in a combination with unfavourable climate conditions, which causes more spoilage. (FAO.)

The food waste is also a recognized problem in Finland and in Finnish food service industries. Around 400-500 million kilograms of food in all of the industries are wasted in Finland. This amount is divided to households (30%), manufacturing (20%), production (12%), grocery stores (18%) and restaurant services (20%). The restaurant sector can be divided to more specific providers such as fast food restaurants, schools, cafes, hotels, student cafeterias, hospitals and day-cares. In addition, the waste can be divided to how substantial the kitchen (preparation), serving and plate waste is in this specific provider. The following figure 6 will display these different sectors and the waste percentages. (Silvennoinen 2016.)



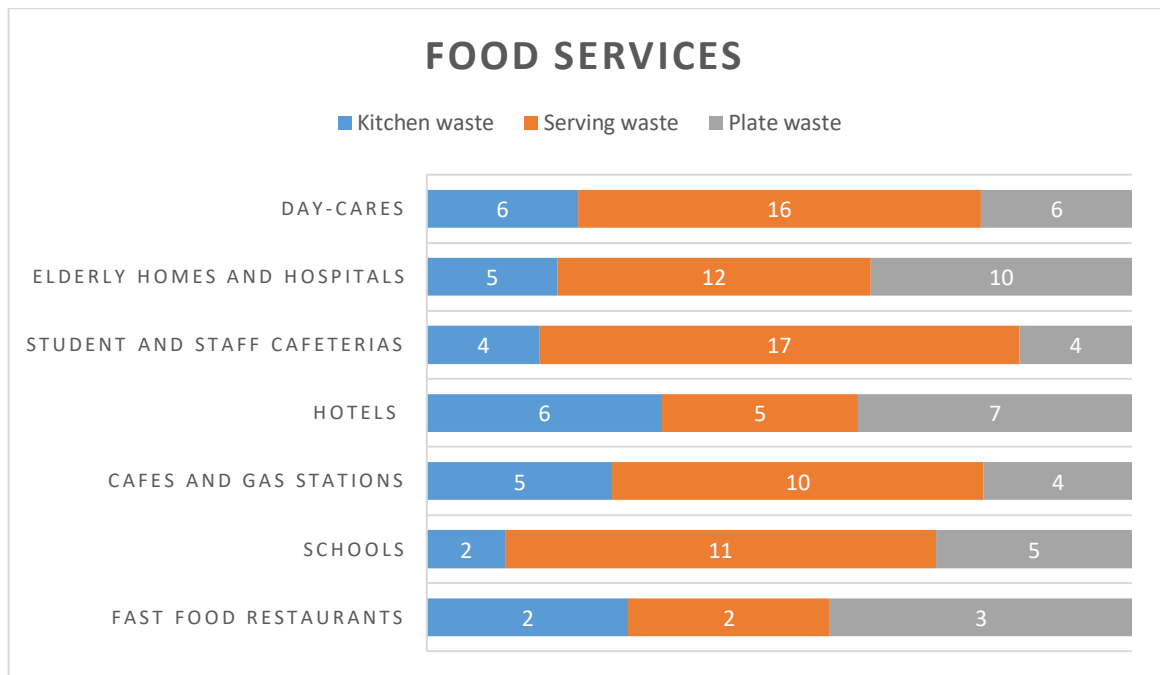


Figure 6. (Silvennoinen 2016)

As shown in the figure 6 above, hotels have waste generating in all of the three phases, however plate waste being the largest segment. The next chapter will be focusing more in depth to this certain sector of the food services.

### 3.3 Food waste in hospitality industry

There are multiple segments within hospitality industry that are contributing to the food waste problem. These are hotels, pubs, restaurants and other hospitality sector facilities like quick service restaurants, leisure, services, catering, healthcare and education (Open Access Government 2018). Within the hotel industry the amount of waste can be depending on the size of the hotel and the number of food and beverage outlets. According to Eco-Business (2017) luxury hotels such as Sofitel throws away 47 tonnes of food annually. Mid-range hotels throw away around 35 tonnes and economy hotels the least – 17 tonnes. (Koh 2017) This is due to the issue that luxury hotels most likely have more food and beverage outlets than economy hotels.

As displayed in the figure 6 in the previous chapter 3.2 the waste can be divided to kitchen (preparation) waste, serving waste and plate waste. Another way of categorizing the waste by a study made in the UK is food preparation, spoilage and customer plates (WRAP, 2). The economic effect on hotels are not the same and is highly dependent on the size or type of the accommodation type: luxury, mid-range or economy and the number of food and beverage outlets. The reasons that can lead to the food waste in all of

these three categories are: overproduction, too many options, over-merchandising, false labour and food safety (Leanpath, 2016). There are also associations between the behavioural patterns of the staff and the food wasted. The study of the employee's perceptions of food waste indicates that it is important that employees are encouraged to perform actions preventing this waste. These actions include ensuring that the food is handled and prepared according to appropriate conditions and procedures such as the right temperatures, pest control, preventing spoilage and as well as the hygiene measures. (Mabaso & Hewson 2018, 9-10.)

### **3.4 Reducing food waste**

The mentioned economic, environmental and social effects are recognised in hotels and within other food service operators. External drivers towards reducing waste are the UN sustainable development goals towards halving the food waste in retail and within consumers and reducing its formation in the whole food chain. In addition to the UN goals the new EU commission edict will create standards for reporting and defining food waste. Starting from 2020 Finland will take into consideration the requirements from EU. (Luonnonvarakeskus, 2019.) However, specialist Juha-Matti Katajajuuri (2019) states in food waste seminar organized by Motiva that halving the waste is almost impossible because of the fact that EU lists inedible parts as part of the food waste, which Finland has not previously done.

One of the key internal drivers to reduce food waste of hotels or other companies is the economic aspect of it. The economic effects more directly affect to the operations of the restaurant. "many site managers prioritized reduction efforts based on the likely economic gain from the reduction" (WRAP, 4). Besides the economic savings that can be made, the raised consumer awareness towards protecting the environment has increased during the past years. "The UN marked 2017 as the International Year of Sustainable Tourism for Development and evidence suggests that the shift in mindset and consumer focus on sustainability lies within the millennial generation" (World Travel & Tourism Council, 2017). As there is a clear external drivers and internal drivers for reducing food waste, it is necessary to implement and discover efficient measures and actions against it. In the next chapter will be discussed and explained innovations as a possible action for organizations.

## **4 Innovations**

Technology and new innovations can be said to have changed the global economy and the evolution of different industries. Innovation as a term reflects an introduction of something new (Kylliäinen 2019). Another definition for the term is considered to be “Innovation is a significant positive change” (Berkun 2013). As many can see new innovations as a positive thing and contributor towards wellbeing of society, it is stated that it will have an affection towards certain type of jobs. “According to the new World Economic Forum report, nearly 133 million new jobs may be created by 2022 while 75 million jobs are displaced by AI, automation and robotics” (Leaser 2019).

There are different kind of innovations: product innovations and process innovations. The product innovations can put into different segments such as new products, new sources of supply and new methods of production. The segments in the process innovations are exploitation of new and new ways to organize business. The innovations can be new for micro-level, meso-level or macro-level. Generally, the innovations should meet the demand and needs of the market. (Blinova, Dzhandzhugazova, Romanova & Orlova 2016, 2.)

### **4.1 Hospitality innovations**

Innovations in the hospitality industry depends on the creation of intangible assets, which means providing the consumer with a benefit worth paying for. In this regard, the intangible assets may be good mood, spiritual or cultural development or the provision of a unique experience. Innovation types superficially in the hospitality industry can be divided into different type of categories such as material and technical innovations, economic innovations, organization and management innovations, legal innovations and marketing innovations which are displayed in table 2. (Blinova & al. 2016, 1-4.)

Table 2. Innovations Types (Blinova & al. 2016)

Innovation Type	Description
Material and technical innovations	New materials, products, services and technologies
Economic innovations	The creation of new ways buy and sell goods (caused by the introduction of new products and technologies)
Organization and management innovations	Solutions and approaches in managing the working process
Legal innovations	Laws or regulations introduced, as well as significant changes in the existing ones
Social innovations	Ideas and solutions with the purpose of addressing the social and cultural challenges which the society faces
Marketing innovations	New or significantly improved marketing methods

In this research the focus will be the most on the technological innovations, which has also affect to the society and the economy of the organization. The technological innovations are not new to the constantly developing hospitality industry but have already shaped the industry to as it is. Overall the maximized usage of techonology has helped to make the daily basis operations more efficient (Entre 2018). More in detail these changes can be seen in the websites and marketing of the organizations in the field. Techonology innovations have helped the effective usage of online advertising, social media, blogs, and online purchasing to help convenience their customers. Besides the marketing aspect, the raise of technology can be seen in the computer systems. They help the staff to stay on the same page, for example housekeeping staff and the reception staff can communicate better. The customer relation management systems, the CRM systems, for example Opera CRM, is helping not only the back office but also the sales department to track the customer activity better. (Kobres 2018.)

The increased importance of technology can also be seen in the raising trends and new start-ups. The travel techonology segment in the ITB Berlin 2019 consisted not only one hall, but seven halls focusing in the different aspects of travel related techonology. The different solutions displayed there were for example GDS systems, tour operator databases, reservation systems, travel agency softwares and calculation systems. Furthermore, innovations and new techonologies had an important role at the fare. (ITB Berlin 2019.) “Efficient technological solutions are increasingly becoming a decisive factor in successful travel industry business models” (ITB Berlin 2019). Other innovations that can already be seen in the hospitality services are in the guest-facing systems. These consist for example thin client terminal, in-room tablet, a kiosk, different remote control and point of sale terminal. In addition to the guest facing systems, there has been a IoT

discussions about the in-room IoT sensors that are linked to the temperature, humidity, ambient light and motion. In other hospitality services the innovations can affect for example to housekeeping, room service, payment services, loyalty programs, guided tours, local attractions, targeted advertisements, keyless entry to rooms, climate control, automatic check-in and lightning control. (Kansakar, Munir & Shabani 2018, 2-3.)

## **4.2 Eco-innovations**

Innovations can also be beneficial in sustainable aspects such as social, environmental and economic. Or in other words for people, planet and profit. Focusing on the eco-innovations and organizational-level sustainable operations are considered to be vital for competitiveness of the company, the economic advantage and for addressing the social issues in general. There are different and many definitions on the eco-innovation concepts from different years. From 1990's there are definition from Fussler and James that describes eco-innovations as new products and processes offering value to the customer and the business, but that significantly reduce environmental impacts. Another definition from the following decade is "Processes, practices, systems and new or modified products that benefit the environment and contribute to environmental sustainability" from Oltra and St Jean in 2009. The definition made in the 2010's is from González, Sáez & Díaz and they describe eco-innovations as any form of innovation aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment or achieving a more efficient and responsible use of natural resources, including energy. (Magadan-Diaz & Rivas-Garcia 2019.)

There are many hotels already using different kind innovations or technologies working towards sustainable development. Robbie Francis the managing director of EPOSability states that "employing eco-friendly technology is a great way to show guests that you're committed to making a difference." (Thomson 2016). Green Hotelier also lists eco-friendly solutions for hotels: eco-friendly heating and energy, waste reducing technology, sustainable laundry, lightning technology and iPad POS Systems. (Thomson 2016). The technologies or platforms can also be provided through partnerships of different companies such as ResQ Club and FiksuRuoka.fi in Finland.

As already explained in the chapter discussing about CSR, eco-friendly actions are seen as a necessary part of organization actions. The environmental awareness among consumers and companies has led to different outcomes: it gives the firms opportunities to build up new internal (to the firm) competences in green technological activities which are considered as crucial for acknowledging the potential economic benefits and it can act as

a complementary action in relation to compulsory regulation and public incentive measures. (Poussing & Le Bas 2013, 3.)

## 5 Methodology

In the following chapter will be explained and discussed the research methods that will help to reach a proper answer to the research question(s). The methodology chapter will contain methods used in different researches in general, the methods used in this particular research, implementation and the analysis and discussion of the results.

The research methods commonly used can be either qualitative, which will be the main method in this particular research or quantitative. Both of the methods are described as traditional research methods (additionally also experimental research method, which will not be discussed in this chapter). Despite the two methods being implemented differently, they can be used in same type of researches. For example, in explanatory studies and studies that describes detailed descriptions of people, events or situations, both of the qualitative and quantitative methods are commonly used.

Both of the methods have their own fundamental characteristics. In quantitative analysis the aim is to argument with numbers and their systematic and statistical connections. However, this usually requires transforming the information into a table form. (Alasuutari 2011, 34.) There are multiple techniques how to use quantitative methods: to present basic sums in graphs, averaging, making comparisons, working with possible relationships, projecting the future and probability (Curwin & Slater 2004, v- viii). In comparison qualitative method cannot answer to these kind numerical questions such as “How many” or “What is the strength of the relationship between variables” (Barbour 2008, 11). Furthermore, the quantitative research method (also known as hypothetical-deductive method, experimental method and positivist approach) owns characteristics such as conclusions from previous studies, proposing hypothesis and defining concepts. Qualitative research method is described to be a cluster of diverse studies. The different varieties of qualitative researches are for example: Delphi-research, descriptive study, qualitative evaluation and analysis of a discussion. (Hirsjärvi & al. 2009, 135, 139-140 & 161-164.) Usually in the qualitative research there are two phases: reducing the observations and solving the problem. There are different types of qualitative methods used in different studies such as documentary and visual sources, observational fieldwork, interviews, focus groups, diaries, enhanced case records, case studies, critical incident techniques and action researches. (Barbour 2008, 15-20.) As qualitative method (interviews) is the main research method of this thesis it will be more explained in the next chapter followed by the implementation of it.

## **5.1 Qualitative method: Semi-structured interview**

As the aim is to detect the expectations of different restaurants and hotels, without a lot of previous made mapping or surveying on the matter and due to this, the main chosen research method a qualitative research method: a semi- structured interviewing. Interviews in general involve in-depth exchange between researcher and researched. The importance in the interviews is to ask questions but as well the researcher or interviewer to listen actively what the interviewee is explaining. (Barbour 2008, 113.)

Besides the chosen semi-structured interview there are other types of qualitative interviews are a theme interview, a structured interview and an open interview. The semi-structured interview method is described to be blend of both structured and open interviewing methods. The questions are not as determinate as in the structured method, but the interview does have a structure or certain questions to follow. (Adams 2015, 3-4). In the structured interviewing the type the questions, arguments and the order of presentation are already fully determinate. To distinguish the characteristics of the structured interview better, in the controversy the open interview or unstructured interview where interviewer researches the opinions, feelings and perceptions of the interviewee as the discussion moves forward naturally. (Hirsjärvi & al. 2009, 208-210.) In the unstructured method some of the questions may formulated during the interview, in response to what the interviewee says (Rubin & Rubin 2019, 31). Because of the possibility of the interviewees being either more talkative or less talkative it is good to do a one or a few test interviews. Nowadays there are commonly done also phone interviews or interviews done with a help of a computer. (Hirsjärvi & al. 2009, 211-212.) The semi-structured interviewing type varies a lot from researcher to researcher because of different personal styles (Barbour 2008, 119-120).

The major strength (especially considering the nature of this particular research topic) considered to be in qualitative interviewing is that conclusion and results are tightly linked to a solid evidence. (Rubin & Rubin 2019, 64) Other benefits are that the people who are planned to participate in the interviews are usually attained into the research. In contrast to the strengths, the interviews can take a lot of time and that they also require throughout planning. (Hirsjärvi & al. 2009, 205-206)

The semi-structured interviews in this research aims to find out in an interactive method the expectations, feelings and motives from a certain people who are affected or linked by



this research question. This research method will provide flexibility, in-depth information and support to understand the currently unknown or a little-known process of the motivations of choosing an ecological platform from the perspective of the hotels in Helsinki.

## **5.2 Implementation**

The questions in the structured interviews are formed, using the theory framework chapters two, three and four as a base. The focus of the questions will be more on the chapters 3 and 4, food waste and eco-innovations and platforms. The interview questions will follow the structure of the theory outline, which is working as a background for the questions. There will be two sets of interview questions, first set focusing on the perspective of already existing partners, which will be reached through and with the assistance of ResQ. The second set of questions will be more aimed to the non-partners, which are contacted individually. However, even both sets of the questions will be planned to be different from each other, they still do have also similar kinds of aspects in order to keep the answers easy to follow and clear also in the process of analysing the results and when making conclusions.

The questions that are focused on the non-partners will be answering and focusing more on the expectations and the current knowledge of ResQ and eco-innovations in Helsinki. They will also be used to map out the hotels' possible issue on the food waste matter and are the eco-innovations seen as a possible solution for these kinds of problems. The questions will also aim to find out are these kinds of start-ups an affection to the hotels brand, marketing or image and in what way. These will help to understand the entity and provide adequate information to reach the answer to the research question. The semi-structured interview will consist 15 questions and test interviews will be implemented first, before the actual interviews to make sure that interviews work and will run accordingly. In addition, the test runs are implemented due the fact that the nature of qualitative interviews require proper preparing and practicing for the role of an interviewer (Hirsjärvi & al. 2009, 206). After completing the test runs, also the approximate duration of the interviews will be known, however as mentioned before it also depends on the interviewee how talkative or less talkative, he or she is.

Furthermore, the questions that are directed to the already existing partners, who are using ResQ, are more focusing on the benefits and map information how it has been working there and what variables there are when using it. In addition, what kind of information made them choose ResQ and what expectations they had previously. The target group for

the semi-structured interviews are chain hotel in the Helsinki area. The similar type of hotels will help to provide more complete, understandable and comprehensive information for the research.

The test interviews were implemented in the first week of September 2.9.2019- 8.9.2019. All the participants in the test interviews had knowledge or experience in the restaurant field. In the interview for the non-partners took part two participants. Both participants had experience in the food service industry as chefs and were already aware of the ResQ platform. The both interviews were 10 minutes 02 seconds and 7 minutes 45 seconds. The comments and feedback for the questions were positive and it was stated that the questions are very suitable for the restaurant managers who can fill in the questions that in this test interview was answered only to a slight extent. However, already the test interview answers about the food waste gave an interesting and valuable overview what the answers can be in the actual interviews.

Conclusion of the possible length of the actual interviews will possibly be somewhat longer due the possibility of more of an in-depth answer. Approximately the time would be 12- 20 minutes. However, I need to consider the possibility of shorter answers as well, especially in here in the interviews of non-partners if there is a lack of interest at all towards the topic. In the interview for the partners also took part two participants, also who had experience in the food service field: two waitresses. The length of the both interviews were: 9 minutes 56 seconds and 15 minutes 50 seconds. The comments towards the interview was mainly positive and as in the interview for the non-partner hotels it was mentioned that the questions are suitable for restaurant managers rather than other staff. This was seen for example in the question 4 *“How are the some of the overall CR activities of the company/chain seen in the hotel restaurant? / Kuinka yrityksen yritysvastuulliset linjaukset näkyvät hotellin ravintolassa?”* where the conclusion was that the restaurant manager can answer with more knowledge of the matter.

### **5.3 Participation observation**

In addition to the semi-structured interview method, the second method used in this research is participant observation. Observation methods are used in researches, because these methods provide information that tell the researcher what is really happening. In other words, the observation can help to see and understand are the people actually acting how they are claiming to act. The benefits in this observation research method are that research is done in a “natural habitat” and not in an artificial circumstance. Observation

fits well to qualitative researches because it helps to research interaction in fast pace situations. In contrast, observation has been criticised from the aspect that researcher or the observer can actually distract or change the pace of the natural situation. In some situations, also the objectivity of the observer can be debatable because of the possible emotional commitment to group or situation. What makes easier and more efficient to implement this method is to structure and plan beforehand. (Hirsjärvi & al. 2009, 212- 214)

There are different types of observation: systematic observation and participant observation. In the systematic observation the observations are tried to gather very systematically and specifically. These observations can be done with the help of “checking lists” and grading scales. The systematic approach has been used in pedagogy and nowadays also in social sciences. In addition to the systematic observations, there are participant observation type. In the participant approach it is typical that the researcher takes part in the activity of observants, which makes the observant part of the group as well. The participation can vary from situation to situation from the perfect participation to participating as an observer. (Hirsjärvi & al. 2009, 214- 217) However Metsämuuronen (2006, 116) divides the observation method into four different segments: the complete observer, the observer-as-participant, the participant-as-observer and the complete participant.

In this research the observation method will be implemented in a “Reducing food waste”-workshop organized by Motiva. The participants are representors of companies within the food service industry: restaurants, catering and technology providers. The observation method will be used as a help for observe the interaction and practical ideas in this particular situation and observe the possible fitting themes in this research. The participation observation form for the workshop is as followed:

Table 4. Participation Observation form

Research ques- tions	What are the rea- sons for food waste in food service?	What solutions there are for these reasons?	Observations

The observation column will be analyzed in and discussed in the discussion chapter, since the nature of the results in this column are made based on the results from the workshop.

#### 5.4 The process of analysing the results

To reach convincing and clear answers to the research question (Rubin & Rubin 2019, 190), analysis the data is an important step in the research process. When analysing and processing the data of qualitative interviews, there are certain general steps to taken into consideration: transcribing and summarizing, coding, sorting the codes, sorting within each file, integrating the descriptions from different interviewees, combining concepts and finally generalizing. (Rubin & Rubin 2019, 190) The most common analysing methods of the qualitative data are theming, typing, dividing the content, discursion analysis and discussion analysis. In the process of analysing the data, because of the wide scope of data, it is important to understand that not all of the data is necessary to be analysed or processed. (Hirsjärvi & al. 2009, 224)

A fundamental step in the qualitative data analysis is that the raw data, such as recordings or notes are processed. After the processing the sketches made from the interviews, coding of the interviews and transcripts will be done. Coding will help in the analysis of the transcripts to categorize similar kind of data. There are different ways of coding such as process coding, values coding, descriptive coding and emotional coding. In this type of research, I would consider the in vivo coding the most effective coding method. (Miles, Huberman & Saldana 2014, 71-75) In the second part of coding, creating patterns, there are patterns such as: categories or themes, causes and explanations, relationships among people and theoretical constructs. Furthermore, the data that will be necessary and important to analyse will be displayed visually comprehensive way that will provide coherent

and understandable answers. There are different methods for the data displaying: methods of exploring, methods of describing, methods of ordering, methods of explaining and methods on predicting. (Miles & al. 2014, 105).

This research will include coding the data, which will be supported with analytic memos to help to form the data to a narrative form and creating patterns to make it more analysable. The case-oriented analysing strategy compared to the variable-oriented strategy in this particular research will be more helpful in analysing the data, due to the similarities and depth of the one case. To make data more coherent, the method of describing or method of exploring the data display will provide visual aid for understanding. (Miles & al. 2014, 71-75, 105 & 161) The implementation of these interviews will first include, as mentioned the in the paragraphs above the fundamental step: transcribing the recordings of the interviews into sketches. From the different types of sketches or transcripts (non-partner and partner hotels) the similar themes (words, phrases and causes) and values will be finding in the first part of coding, following by creating patterns of these themes, causes and explanations to create coherent results. In order to display the results explanations in text will be used, supported by tables of the key answers to make the data more understandable also visually.

## **6 Results**

In this chapter the results of the semi-structured interviews for both types of hotel restaurants and the participation observation are introduced and analysed. The first chapter 6.1 will introduce the interview results theme by theme within the five subchapters (6.1.1-6.1.5). The chapter 6.2 will focus on the results of the participation observation.

### **6.1 Results from the semi-structured interviews**

In the two types of semi-structured interviews participated six people from six different hotels and five different hotel chains. The interviews include responses from five different hotel chains in Helsinki. In total from the 17 hotel chains in Helsinki the interviews contained 29 percent of the total amount chains. However, three chains could not have taken into consideration due to the lack of food services, so taking this into consideration the percentage of the whole amount would increase to 33%. Three other chains and hotels from the respondent chains that were the target group of this research were also contacted but due to the lack of time, interest and resources other hotels/ chains did not answer or could not take part in the interviews. The interviewees of the chain hotels are people who work or are in charge somehow of the food operations on the premises: restaurant managers, duty managers, front desk manager and executive chefs. All of the questions of the interviews were answered during the interviews. Three of interviews were conducted on the premises of the hotel and the other half were conducted as phone interviews. The reasons for having different kind of circumstances were to ensure the best and suitable conditions for the interviewees due to tight schedules. The length of the interviews varied from 13 minutes to 23 minutes. All of the interviews were conducted during September and October in 2019.

Besides the two different types of interviews all of the hotels are chain hotels and non-individual hotels were not chosen to be part of the research. This was due to making the research more precise and accurate and that most of the hotels using ResQ are part of a chain. The first seven questions of both interviews are the same, which are analysed together in order to provide comprehensive data on those questions. The themes in the first part of questions will be corporate social responsibility and food waste, following the same pattern as in the theory framework. In the second part where the questions of the interviews were different depending if the hotel was a partner or not (themes regarding experiences on ResQ and experiences on ResQ) will be analysed and displayed separately. In that part, which is starting from 6.1.3, number one (1) after the table title will represent

partner hotels and number two (2) non-partner hotels. In order to retain the anonymity of the respondents the coding of the interviews will be implemented as the letter C meaning the chain and the letter H presenting the hotel. Following this pattern, the codes for the respondents will be as following: C1H1, C2H2, C3H3, C1H4, C4H5 and C5H6. The first three will present the answers of the partner hotels and the rest will be presenting the non-partner hotels. Furthermore, the comments from the interviews are combined together in tables, which will help to visualize and understand the actual answers behind the results.

### 6.1.1 Results from theme one: CSR

The first set of questions, questions number 3 and 4 in the interviews that can be seen in the appendix one and two, page 54 and 56 are regarding the CSR theme. The corporate responsibility theme included questions related to the visibility of sustainable development in the daily operations and how might the overall CSR actions affect to the operations. According to the answers in the hotel food services the actions aiming for sustainable development are taken into consideration in more than one way. The actions that were mentioned in four out of six interviews were choosing seasonal or organic products, recycling and waste sorting. Other actions that were depending on the more on the specific respondent, were mentioned to be measuring the food waste with different systems, focusing on the vegetarian options, choosing bio-degradable products such as straws or cups, using energy-efficient lights and working with different partners. The table 4 below illustrates the results mentioned above and separates the different comments per respondent.

Table 4. Sustainable actions taken in restaurants

Respondent	Answer
C1H1	"We have of course some organic products in usage and we are aiming to use a bit also some seasonal products in our a la carte list --"
C2H2	"Cups are biodegradable, plastics are out of cornstarch and of course we recycle as much as possible "
C3H3	"We are focusing on the vegetarian options"
C1H4	We recycle everything and use as much as possible of the organic products"
C4H5	" We have a waste system, where we always write down what goes to waste from different meals"
C5H6	"We only use LED-lights, and we have the most energy efficient solution that is possible at the moment"

According to interviewees the actions that are mentioned in the first questions are partly coming as instructions or guidelines from the chain management. The actions that were mentioned are where the products are ordered from (suppliers), are the products environmentally friendly and that the food waste is measured properly. Furthermore, the different environmental certificates are there also to guide the environmental aspects in the corporate social responsibility. Here the Green Key- certificate was the most common one among the respondents. Only one respondent answered that the actions taken in the kitchen are not at all coming as a chain instruction, which is displayed in the table 5 below.

Table 5. Impact of the overall CR strategy or chain guidelines

Respondent	Answer
C1H1	The guidance of the chain is seen for example in the napkins on the breakfast, because the environmental friendliness is taken into consideration when choosing those. Additionally, also the organic products and that we also measure the waste that is coming from the breakfast”
C2H2	“Green Key- certificate has been from the beginning a defining factor – “
C3H3	“The chain is not really a part of it at all”
C1H4	“We are doing everything according to the chains instructions”
C4H5	“We have the Green Key- certificate to give guidelines what to follow and the chain also defines how big the food waste is allowed to be”
C5H6	“Recycling, energy efficiency –”

The main activities towards sustainability were recycling, measuring waste and considering what products to choose and from where the products are coming from. Many of the food service providers had similar things taken into consideration in their operations. As it turned out many of the actions done were part of the chain guidelines, but also the efforts from the individual hotel are seemingly important.

### 6.1.2 Results from theme two: Food waste

The general food waste questions that were same in both of the interview types included following aspects: the type of food waste generated and the reasons for it, the negative impacts and what ways there are to reduce it. According to the answers from a la carte, lunch and breakfast, breakfast was mentioned to be the worst considering food waste. When it came to certain products, products like bread and eggs were mentioned to be mostly found to be left on the customer plate during breakfast. Many of the food service



providers consider plate waste being more substantial and C1H1 states that their professional staff are putting a lot of effort into preventing the waste coming from serving and preparing. Conclusively customer plate waste was the biggest problem, but issues like food spoilage, product range and waste coming from serving and preparing was mentioned. However, serving waste is seen least of the issues. Dining type-wise breakfast generates the biggest amount of waste, then lunch type of dining and lastly a la carte service. The comments on the matter are shown in the table 6.

Table 6. The origin of food waste in hotels

Respondent	Comment
C1H1	"From the breakfast, most of the food waste is generated. Even though we have evening buffets for groups, they do not generate as much waste from the customer plates as breakfast"
C2H2	" – from the product range a lot of the waste that generates. Products expire."
C3H3	" It is usually meat or anything that is prepared for breakfast or lunch. Usually it is the warm dishes"
C1H4	" It kind of depends, surprisingly little comes waste from making too much food. The biggest portion, in my understanding, comes from the customer plates"
C4H5	" Mostly it is the plate waste – the one that goes straight to bio-waste. The waste from the food that we prepare is not too much. Porridge is something that is usually left on the plate."
C5H6	" The biggest waste generator is the bio-waste from breakfast. A la carte service does not really generate any waste."

The negative aspects of food waste was very clear and from every respondent financial, economic and contribution margin were brought up. The food waste is mentioned to be same as throwing money in the bin. Secondly the environmental issues were mentioned, however not as strongly as the economic issues. The comments on the negative impacts are displayed in the table 7.

Table 7. The negative impacts of food waste

Respondents	Answer
C1H1	"It effects to our food contribution margin, if it is thrown a lot away--"
C2H2	" Throwing money into the thrash, we are trying to optimize that everything we prepare would be sold. Additionally, also the sides of sustainable development, that we waste that we produce.
C3H3	" The money loss is the direct one, it is always seen in the contribution margin. It is not only the food, but also the transportation of the bio-waste."
C1H4	"It affects to the contribution margin, that is why we continuously try to reduce waste and very precisely check the number of customers so we can make the right amount of food"
C4H5	" Of course, it costs, the money issue is the biggest"
C5H6	" We kind of filter the demanding customers to us, because we have been doing well in the market and quality tests"

As every respondent recognizes the negative aspects of food waste, also actions are taken against it. As already mentioned in the chapter 6.2. CSR, some of the actions mentioned there are already the actions against food waste. Many of the respondents are using or required to use a measurement system for the waste generated. In addition, the leftovers from the buffets are used for staff meals. Furthermore, the seasonal products play a big part of the waste reducing due to the consumer behavior. C5H6 mentions that seasons have an effect to peoples eating habits and this is good taken into consideration. Additionally, portion sizes, different signs (such as guiding the people not to take more than they can eat) and using the possible products again in different meals.

### 6.1.3 Experiences and expectations on ResQ

After the set of same questions for all of the respondents, the ResQ related questions differ from each other due to the defining of both, previous expectations and actual experiences. Three of the hotels of the participants are representing the expectations and the remaining three will present the actual experiences, however also measuring how they differ from the original expectations. The structure of the questions, which can be seen in the appendices 1 and 2, will analyse the food sold through ResQ, its users and when they use it, benefits and challenges and previous expectations.

All the interviewees who were not using ResQ in their operations were heard of the platform. The first impressions of the platform were mainly positive. It was coherently thought

as a good or smart idea in the process of reducing food waste, however with some negative aspects such as how much workload it actually requires putting into it. Also, other expectations towards innovations in general were positive as they provide a larger network for sustainability. However, it was mentioned that the primary aim is that there would be zero food waste originating and so that the internal actions in the restaurant would be enough for this. But as these are needed as an aid, it is mainly experienced as a positive idea.

Table 8. First impressions on ResQ (2)

Respondent	Answer
C1H4	" As an idea extremely good, this way the food don't end up in trash but to people"
C4H5	" It is easy and good. It is a smart idea. It is easy to come get for five euros food for you and your family"
C5H6	" Good idea. But nowadays when you use it to get buns from there for 50 cent a piece, the workload what you use for it costs more than the actual food waste.

The reasons for the hotels using it, reflects the mindset of ResQ being a good and a smart idea. All of the hotels that use it have mentioned the reasons of their choosing it to be the active approaching from ResQ's side. The expectations before using it, was ResQ to be an easy way to reduce food waste with also some visibility in the platform and marketing value. Another reason from hotel C2H2 was that ResQ could be supporting the processes aiming to reduce food waste of the food service provider. From the expectations before the actual experiences, there has not been a lot of changes or differences. However, one of the respondents had experienced it positively and other two rather neutrally or slightly negatively.

Table 9. Actual experiences of ResQ (1)

Respondent	Answer
C1H1	" It has surprised us how much the customers actually purchase from it. It has been a positive surprise"
C2H2	" Personally, I can say that I thought there are approximately similar challenges that there actually are – how much we put there and what time"
C3H3	" Pretty much the same. You do not get much out of it. It is not a business for us"

#### 6.1.4 Using ResQ in the daily operations

The food sold through ResQ platform differs from hotel and the type of food service provider. However, as what comes to food sold and the popularity of those, lunch food according to the answers is the most popular through the ResQ platform. Breakfast is also sold but answered to be less suitable or profitable than the lunch food. Furthermore, individual products are sold, buns being the most popular from that product range. The beliefs for why the lunch food are being more popular lies on the quality and it is standing out from the other ResQ restaurants. In addition to the food that can be sold, there also food or products that the food service providers are not selling through the platform. Customer plate waste is the type of waste that goes directly into the bin, but additionally drinks and breakfast was mentioned. Even though one of the food service providers is selling breakfast, from another respondents' breakfast is not seen suitable to put into the platform to be sold. Furthermore, similar attitudes towards the breakfast is answered from the hotels that are not using it which is shown in the table 14. The comments on the products sold through ResQ are displayed below in the table 10.

Table 10. Products sold through ResQ (1)

Respondent	Answer
C1H1	"Lunches are even more popular, than the breakfast box-- ... everything we put in the boxes and everything is always sold through ResQ"
C2H2	"Through ResQ we sell pastries, buns and bread. Those are easy to put there"
C3H3	" Usually, everything that has made for lunch – warm food. From breakfast there is not really too many products that can be sold"

The timing when these products are sold through the platform has also an importance when considering the best possible sales. For example, during weekdays, lunch and after school or work hours the most products are picked up. C2H2 mentions that mornings are not the best hours for the sales, since there are not either waste generated or not enough people to buy the food through the app. Besides the timing, weather has also an effect to the sales since on rainy days the sales are not as good. Weekdays and afternoons are the best times according to the respondents to use the platform to sell the products.

In addition to the products and the timing also the target group of the ResQ products is good to acknowledge since it can possibly differ from the original target group of the hotels. The ResQ user group varies a lot according to the answers from the respondents. The average user is described to be from 25- 40, young adults or adults. However, also

families or older people buys for example the lunch products through this platform. Psychographic segmentation indicates to people who are looking for good offers in affordable quality food. ResQ has been experienced to attract new customers to the premises. The comments on the target group theme are shown in the table 11.

Table 11. Target group of ResQ products (1)

Respondent	Answer
C1H1	" We are this kind of business hotel, but I'd say that the ResQ users age is around from 25 to 40. The users are more adult students and some also with families who buys dinner for the families and significant others"
C2H2	" I'd say that young adults. It also attracts new faces; our regular customers won't buy through this"
C3H3	" Completely different target group. Over 30- year old's."

How the non-partner hotels saw the suitability of ResQ reflects the answers of the partner hotels. Breakfast is not seen the most suitable product for the platform and lunch food is considered to be more suitable. The answers also reflect the answers to the first impression of ResQ platform. As an idea it seems to be suitable, but with some challenges towards the usage.

Table 12. Expected suitability of ResQ towards the operations (2)

Respondent	Answer
C1H4	" Partly the platform is suitable, but there are challenges. Only using breakfast on it brings more challenges"
C4H5	" It would be beneficial, if there would be enough food waste. Lunch definitely the best, for breakfast I think it is not that good"
C5H6	" In the end comparing to ResQ, the best solution is to measure how much we buy and how much we prepare food"

The next subchapter displays more into detail the experienced and expected benefits and challenges of the platform from both perspectives.

### 6.1.5 Benefits and challenges of ResQ

The experienced benefits of ResQ do not directly correspond to the negative economic effects of food waste (such as the contribution margin mentioned in the subchapter 6.1.2).

The more valued benefits are more social, visibility and image related. However, the answers of the experienced benefits vary from each other in the way of how the ResQ was originally thought to be used in hotel. The table 13 displays the experienced benefits of the partners.

Table 13. Benefits experienced from ResQ (1)

Respondent	Answer
C1H1	" It is an image question. We want to show to the customers, partners and employees that we are as company aiming towards sustainable development. ResQ itself it is not a business, even though we get a little bit profit, but we didn't think of it as an extra business in the first place"
C2H2	" Of course, that we can sell the last products of the day and reduce waste that way. Also, that people will find us in Helsinki, it gives us visibility"
C3H3	" Some money comes out of it. Also not having to throw out food and some people will get cheaper food"

The non-partner hotels also see the benefits as reducing the food waste and aiming towards better contribution margins on food. It is seen beneficial for both: the one who sells the food and also the who is purchasing it. The sustainability aspect, other than economic, was not mentioned here. However, according to one of the respondents, C5H6, the platform could be beneficial more to other type of food service providers for example food production schools. The comments on expected benefits from the non-partner hotels are displayed in the table 14.

Table 14. Expected benefits of ResQ (2)

Respondent	Answer
C1H1	" Well yes, the benefits include that we can reduce waste and selling the product forwards and also getting the contribution margin definitely better"
C4H5	" Of course, the waste that is there, we can sell so we make a little bit of money – from the bin we do not get anything. The lunch food is good – people can enjoy it in the evening too"
C5H6	" I think that learning institutions would benefit more."

In contrast to the benefits, there are also challenges that might limit the experienced or expected benefits. The experienced challenges according to the interviewees are very limited. Mostly the usage experienced to be effortless and easy. However, the changes in the possible supply from the hotels side to the platform can create some issues. The food waste supply can differ from day to day and there is not a set menu that can be provided daily. The concerns were about is there enough food waste to use the platform frequently. The comments on the challenges are displayed below in table 15.

Table 15. Experienced challenges of ResQ (1)

Respondent	Answer/Comment
C1H1	" No. It has been very easy. It is important that we choose certain persons to be in charge who were trained for the task. So ResQ works really well and very easy to into use. Effortless and easy. Does not require much of an effort"
C2H2	" Challenges are maybe that the situations changes every day. It is about what we can put there and how much, is it smart to put only one or two products from which we can only get couple of euros. So, what we can put there it is the most challenging"
C3H3	"Nothing"

The expected challenges differ from the experienced challenges. The hotel restaurants who are not using ResQ are concerned about the work amount that the platform would cause. Are the benefits that the platform can bring more than the work amount needed. The operational staff is busy with the normal operations, so it is discussed would the usage of ResQ bring more work and take time from the normal operations. In addition, the concerns about the breakfast products was again mentioned here as a direct challenge towards using it. Table 16 displays the comments on the expected challenges.

Table 16. Expected challenges of ResQ (2)

Respondent	Answer/ Comment
C1H4	" Maybe it can cause some extra work and the money from it doesn't cover the work put into it. Additionally, I am not sure how it fits together with the breakfast products"
C4H5	" When we close the lunch and nobody is working in the restaurant in the evening, someone in the reception has to take care of the ResQ"
C5H6	" Nowadays we have to keep track on everything, every work hour is expensive in the efficiency thinking if you are working with strict budget. Things such as how long the packing of the products take, how much the packaging costs are and how much your work costs."

The question of what would affect to the decision of the hotel actually choosing ResQ and bringing it to reality from the idea level was also asked in the interview. As the respondents all knew the platform and could think of benefits and also challenges towards the usage of the platform. The reasons of choosing it reflect to somehow solving the challenges expected rather than increasing the benefits, such as the issues regarding breakfast, not enough food waste to put into the platform to be sold and also problems in the cold chain. The comments on the motivations are displayed in the table 17.

Table 17. Motivations towards using ResQ (2)

Respondent	Answer/Comment
C1H4	" I don't know, maybe in the breakfast it is somehow possible. It requires commitment and somewhat of working hours, but it is not an impossible idea"
C4H5	" If we would have more food waste, we would take it"
C5H6	" Sort of there is the risk, when it leaves from here that there is no more cold chain and, in that case, also the reputation is in danger"

Conclusively the results bring out the benefits and challenge aspects of using the platform in the operations. The answers are similar but vary depending on the attitude towards the platform. The more in-depth and detailed analyzing will be shown in the chapter 7 where the results are discussed.



## **6.2 Results from participation observation**

The participation observation, which was conducted in the food waste seminar and workshop for food service operators on 10.09. The workshop held by Motiva, was dealing with the issues and solutions on food waste. The participants in the workshop were representing different areas of the food service industries and industries which contribute to the food waste problem: restaurants, health care and social services, different technology providers and ministry of agriculture. In the table 18, will be displayed the results observed during the workshop. The table is divided on the left into observations, research questions and on the right side to reasons to reduce food waste and the solutions for these reasons that were brainstormed in the workshop by the industry professionals

Table 18. Participation observation results

Research question	What are the reasons for food waste in food service?	What solutions there are for these reasons?	Observations
What drivers there are to reduce food waste in hotels? / Food service industry in general	<p>The way of working has changed (Way, time and place has changed)</p> <p>Generating waste can be more economically profitable than avoiding it</p> <p>The actions against food waste are not seen enough profitable for the business</p> <p>Attitude affects to everything/ Motivation</p> <p>The lack of human resources: Too few staff, who is responsible and sales batches</p>	<p>Conversation of acquisitions (Price should not be the determinant)</p> <p>Operational model of basic operations</p>	
Are eco-platforms seen in hotels as effective solution towards sustainable development?	<p>Our mindset is limited</p> <p>Systems are attained without listening the actual user and not giving the staff enough training towards the systems</p> <p>Training and the know-how of employees</p>	<p>Development of data systems – user-friendly systems; easy to use</p>	
Can eco-innovations be a part of the corporate social responsibility strategy?	<p>The sales batches not match with the demand</p> <p>Lack of co-operation</p> <p>Data is in too many places: a lot of information but systems are not communicating together</p>	<p>Managing with knowledge and expertise: digital tools, attitudes and motivation, waste visible (kilos and euros), making staff to participate</p> <p>Profiting more of systems</p>	

The first research question to observe was the sub-question what drivers there are to reduce food waste in hotels or in this participation observation generally in the food service industry among the participants mentioned in the first paragraph. The new ways of working in the industry, economical aspects and the staff attitudes and not enough know-how among staff require drivers to strengthen the solutions towards them to make food waste

reducing more efficient. The solutions mentioned in the workshop were enough conversations of acquisitions and delivery contracts and operational model of basic operations.

The second sub-question are eco-platforms seen as an effective solution in hotels or again in this case generally in the food service industry towards sustainable development. The reasons for food waste were limited mindset towards new possible solutions in reducing waste. Another reason was regarding complicated systems that don't listen to users wishes and not enough training towards these systems. The solution for these was named to be development of user-friendly systems.

Thirdly the lastly observed sub-question regarding eco-innovation roles in the corporate social responsibility strategy. The reasons here were such as lack of co-operation and data is in too many places (too many systems not communicating with each other). The solutions include managing with knowledge and actually having enough expertise on the systems. As mentioned in the previous paragraph already, the systems should be easy to understand and use from managers side and as well from the employees side since they are using the systems in the everyday operational work.

## 7 Discussion

In this chapter the findings in the results of the empirical research will be discussed and analysed deeper. The chapter includes also a subchapter about the previously set research questions, a subchapter on the validity and reliability and as well as the learning outcomes chapter. Throughout the theory base and when moving on to the empirical results the same overall picture stayed: reducing food waste is an important part of the restaurant operations and a contributor towards sustainable development. The most important and interesting results supporting the research were themes such as how is sustainable development seen in the corporate social strategy, what drivers there are to reduce food waste, where does the food waste come from, what measures there are against it and how does the eco-platform ResQ as a concept is suitable to hotel restaurant environment.

As it already turned out in the theory base, having measures done towards sustainable development is important and necessary. Especially in the hospitality industry that has a big effect to the environment, so there is mentioned the responsibility of contributing to sustainable development in their corporate social responsibility strategy not only focusing on the philanthropic level (such as donating funds to charity) but also other levels such as economic, legal and ethical, which were displayed in the Carrols pyramid. As the economic segment in the Carrols pyramid (2016) was described to be the foundation of for the pyramid and profitable organization, the similar theme could be seen repeating in the interviews among all the respondents. The most negative aspects of food waste were seen to be related to the economic issues and only secondarily the issues related to the environment. Furthermore, in the interviews the understanding of the importance of sustainable development and the image to the stakeholders such as customers and was seen to be clear. The same theme was seen also seen in the chapter 2.3 where the drivers and barriers of CSR were discussed. According to Singal and Rhou (2017, 2- 3), the CSR activities and tools are helping to build brand awareness and increase customer loyalty.

In the restaurants recycling, measuring the food waste and considering what products to use (such as organic and fair trade- products) are important and taken into consideration in many of the restaurants. As in many cases the instructions of these actions come from the chain level it highlights the importance of the sustainable development related actions. However, also the implementation in the individual places requires motivation and training. The results from participation observation shows that that enough training of staff is im-

portant and vital when new ways of working are introduced to the operational work of hotel. The proper implementation of the actions requires of course the guidelines and proper planning of the actions that will be done and also enough know-how and expertise on these from the staff's side, because the staff in the operational side is implementing the actions.

Besides the other actions, the food waste reducing which has the main focus throughout this research, is taken into consideration in the hotel operations. On a global level food waste does have wide effects on the different aspects of sustainable development: environmental, social and economic aspects. According to the results in the interviews, the biggest driver there in hotel food service provider level is the economic driver. Money loss and the food waste impacts to the contribution margin of food are experienced to be substantial and the main reason to reduce food waste. Additionally, the environmental issues are seen as a reason to contribute for solutions against the environmental issues and as well as giving a good and responsible image to stakeholders of the hotel. The raised consumer awareness mentioned in the theory base in the chapter 3.4 can be one of the drivers that image as a sustainable company is important. The external pressure can be the reason for chains having more and more guidelines aiming to reduce the food waste, especially by using tools to measure it.

When researching ResQ as a suitable method to reduce food waste, generally the research indicates to positive overall outcome. However, the suitability depends on a few components in the hotel food service. The suitability will be discussed and analysed deeper in the next chapter as an answer to the main research question.

## **7.1 Answers to the research questions**

The research questions set in the beginning of the thesis were:

The main research question of this thesis is:

What are the expectations and actual experiences of the restaurants in hotels towards technological platforms against food waste such as ResQ?

The sub-questions in this thesis are:

1. What drivers there are to reduce food waste in hotels?
2. Are eco-platforms seen in hotels as effective solution towards sustainable development?

### 3. Can eco-innovations be a part of the corporate social responsibility strategy?

With the combination of the theory base and the analysis of the two research methods interviews and the participation observation the main research question and the sub-questions are answered in this thesis. The first sub-question, what drivers there are to reduce food waste in hotels, was discovered in the theory in the chapter three and more specifically subchapter 3.4 where the general reasons to reduce food waste were introduced. The reasons found out in previous studies were for example external drivers such as UN and EU Commission and internal drivers such as economic reasons in the matter. From the interviews similar internal reasons turned out to support the existing theory. As already displayed in the results the negative aspects of food waste were mainly focusing on the economic sustainability. Food waste directly affects to the contribution margin of the restaurant. This was distinguished from every interview made and from two hotel restaurants this was the only negative aspect mentioned. Other reasons in addition to the economic ones were environmental sustainability and possible extra work which is partly linked to the economic reasons. However, the reason behind the environmental sustainability mentioned by hotels can be due to the raised awareness among consumers and food service providers. The goals for example that UN has, provides information, understanding and knowledge to the people about food waste and other environmental issues. Hotels also see the raised consumer awareness a reason to work on more sustainable ways in the kitchen. These drivers push hotels and restaurants to the sustainable solutions which are considered to be very valuable in the modern society.

The observations to this sub-question from the participation observation form were made based on the answers displayed in the table 18. Conclusively the modern hospitality and food service industry requires modern day solutions in order to be economically able to compete in the industry and to adapt to the modern trends of society. Furthermore, these new kinds of technological solutions could make the food waste reducing more economically profitable which could drive companies more towards reducing waste. Also, motivating staff with new solutions could shape the attitudes as well.

The second sub-question, are eco-platforms seen in hotels as effective solution towards sustainable development, was not as coherent when it came to the results as the sub-question number one. This can be due to the nature of the eco-platforms being relatively new in the operations of reducing food waste. The raised consumer awareness has created a market and need for these kinds of solutions, but the effectiveness can depend on a few things. The empirical part of this research provided direction to the solution. According to the results, effectiveness depends on factors such as the employee mindset, the

type of food or meal served (buffet, a la carte, individual products), and the measures already done against food waste in the property as in are they already efficient enough. To support the interview results, the observations from the participation observation form were about limited mindsets. New solutions would be needed, especially systems that are co-operative and easy to use in the busy food service operations.

The third sub-question addressing the role of the eco-innovations in the corporate social responsibility strategies could not either been as clearly answered as the first sub-question. This is due to the undefined measures in the strategy, what actually belongs to the strategy and what not. However, the theory base and participation observation results indicates to a need of new kind of actions for food waste reducing which could mean the role of eco-innovations in the CSR strategy. The innovation sub-chapter 4.2. that presented eco-innovations showed that innovations related to eco-friendly heating and lighting are already in usage in hotels. Additionally, from the interviews the importance of different certificates such as using fair trade- products and having a Green Key- certification are actions taken directly towards being eco-friendlier and could be considered to be part of CSR. The observations from the participation observation were linked to the previous question of eco-platforms due to is similar technology aspect. They were such as using co-operative systems, that for example new innovative tools should be communicating with previous systems that can possible be part of corporate social responsibility strategy.

The main research question, what are the expectations and actual experiences of the restaurants in hotels towards technological platforms against food waste such as ResQ, was answered with the help of setting the sub-questions, theory base and the empirical part. The expectations and actual experiences do not differ a lot from each other which is due to the visibility and active approach of ResQ. The hotels that were interviewed as non-partners were approached by ResQ in the past and as well all the hotels that are using ResQ were also approached by ResQ before choosing it. The activeness has been experienced as a positive and an efficient method of working even though choosing it can depend on a few things. The positive experiences are mainly related to the economic and the positive visibility aspect of ResQ. However, the economic benefits are not seen as major as other ways (such as the measuring of waste) since the revenue from it are usually used to cover the possible and inevitable expenses (such as packaging and work hours). The working hours was one of the expected concerns of the non-users since it is causing extra work would count as very inconvenient.

According to the results, the more ResQ is experienced as voluntary or “extra” method towards food waste reducing the more effective it is experienced. Additionally, the suitability of ResQ related to target group is considered to be very suitable even though it very much differs from the average target group of hotels. It brings extra visibility and gives an image of a responsible company which is considered to be very valuable nowadays. From the food service type, such as a la carte and buffets, the experienced and expected results support each other. The using hotels prefer it to be used for lunch (also better in the afternoon if they are selling individual products) rather than breakfasts even though the breakfasts seem to be more problematic with the food waste. The concerns about breakfast are mainly unsuitable products for the platform and lunch food is experienced to be more suitable. Furthermore, some of the chains have strict rules and actions done already about the food waste and due to this the amount of food waste is not substantial enough for the platform, especially if the hotel only has a la carte (which does not have as much of waste as buffet service) or only breakfast.

Conclusively the ResQ- platform is considered to be a suitable idea and method to reduce food waste. Hotels also provide quality ingredients (organic and fair-trade products) that makes the food high quality also when sold through ResQ. How suitable it is depending on the amount of food waste, existing measures and guidelines towards food waste, food service type of the provider and general attitudes towards the possible benefits of the platform (focusing on the image and marketing related benefits rather than economic benefits). In a way it could be considered to be eco-marketing with some of economic benefits from it. The challenges expected, that can also affect to the suitability, are issues such as keeping the cold chain all the way through to the customer and possibility restaurants that are not using ResQ right and charging the normal price from the products which is linked to the controlling problems of the platform.

It is difficult to evaluate the suitability of the platform to the entire hotel industry or all the chain hotels in Helsinki. The suitability depends more on the operations and attitudes of an individual hotel, for example there might different amount of food services in the hotel, the actions already done overweight the possible new ones, the attitudes are positive towards ResQ (throughout the entire staff) and additionally location could affect since lunch food (that was the most popular food type sold through ResQ) could be more popular in areas where there are more offices or companies to buy the food.



## 7.2 Validity and reliability

Validity and reliability are both terms that are linked to the evaluation of the research results. However, in the qualitative research the terms have gotten different kind of interpretations. The term validity means ability of the research method to measure exactly what was meant to measure with it. Problems with validity can occur for example in a situation where the respondents of questions understand the questions differently as the researcher has thought them. If the researcher still analyses the answers according to his own paradigm, the results cannot be considered valid. Validity, however, more in-depth in qualitative research means how the description and the explanations and interpretations fit together. Reliability in qualitative researches comes from for example detailed description of the research process (interview circumstances, distractions, observations and length). It is important to let the reader know on what basis are the conclusions made. To strengthen both validity and reliability, it is beneficial to use different types of methods in one research. (Hirsjärvi & al. 2009, 231- 233.) Conclusively, validity highlights the connections between the researched results and the conclusions made based on them. It is important to make sure that the questions are right and understood right. In the reliability it is good to take into consideration the social constructiveness and their own opinions on the matter. Some people might answer in a socially acceptable way, instead of how the things actually are. The interview circumstances are in a big role when ensuring the reliability. (Saaranen-Kauppinen & Puusniekka 2006)

The validity in this research was ensured with the certain interview type. As one of the issues regarding the validity in researches as mentioned in the previous paragraph was the understanding of the questions. In this research semi-structured, already determinate questions of certain themes were used to avoid misinterpretations and misunderstandings. The results and comments of the interviews were strengthened with the explanations and connections to the theory base. To strengthen the reliability in the interviews, before the actual interviews four test interviews were conducted. When planning the interview questions, the aim was to create set of questions where the answers would not be predictable. However, the risk still was, as in all interviews, the interviewees answering in socially acceptable way or understanding the question in a different way than author was it originally. In addition to the risks was the rush of some of the interviewees, which could have affected to the answers of being narrowed down. However, the topic of food waste seemed to be experienced as important which could have affected positively. Furthermore, both in participation observation and interviews were answered originally in Finnish so the translation to English could have affected to original answers, even though made in care and in a very precise way not forgetting point. The issues in the participation observation could

have been due to the observation made in one day and not for example during a longer period of time, additionally also by one person. However, in contrast the participation observation included the industry professionals that the actual information gotten could be considered valid.

### **7.3 Learning outcomes**

The whole process of writing the thesis from planning phase to the discussion and analysing phase were very demanding and required a lot of time during the process. However, the topics nature of being very current and major made it very interesting to learn and research more about it. It has helped the author to also increase deeper knowledge about food waste and things related to it. The thesis process has also made the author to pay attention to different actions taken against food waste in restaurants and reflect those to the authors own experience in a hotel restaurant.

The challenging part of the thesis process was the implementation of the semi-structured interviews. The author did not have a lot of previous experience on conducting interviews this extensive on a certain topic or the experience of contacting the possible interviewees the best way. However, the authors skills as an interviewer could be described strengthened skill during the process. The theory framework needed a lot of internet search, since about food waste and ecologic innovations, there is not a lot of book sources available yet, however the author believes that this sustainability trend will create more supply and demand for these kinds of sources of information.

Regarding the timetable set in the first phase of the thesis, the author managed to stay in the set schedule due to proper planning and also some planned extra time for the end, since scheduling of the interviews took longer than expected. The extra time helped the time management throughout the thesis and made it easier to stick with the due dates. The strengths of the thesis were getting the right and knowledgeable people to participate in the interviews and getting realistic answers regarding the topic.

Conclusively the thesis has increased the authors interest more towards the topic and has made the author choose more sustainable choices regarding food waste in the author's own life as well. In addition, the seminar and food waste workshop where the author could participate were really interesting and educational chance to learn about the relevancy of the issue and what the future possible needs in order to reduce food waste more efficiently.

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## Appendices

### Appendix 1 Partner hotel interview questions

1. What is your position in the company? / Missä asemassa työskentelet hotellissa?
2. How long have you been working in the company? / Kuinka kauan olet työskennellyt hotellissa?
3. When considering sustainable development, what kind of aspects of the restaurant operations should be taken into consideration? / Minkälaisia kestävään kehitykseen tai ekologisuuteen liittyviä asioita ravintolan toiminnassa otetaan yleensä huomioon?
4. How are the some of the overall CR activities of the company seen in the hotel restaurant? / Kuinka ketjun yritys vastuulliset linjaukset näkyvät hotellin ravintolassa?
5. What kind of food waste are the most generated in hotel kitchen? For example: bread, meat or fish? / Minkätyyppistä ruokahävikkiä kertyy hotellin keittiössä? Esimerkiksi: leipää, lihaa, kalaa?
  - a. What of this food waste is generating the most? Mitä ruokahävikkiä näistä kertyy eniten?
6. Where and how is this waste generated? / Kuinka ja missä tämä ruokahävikki syntyy?
7. What kind of problems or negative impacts does this food waste have? / Minkälaisia ongelmia tämä ruokahävikki aiheuttaa ravintolassa?
8. What kind of food are the most purchased in the ResQ? / Minkä tyyppistä ruokaa myytte ResQ:n kautta?
  - a. What kind of food is the most purchased through ResQ? / Minkä tyyppistä ruokaa ostetaan eniten ResQ:n kautta?
9. What kind of food waste cannot be sold in ResQ? / Minkätyyppistä ruokahävikkiä ette myy ResQ:n kautta?
10. Who uses or is responsible of ResQ in the restaurant? / Kuka ResQ:ta käyttää ravintolassa tai on vastuussa ResQ:sta ravintolassa? (==??)
11. Do a certain season, day of the week or a time when there are the most purchases through ResQ? / Vaikuttaako vuodenaika, viikonpäivä tai aika ostovolyymiin ja jos kyllä niin miten?

12. How would you describe the target group of ResQ? In what ways it differs from the normal target group of the restaurant/ hotel? / Kuinka kuvailisit ResQ:n kohderyhmää? Millä tavalla se eroaa tavanomaisesta ravintolan kohderyhmästä?
13. What kind of benefits has the usage of ResQ brought? / Minkälaisia hyötyjä ResQ:n käyttö on tuonut?
14. Has there been any difficulties/ challenges in the usage of ResQ? / Onko ResQ:n käytössä ollut mitään vaikeuksia/ haasteita?
15. What were the motivations to choose ResQ as a tool to reduce food waste? / Mitkä olivat motivoivat syyt valita ResQ tavaksi vähentää ruokahävikkiä?
16. In what ways do the expectations before are different from the actual usage of the app? / Millä tavalla alkuperäiset odotukset eroavat varsinaisesta sovelluksen käytöstä?
17. Has the usage of ResQ had an effect to the corporate culture/ atmosphere within the staff? / Millä tavalla ResQ on vaikuttanut yritykseen? Esimerkiksi henkilökuntaan.
18. What kind of development ideas would you have for ResQ for the future? / Minkälaisia kehitysideoita keksisitte ResQ- sovellukseen tulevaisuutta varten?
19. What other ways you use or can think of to reduce food waste? / Mitä muita tapoja käytätte tai voisitte kuvitella olevan mahdollisia tapoja ruokahävikin vähentämiseen?

## Appendix 2 Non partner hotel interview questions

1. What is your position in the company? / Missä asemassa olet hotellissa?
2. How long have you been working in the company? / Kuinka kauan olet työskennellyt hotellissa?
3. When considering sustainable development, what kind of aspects of the restaurant operations should be taken into consideration? / Minkälaisia kestävään kehitykseen tai ekologisuuteen liittyviä asioita ravintolan toiminnassa otetaan yleensä huomioon?
4. How are the some of the overall CR activities of the company seen in the hotel restaurant? / Kuinka yrityksen yritys vastuulliset linjaukset näkyvät hotellin ravintolassa?
5. What kind of food waste are the most generated in hotel kitchen? / Minkätyyppistä ruokahävikkiä kertyy hotellin keittiössä? Esimerkiksi: leipää, lihaa, kalaa?
  - a. What of this food waste is generating the most? Mitä ruokahävikkiä näistä kertyy eniten?
6. Where and how is this waste generated? / Kuinka ja missä tämä ruokajäte syntyy?
7. What kind of problems or negative impacts does this food waste have? / Minkälaisia ongelmia tämä ruokahävikki aiheuttaa ravintolassa?
8. *(Are you familiar with the eco-platform ResQ?) / Oletko tietoinen suomalaisesta ResQ- sovelluksesta?*
9. What is the first impression of ResQ? / Mikä on/ oli ensivaikutelma ResQ:sta?
10. How suitable would you consider the platform be for the restaurant? E.g. in terms of target group and benefits? / Kuinka soveltuvan koette ResQ: n olevan tähän ravintolan konseptiin? Esim. kohderyhmän ja hyötyjen suhteen?

No, se on osaltaan soveltuva mutta siinä on myös haasteita. En pysty ihan ympäripyöreitä vastausta antamaan.

  - a. Mihin ruokailutyypin kokisitte ResQ: n sopivan parhaiten ravintolassanne? Esim. aamiainen/ lounas?
11. What benefits would you expect from using ResQ? / Mitä hyötyjä/ vaikutuksia ajattelisitte ResQ: sta olevan ravintolalle?
12. What do you think would be the possible challenges in the usage of ResQ? / Mitä mahdollisia haasteita ajattelisitte ResQ: sta/tällaisista innovaatioista olevan?

13. What kind of reasons would make you choose such a concept or not to choose? / Mitkä syyt voisivat vaikuttaa ResQ: n valintaan/ ei-valintaan ravintolassanne?
14. What other expectations would you have towards innovations such as ResQ? / Minkälaisia muita odotuksia teillä on innovaatioita kuten ResQ kohtaan?
15. What other ways you use or can think of to reduce food waste? / Mitä muita tapoja käytätte tai voisitte kuvitella olevan mahdollisia tapoja ruokahävikin vähentämiseen?