

Moaadh Benkherouf

**WASTE MANAGEMENT PRACTICES IN TOURISM DESTINATIONS OF FINNISH
LAPLAND**

Master's Thesis

Northern Tourism Degree Programme

Spring 2023

University of Lapland, Faculty of Social Sciences

Title: Waste Management Practices in Tourism Destinations of Finnish Lapland

Author: Moaadh Benkherouf

Degree Programme: Northern Tourism (NoTo)

Type of work: Master's Thesis

Number of pages: 69

Year: 2023

Abstract

Tourism in Finland holds a significant position in Finnish economy, extending from Southern to Northern Finland, and sustainable tourism is being heavily promoted nowadays. This study focuses on waste management practices as one of many important topics related to sustainability and sustainable tourism, implementing qualitative data analysis, and applying practice theory as a theoretical approach. The research subject revolves around understanding the current situation of solid waste management in tourism, how existing issues in certain practices are addressed, and how the whole waste management system can be improved. Four semi-structured thematic interviews were conducted with stakeholders in the tourism industry, namely Destination Marketing Organization (DMO), academic, waste management company, and tourism resort. The findings conclude that the practices generating the most waste in Lapland are related to consumption, biowaste, and building projects, which further supports literature that discusses these practices. Recommendations for improvement mostly revolve around implementing local waste treatment possibilities, in addition to increased education, raising awareness, and close collaboration, utilizing a multichannel approach in these. The study also recommends further research on the status of waste beyond collection, in addition to exploring the possibilities of adopting innovative waste management practices that have been successfully implemented in different parts of Europe. The study was limited in the sense that it did not involve a case study due to the anonymity of the participants, which present an opportunity in the future for area-specific studies for waste management practices in Lapland.

Keywords: waste management, sustainability, practice theory, qualitative analysis

TABLE OF CONTENTS

1 INTRODUCTION	5
1.1 Background	5
1.2 Study Objective	10
1.3 Structure of the Study	11
2 LITERATURE REVIEW	13
2.1 Research on Waste Management	13
2.2 Solid Waste Management and Practices in Tourism- Finland	14
2.3 Solid Waste Management and Practices in Tourism- Outside Finland	20
3 PRACTICE THEORY AS A THEORETICAL APPROACH	30
3.1 Practice Theory	30
3.2 Applying Practice Theory on Waste Management in Tourism	32
4 DATA COLLECTION AND ANALYSIS METHODS	33
4.1 Constructivist Approach	33
4.2 Data	34
4.3 Analysis Process	35
4.4 Ethical Issues and Concerns	36
5 DATA ANALYSIS	38
5.1 Content Blocks and Categories for the Interview Guide	38
5.2 Codification	39
5.3 Emerging waste generation practices from the data	42
5.4 Waste management challenges	47
5.4 Improving waste management	50
6 DISCUSSIONS	56
7 CONCLUSIONS	61
REFERENCES	64
APPENDIX 1. Employment in the tourism industry by sector in 2019	69
APPENDIX 2. Employment in the tourism industry by sector in North Ostrobothnia and Lapland	70
APPENDIX 3. Interview Guide	71
APPENDIX 4. Letter of consent	73

LIST OF TABLES

1. Tourism Demand in Finland	6
2. Tourism Demand in North Ostrobothnia and Lapland	6
3. Municipal waste by Year	9
4. Categories developed from the interview guide	39
5. Final themes and categories	40
6. Specification of categories and fragments share	41

LIST OF FIGURES

1. Registered Overnight Stays in Lapland	7
2. Content blocks for interview guide	38

1 INTRODUCTION

1.1 Background

Tourism in Finland holds a significant position in Finnish economy, extending from Southern to Northern Finland. It holds a share of 4% GDP in the economy, and it was predicted that it would generate up to EUR 25 billion in revenue by 2025 (Clausnitzer, 2022). Prior to COVID-19, international tourism demand was observed to be increasing at an annual rate of 8% between 2017 and 2019. In 2019, tourism generated an estimated revenue of EUR 16.3 billion, about 67.5% of it was from domestic tourism and the remaining 32.5% was from international tourism (Ministry of Economic Affairs and Employment, n.d.). In 2021, an estimate of 17.5 million overnight stays in Finland was recorded, two million of which were international tourists. Until 2019, prior to the COVID-19 pandemic, the number of international tourists' arrivals was steadily increasing, most significantly in Lapland and Uusimaa, most of whom were from Germany, UK, Sweden, and Estonia (Clausnitzer, 2022).

Due to the pandemic, a total decrease of 41% in revenue was estimated (EUR 9.7 billion), which was brought up to EUR 11.2 billion in 2021 thanks to the increasing demand in domestic tourism. The locals' increased interest in domestic holidays due to the rising trend of climate-conscious tourism played a major factor in this (Ministry of Economic Affairs and Employment, n.d.; Clausnitzer, 2022). Despite the significant recovery, international tourism demand kept facing a decline. On a regional level, tourism demand was found to be mostly concentrated in Uusimaa, Northern Ostrobothnia (4%), Southwest Finland (6%), Pirkanmaa (6%), and Lapland (7%), where reportedly over half of the tourism demand was foreign (Ministry of Economic Affairs and Employment, n.d.).

Tables 1 and 2 illustrate the tourism demand, first in Finland, then in Northern Ostrobothnia and Lapland specifically.

Table 1. Tourism Demand in Finland (VisitFinland, 2022).

	WHOLE COUNTRY	
	2019	2020*
TOTAL TOURISM DEMAND, EUR million	16,260	9,673
Inbound tourism demand, EUR million	5,288	1,539
Domestic tourism demand, EUR million	10,972	8,134
Domestic leisure tourism demand, EUR million	8,851	6,167
Other domestic tourism demand (compensated business trips, own free-time residences), EUR million	2,121	1,967
Inbound tourism demand total, share of total tourism demand %	33	16

Table 2. Tourism Demand in North Ostrobothnia and Lapland (VisitFinland, 2022).

	North Ostrobothnia		Lapland	
	2019	2020*	2019	2020*
TOTAL TOURISM DEMAND, EUR million	681	536	1,130	731
Inbound tourism demand, EUR million	134	76	599	270
Domestic tourism demand, EUR million	547	460	531	461
Domestic leisure tourism demand, EUR million	478	391	395	351
Other domestic tourism demand (compensated business trips, own free-time residences), EUR million	69	70	135	111
Inbound tourism demand total, share of total tourism demand %	20	14	53	37

Available tourism and accommodation statistics in Lapland indicate a 14% increase in total overnight stays in 2021 compared to the previous year. The total overnight stays were approximately 2.3 million, 557,000 of whom were international tourists. This was noted to be 28% less than 2020. Figure 1 illustrates the variation in registered overnight stays from 2017 until 2021. The market share of Lapland out of total registered bed nights was 13.4 % (0.9% less than 2020), and the total accommodation sales was approximately EUR 126.7 million, a 3.2 million increase compared to 2020 (Visitory, 2021).

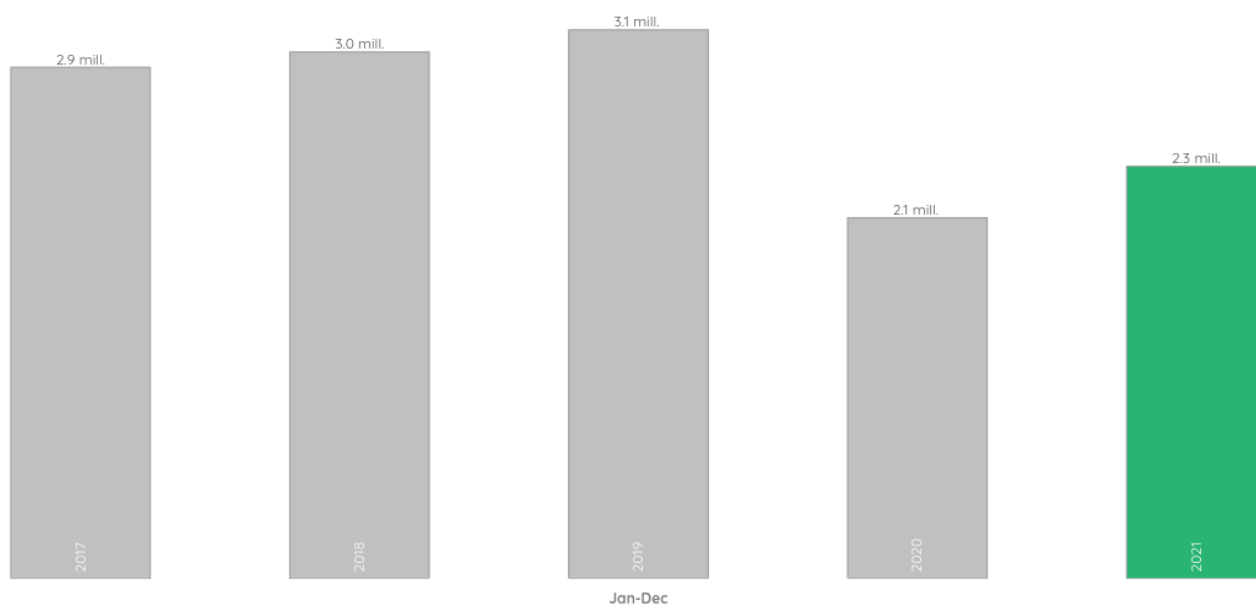


Figure 1. Registered Overnight Stays in Lapland (Visitory, 2021).

2022 so far has been witnessing a significant increase in overnight stays compared to 2021, the total stays until October being 2.4 million. Overnight stays for international tourists were approximately 883,000, with the number expected to drastically increase with the upcoming Christmas season. The market share has increased by 1% compared to 2021 over the same period (11.7%), and the registered accommodation sales so far are approximately EUR 143.9 million, a 65.1 million increase compared to the same period in 2021 (Visitory, 2022).

When looking at employment in the tourism industry, it was estimated in 2019 that there was a total of 154,000 employed people, making up almost 6% of the total employed people in Finland. Other sectors connected to tourism, such as accommodation, catering and transport, make up a total of about 120,800 employed persons. As observed, tourism and related sectors in total created up to 274,800 job positions in Finland. A table 3 breaking down employment by sector in 2019 can be found in the appendix (Ministry of Economic Affairs and Employment, n.d; VisitFinland, 2022).

In 2019, a total of about 15,200 job positions related to tourism were created in North Ostrobothnia, while 12,700 job positions were in Lapland. Another table breaking down these numbers by sector can be found in the appendix (VisitFinland, 2022).

Sustainable tourism development is being heavily promoted nowadays. The environmental aspect of sustainability is essential to maintain the image of natural sights and the destination overall. A significant part of that is appropriate practices in solid waste management. In 2021, it was estimated that a total of 3,376,000 tonnes of municipal waste were generated, corresponding to about 609 kg of waste per inhabitant. The share of energy recovery from the total waste was estimated to be 62%, while 37% of the waste was recycled and the rest went to incineration, landfill, and other disposal methods (Statistics Finland, 2021). There are currently no available statistics on the amounts of waste generated in North Ostrobothnia or Lapland. Table 3 lists the amount of waste by treatment method in 2020 and 2021 (Tilastokeskus, 2021).

Table 3. Municipal waste by Year (Tilastokeskus, 2021).

		Weight (tonnes)
2020	Total	3,376,792
	Energy recovery	1,931,974
	Incineration without energy recovery	2,522
	Material recovery	1,424,280
	Landfilling and other disposal	18,016
2021	Total	3,376,165
	Energy recovery	2,103,188
	Incineration without energy recovery	6,088
	Material recovery	1,252,390
	Landfilling and other disposal	14,499

The currently available data on generated waste by industry is only up to 2020. The total municipal waste was a bit more than in 2021, but not by much, as seen in table 5 above (Tilastokeskus, 2021). The data does not specifically indicate the amount of waste coming from tourism, but after carefully observing the codes used in industrial classification, it was possible to get a rough idea on the amount of waste. The so-called NACE, Nomenclature of Economic Activities (or in French; classification des activités économiques), designates the integrated classification system for products and economic activities (CONNECTS, 2022). The codes are classified by divisions from A to U, each letter representing an industry or group of business activities. The relevant divisions to tourism can be I, which represents “Accommodation and Food Services”. This includes hotels and similar accommodation, and food and beverage service activities (NACE Codes, 2022). According to the data from Tilastokeskus (2020), the total amount of generated waste from division G-U (Services, Government) was 1,108,000 tonnes. About 823,000 tonnes of that waste comes from paper and cardboard waste, mixed waste, and other waste. It can be safely assumed that part of that comes from accommodations and food services.

Previous studies of waste management of tourist centers in Lapland indicate that the large seasonal variations of waste, which imposes a challenge on local waste management systems (Tomperi et al., 2017). In addition, there is also the challenge of long distances to waste treatment facilities (Tomperi et al., 2014; Piippo et al., 2014).

There is also a matter of contradiction between what the visitors want and how they act. For instance, they insist that hotels should act in an environmentally friendly manner, but on the other hand, the visitors do not make it any easier by wasting large quantities of food. This comment was provided to me by Eva Pongrácz, who was part of the project in Ylläs (Pongrácz, personal communication, June 2022).

Due to these issues, it is essential to further study waste management in relation to tourism, especially in the northern part of Finland where significant seasonal variations are expected annually.

1.2 Study Objective

This study approaches the issues of waste management from the social sciences point of view, where different stakeholders in the tourism industry are interviewed for different perspectives on the issue. The research subject revolves around understanding the current situation of solid waste management in tourism, how existing issues in certain practices are addressed, and how the whole waste management system can be improved.

The study observes how tourism destinations in Finnish Lapland are affected by municipal and individual waste management practices, and then recommends how such practices could be improved and whether they should be abandoned. The study will also call for further research and studying, given that some aspects of the topic may need that.

The main aim may be defined with the following sub-aims:

- a. Identifying waste management issue and practices in Finnish Lapland in relation to tourism
- b. Identifying who is responsible for which practices
- c. Identifying the challenges associated with waste management that may have resulted in existing practices
- d. Based on findings, concluding which practices must be replaced, which practices could use some improvement, and which practices seem to function well. The findings can highlight issues and areas that call for further studying and development.

In this thesis, data will be collected from several interviews conducted with multiple stakeholders (e.g., academics, tourism companies, waste management companies). Secondary data in the form of numbers or statistics are collected from various databases. The data from interviews will be analyzed using a qualitative approach, following a practice theoretical approach.

The findings of the thesis will contribute to providing a clearer overview of existing practices in waste management and the issues associated with them. They could provide a foundation for further awareness, consideration, and development to the different stakeholders involved. This would ensure better management of tourist destinations, and a huge step towards promoting sustainability and environmental friendliness for such destinations.

1.3 Structure of the Study

The study starts with a review of different types of literature covering the topic of waste management in tourism destinations. Types of literature included in the thesis are mainly journal articles, reports, and books. Master's and bachelor's theses are also included but are not treated as main content for the study. The work done by students would provide an interesting perspective on the topic, which in return would serve as a good basis for further exploring the topic from their viewpoints.

The literature review is then followed by a discussion on the theoretical approach of the study, namely practice theory, where the relevance and choice of this approach is justified. After that, data collection and analysis methods are discussed, describing the defined paradigm and the data to be analyzed and the process it goes through for analysis. The main source for data in the thesis is through interviews, and hence the choice of participants is justified, and the thematic structure of the interview is introduced. Ethical issues and concerns possibly arising from the study are then addressed. The stakeholders participating in the interviews are voluntarily taking part and are free to step out if they feel so. They are informed of the study topic and its purpose, and therefore consent to using the data they provide for the sole purpose of the thesis. The input they provide is treated with anonymity and confidentiality, and the research must follow the principles of responsible conduct of research (TENK, 2013).

The data analysis process is then described, followed by analyzing and presenting the findings, which will be discussed and connected to the literature in the section after that. Finally, the study is concluded by summarizing the findings and the value they added to the study, and limitations calls for further research are then presented.

2 LITERATURE REVIEW

2.1 Research on Waste Management

In this section, available literature discussing waste management in tourism is explored. This helps in providing an understanding on what kind of tourism-related practices in waste management this study focuses on. Defining such practices is essential to determine their impact and significance in the waste streams, and to also identify the involved stakeholders. In addition, understanding which practices are most significant further helps in the data collection stage, where different but relevant stakeholders are interviewed.

The review involves a wide selection of journal articles, reports, books, and deliverables related to waste management in tourism, in addition to master and bachelor theses. However, it must be noted that the theses are not used as main content for the study, but rather as tools that would provide a student's perspective on the topic, which in return would serve as a good basis for further exploring the topic from their viewpoints.

The literature review is divided into two sections, the first of which explores solid waste management and tourism related practices in Finland. The second section explores the topic as well, but in other parts of the world. Tourism-related waste management issues in other countries may not be the same as in Finland, and therefore the same solutions or recommendations may not be applicable here or may even be irrelevant. Nevertheless, exploring other parts of the world and how they handle their tourism-related waste issues can provide new perspectives for Finland in their path towards sustainable, green, and responsible tourism.

2.2 Solid Waste Management and Practices in Tourism- Finland

Not much research has been done in Finland regarding waste management in tourism, and it has been observed that such a topic has mostly been studied on a case-by-case manner, and mostly not from a social sciences perspective. Therefore, some of the used literature is technical in terms of waste management methods. Nevertheless, they are an important part of maintaining the image of a sustainable and environmentally friendly tourism destination, hence they are part of this literature review.

Research was conducted in 2014 by Tyrväinen et al. on tourists' environmental and accommodation preferences in northern Lapland tourism destinations. The results indicated that dependence on the tourists' efforts alone in enforcing sustainability practices is not enough. Promoting sustainable practices is achieved by designing good tourism products that further promote pro-environmental behavior. One important tool is eco-efficiency, where increasing resource productivity would result in a reduction of environmental impacts from businesses and urban environments. Eco-efficient tourism development can be achieved by compact land use and building patterns, efficient transportation infrastructures, low-impact energy solutions, and waste management systems that reduce the amount of energy and natural resources needed and the wastes and pollutants produced by tourism activities (Tyrväinen et al., 2014). It is clearly observed that efficient and low-energy waste management systems are a key aspect in achieving eco-efficiency and sustainability in tourism.

Tomperi et al. (2014) studied the energy potential of biodegradable waste in Kolari. The seasonality of the destination and the long distances, in addition to the elevating amount of waste were noted to impose challenges to the waste management system in Lapland along with the tightening EU and Finnish legislations and regulations. Most of the generated waste was found to come from Ylläs, which is the third most visited tourism center in Lapland. Utilizing biodegradable waste in waste-to-energy technologies locally would result in reducing landfill emissions, reliance on fossil fuels, and transportation expenses from the long distances to landfills. This would improve the efficiency of the waste management system and producing renewable energy would certainly improve the image of the area as an attractive tourism destination (Tomperi et al., 2014).

A subsequent study on the use of bio-waste to revegetate eroded land areas in Ylläs was done with the aim for a zero-waste approach for an improved image of Finnish Lapland as a sustainable tourist destination (Piippo et al., 2014). Recreational activities in the area, such as skiing and hiking, were found to have adverse effects on the biodiversity and ecosystem services of Northern Finland due to erosion and wear caused by such activities, compromising the attractiveness of the highly touristic region. In addition, these and other tourism activities are a cause for waste generation, which imposes a challenge on the waste management systems in Lapland that mostly rely on disposal of part of the bio-waste to landfill along with mixed waste partly due to the lack of infrastructure, sorting possibilities and collection networks in Lapland. The amount of landfilled waste from Lapland was reported to be 6% of the total waste generated in Finland, which is a large percentage considering Lapland's population is only about 3.5% of Finland. This is not even done in the area due to the lack of nearby waste management facilities, and it does not comply with the EU Landfill Directive (1999/31/EY) nor the strategy of Finland to reduce the amounts of biodegradable waste going to landfill (Piippo et al., 2014).

International tourists noted that despite the unique experience and peacefulness of Lapland, the lack of environmental services and sorting and recycling facilities in the area was disappointing (Piippo et al., 2014). The study seeks to develop a local sustainable waste management solution that would hugely contribute to the existing problems by utilizing the waste for revegetation purposes in the eroded lands due to the mentioned recreational activities (Piippo et al., 2014).

In 2017, a study by Tomperi et al. was published on sustainable waste management in northern rural areas by utilizing biowaste in two tourist centers in Finnish Lapland, namely in Kolari and Saariselkä. Due to the continuous increase in overnight tourist arrivals and the subsequent increase in the generated waste, in addition to the tightening waste regulation, the need to improve local processing of waste has arisen. Local waste processing should contribute significantly to reducing the amount of transported bio-waste to landfills and instead use it for producing energy. The study concluded that despite the fair potential of the annual bioenergy, producing it using only bio-waste by anaerobic digestion is not economically profitable around the year because of the unexpected and significant seasonal variations in the amounts of generated waste (Tomperi et al., 2017).

The same is assumed to be true for other tourist centers located in Finnish Lapland, where the amount of waste was found to depend on the intensity of tourist overnight visits, and the highest amount of waste being during the spring season. This calls for an optimization in waste collection, separation, and treatment for developing profitable waste-to-energy solutions in Lapland. The economic efficiency of bioenergy production could be improved using methods like co-digestion with sewage sludge or agricultural waste. Using digestate (the remaining material after anaerobic digestion) as a fertilizer for agricultural purposes or for landscaping in local tourist areas could also prove to be beneficial economically and environmentally. In addition, proper storage facilities for digestate and excess bio-waste need to be built in order to maintain the production of bioenergy around the year (Tomperi et al., 2017).

The article "Eco-Audits and Sustainable Tourism: A Union Case Study from Finland" by CSD Major Groups (n.d.) examines the effectiveness of eco-audits in promoting sustainable tourism practices. The participants in the pilot project included hotels, highway service centers, tourist farms, and health resorts. The study evaluates the impact of the audit on the hotel's environmental performance and management practices, as well as the experiences of the hotel staff and guests. Coordinators from each participant enterprise were chosen, and agreed on duties such as drafting environmental policies, planning environmental measures, informing and motivating the staff and tourists, and follow-up of measurement results. The results show that the eco-audit process helped the hotel to identify and implement a range of environmental improvements, from reducing water and energy consumption to sourcing sustainable products. The study concludes that eco-audits can be a valuable tool for promoting sustainable tourism practices, but that they need to be carefully designed and implemented to ensure that they are effective and that they involve all relevant stakeholders (CSD Major Groups, n.d).

The Ministry of Economic Affairs in Finland publishes a document in 2020 titled “Achieving More Together – Sustainable Growth and Renewal in Finnish Tourism”. This publication included a strategy for tourism 2019-2028, in addition to an Action plan 2019-2023. It is strongly emphasized that the development of sustainable tourism is highly dependent on the social, cultural, and economic aspects in addition to environmental ones. Such aspects must focus on low-carbon, resource-efficient global economy, which involves waste minimization in addition to water consumption and food production. The document defines a set of primary roles for the public sector (e.g., Metsähallitus, regional councils, municipalities, etc.), which involves investment in the infrastructure of tourism areas, national parks, among others, and those investments must be directed to transport, water systems, roads, energy efficiency, and waste management (Ministry of Economic Affairs and Employment, 2020).

The report states that sustainability can be turned into a competitive asset for Finnish tourism in many ways. For starters, the introduction of the Sustainable Travel Finland label locally would be the responsibility of DMOs (Visit Finland), in addition to regional organizations and enterprises. Moreover, it would be beneficial to implement sustainable training entities for tourism enterprises. Such entities must focus on the following topics: raising customers’ environmental awareness, climate change and carbon footprint reduction, energy and water efficiency, waste management, waste minimization and promoting recycling, and safety and security management and regulations of tourism services. On top of that, other topics such as responsible productization of Finnish cultural heritage were seen to be of utmost importance (Ministry of Economic Affairs and Employment, 2020).

The thesis, "Future Nature and Eco-Tourism" by Yonna Keto (2018) explores the potential for eco-tourism certification in the Ostrobothnia region of Finland. The thesis discusses the definition and characteristics of eco-tourism, including its focus on sustainability and conservation. She emphasizes that that the attitude towards traveling must change, where instead of growing demands and individual focus, tourism should possess more humane and close-hearted values. She indicated that tourists are aware of the impact of their travel decisions, and they would like to switch to responsible consumption (Keto, 2018)

Keto underlines the most important indicators of sustainability in tourism services, namely water and energy efficiency, using local products, local employment, nurturing local heritage, and waste management. Importance of waste management. Lifecycle as a guiding principle is essential, and it strongly brings together raw materials, and waste policies together in terms of resource efficiency as a strategic theme in the EU. Environmental management as a tool is of utmost importance to identify the environmental impacts of tourism-related operations and services, and act accordingly to reduce emissions, resource, and energy consumption, as well as waste (Keto, 2018).

Ella Väänänen wrote a master's thesis titled "Sustainable Tourism Destination Management-Multiple Case Studies from Lapland" in 2020, where the purpose of her study was to understand the meaning of sustainable tourism in Lapland. She indicates that despite claims of sustainability by multiple destinations, the research proves otherwise by identifying significant shortcomings. Her study attempts to get some insights of sustainable destination management practices. Her findings show that despite some destinations like Ruka-Kuusamo and Ylläs being sustainable by nature, there are no clear guidelines yet as to how to implement and monitor sustainability (Väänänen, 2020).

In her thesis, Väänänen highlights the impact of tourism on ecology. The tourist sector is continuously expanding, and more land is used for various development projects (e.g., accommodation, transportation infrastructure, ski areas, waste management facilities, etc.), which puts biodiversity at risk. She highlights a set of indicators set by the European Commission for sustainable tourism, and one of the core indicators was solid waste management. She states that waste management can be tackled by following three indicators: tourist's annual waste production compared to locals; percentages of tourism enterprises who separate waste; and total recycled waste comparing tourists and locals (Väänänen, 2020).

In developing sustainable tourism, a set of challenges emerge, and waste management and infrastructure was one of the biggest, according to the results from the conducted interviews in the study. Issues associated with that include the lack of recycling and biowaste collection, and the long transport distances (Väänänen, 2020). These facts were further proven through the responses from the interviews conducted for this current study.

Eveliina Harju (2021) wrote her thesis focusing on the importance of communicating waste and responsibilities clearly and comprehensively by the tourism regional organizations in Northern Finland on their platforms. Some organizations only direct their communication to tourists and other stakeholders, and provide clear practical tips and instructions, while other organizations communicate their own region's actions related to generally promoting responsibility and increasing awareness. Despite the fact that both communication methods are essential tools for communicating responsibility, the data indicates that the regional organizations implement only one of them. Nevertheless, the results indicated that most of the organizations' platforms are found to be informative when it comes to recycling and the responsible actors for waste management (Harju, 2021).

Walteri Tikkanen (2021) focused on the waste sorting from the tourist's perspective in Ylläs in order to create waste sorting development proposals using social marketing, which is a tool that aims to shape people's attitudes by eliminating individual bad behaviors and attitudes, thus improving the society's well-being. The study indicated that despite the tourists having a positive attitude towards waste sorting at home, they do not actively do so while on holiday. They claimed that waste sorting in Ylläs was difficult and the possibilities of doing so were quite scarce. The results of the interviews were unanimous about the fact that Ylläs has a waste management problem that is not caused by tourists' attitudes towards waste sorting. It is essential for the waste management system to go through major developments for the locals and tourists to have easier access to waste sorting in the area. The addition of sufficient waste containers for different kinds of waste is a straightforward but yet important step in that sense (Tikkanen, 2021).

Annika Pitkänen (2021) carried out her bachelor's thesis with the question of how the availability of information regarding trash-free national parks affect the environmental awareness of visitors, specifically hikers in Pyhä-Luosto National Park. The work investigates how clearly the instructions are communicated to the hikers and what they believe are important factors that should be communicated. The results indicate that accessing the information is quite difficult due to it being found behind a number of links. However, once the information is finally accessed, the target groups find them informative and sufficient. It is observed that the behavior of other hikers, in addition to the natural environment itself can effectively play a role in preventing littering.

Moreover, it has been indicated that the availability of waste containers all over the national park can be an encouraging factor in littering reduction (Pitkänen, 2021).

Pitkänen's work goes in line with Harju's thesis, as they both emphasize on the importance of communicating responsibilities and information on waste management effectively and easily.

Emilia Vierjoki (2021) studied the challenges of waste management in tourism destinations at Saaristomeri. Waste management in the region was said to be challenging for entrepreneurs, mostly due to the attitude of the visitors towards waste sorting while on holiday even though sorting possibilities are available. The source of trouble when it comes to waste was found to be the boaters. Entrepreneurs are willing to further develop the site's waste management, given that they get financial support from the public sector. They also believe that more efforts should be made towards raising the awareness of the visitors when it comes to the complex and challenging nature of waste management in the area (Vierjoki, 2021).

2.3 Solid Waste Management and Practices in Tourism- Outside Finland

An article was written by Chaabane et al. (2019) regarding solid waste management practices in the Tunisian hotel industry. The study established key indicators to evaluate the performance of such practices, where 33 interviews and field visits were conducted, covering tourist municipalities, private companies, and environment and tourism authorities. The study highlights that even though some hotels have implemented effective waste management practices such as sorting waste at the source and composting organic waste, there is still a lot of room for improvement when it comes to reducing waste generation and increasing recycling rates. Reliance on landfill also must be reduced. The authors emphasize the necessity of having standardized key indicators to assess the environmental impact of hotels and promote sustainable tourism practices in the industry and assist in decision-making (Chaabane et al., 2019).

The article titled "The Contribution of Tourism to Municipal Solid Waste Generation: A Mixed Demand-Supply Approach on the Island of Tenerife" by Diaz-Farina et al. (2020) investigates the environmental impact of tourism on the generation of municipal solid waste on the island of Tenerife. In this study, a mixed demand-supply approach was used to analyze data on waste generation and tourism activity to estimate the contribution of tourism to municipal solid waste generation. The findings indicate that tourism is a major contributor waste generation on the island, particularly with hotel and restaurant activities being the largest contributors. The study focuses mainly on tourism activities rather tourists in an attempt to emphasize the importance of extended producer responsibility and suggest a Pay-As-You-Throw tariff for mixed waste. Such tariff was seen as an effective strategy in waste prevention and promoting encouraging recycling, and at the same time prevent imbalances in municipal budgets due to cross-subsidies among waste producers (Diaz-Farina et al., 2020).

The Economic Commission for Europe has published in 2021 a thematic document focusing on applying circular economy principles to sustainable tourism. The document highlights the benefits of adopting a circular economy approach in the tourism industry. This includes reduction of resource consumption, lower waste generation, and enhanced resilience to environmental and economic shocks. It provides various strategies and actions that can be implemented to promote circularity, such as improving resource efficiency in accommodation facilities, reducing food waste, and promoting sustainable tourism practices. The document also includes examples of successful circular tourism initiatives from around the world. When it comes to waste, the most viable and sustainable approach to waste management was found to be waste prevention, although effective waste disposal management such as reuse, recycling, recovery, and disposal can also be profitable. One example of this is Europe's Horizon 2020 project called "Urban Waste," which aims to help policymakers develop strategies for reducing municipal waste production and supporting the reuse, recycling, collection, and disposal of waste in tourist cities (Economic Commission for Europe, 2021).

The article "Tourism Waste Management in the European Union: Lessons Learned from Four Popular EU Tourist Destinations" by Ezeah et al. (2015) examines the waste management practices in four popular EU tourist destinations: Mallorca, Tenerife, Kefalonia, and Kalithea-Rhodes. The authors highlight the challenges faced by these destinations in managing the waste generated by tourism activities and provide insights into best practices for effective waste management. Such challenges these locations have in common include reduced number of facilities for waste treatment or disposal, variations in waste arising based on tourism season, high population density, limited land mass to locate landfills and other waste treatment infrastructure, and difficulties in achieving economies of scale. The study emphasizes the importance of waste reduction, reuse, and recycling in the context of sustainable tourism. The findings indicate that even though there are signs of compliance with global best practice in the locations included in the study, it is necessary to adopt locally based measures to enhance sustainability, such as better waste collection infrastructure and increased awareness among tourists and local communities about responsible waste management (Ezeah et al., 2015).

The article "Good Practices and Actions for Sustainable Municipal Solid Waste Management in the Tourist Sector" by Giurea et al. (2018) presents a study on the current practices and challenges of municipal solid waste management (MSWM) in the tourism sector, specifically agro-tourism, taking Romania and Italy as case studies for promoting good practices for sustainable waste management. The authors emphasize the need to identify and apply good practices for promoting waste production actions before addressing issues related to waste sorting and disposal. For instance, small actions such as offering bulk products in food services, or products with less packaging, was one example of good and simple practices. Another example was offering on-fountain drinks or returnable drinking bottles to avoid plastic bottles, in addition to replacing packaged foods with home-made alternatives. Moreover, room services could limit the distribution of personal hygiene packet samples and plastic glasses (Giurea et al., 2018). Based on personal observation, no hotels in Finland put plastic drinking glasses in the rooms, but it is still something to consider for other offerings. The article also proposed the use of home composting for biowaste and implementing separate collection of packaging waste. In addition to that, educating the tourists about good practices pertaining to waste disposal is seen as most crucial, which also goes along

with continuous monitoring of the overall situation to identify positive and negative impacts (Guirea et al., 2018).

The compendium of waste management practices in pilot cities and best practices in touristic cities provides an overview of the waste management practices implemented in 11 European cities, including both pilot cities and touristic cities (Gruber et al., 2017). The report describes various approaches to waste management in touristic areas, such as source separation, recycling, composting, and waste-to-energy technologies. It also highlights best practices in waste management in touristic areas, including the use of innovative waste management technologies, community-based initiatives, and the establishment of partnerships between the tourism industry and local waste management authorities. The practices are divided between waste prevention and management. Examples of waste prevention actions include more reuse, less food waste, better separation options, integration of was solutions in urban space, cleaner construction and demolition waste, and producing biogas from food waste. These examples were from Copenhagen, Denmark. In Nice, France, a lot of the waste prevention actions included different ways of composting, such as individual and collective and on-site composting for restaurants. In Nicosia, Cyprus, there was a strong emphasis on education for waste prevention. For example, an educational program regarding policies of waste management and actions framework has been in place since 2014. In addition, the municipality enforces citizen awareness by organizing cleaning campaigns and publishes different kinds of educational documents (e.g., press releases, leaflets, etc.). Another great example of good waste prevention actions comes from Ponta Delgada, Portugal, where there is an eco-fee on plastic bags in addition to organizing the European Waste Prevention Week since 2016. In Santander, Spain, an app for citizens and tourists as a communication channel from citizens to Santander City council is available since 2014 to check information about waste and bulk waste pickup, recycling services, schedules, and other services, in addition to organizing awareness campaigns and workshops (Gruber et al., 2017).

Overall, the report serves as an excellent source of information and inspiration for all tourism destinations to learn and benefit from.

The chapter "Tourism's wasteful ways" (Holden & Fennell, 2013, p. 460-488) in the Routledge Handbook of Tourism and the Environment discusses sustainable waste management practices in the tourism industry. The authors suggest that the most effective way to reduce waste in the industry is through source reduction, although it is not a substitute for recycling. It is essential to perform solid waste auditing in addition to life cycle analysis to identify the sources of problems along with source reduction, reuse, and recycling, and this would contribute to constructing a manual that assists tourism operators in developing waste management plans covering different aspects like operational structures, budgeting, staff training, and monitoring. The chapter also discusses the importance of recycling and composting in waste management. Recycling involves collecting and processing waste materials such as paper, plastic, and metal, which can be reused in manufacturing new products. Composting, on the other hand, involves the controlled decomposition of organic waste materials such as food waste and yard waste, which can be used as fertilizer for plants and gardens (Holden & Fennell, 2013, p 460-488). The chapter, in addition to what was mentioned, also highlighted tourist behavior and how it contributes to waste generation, where it was stated that their behavior may be influenced by their tendency to do something on a regular basis. They may be well-intentioned but ill-informed when comes to waste disposal infrastructures as they may assume that they are the same as their homes. Some tourists, on the other hand, may just simply behave irresponsibly and over-consume. This specifically has been addressed during the conducted interviews for this thesis to determine how true it could be and to what extent the different participants agree to it (Holden & Fennell, 2013, p. 460-488).

The Interreg Europe Good Practices Guide on Waste Management Intelligent Systems and Policies (2022) is a comprehensive report that provides insights and recommendations for promoting innovation to improve waste management at the local level. The report highlights best practices in waste management from different cities and regions in Europe and identifies key challenges, gaps, and opportunities for improving waste management systems. The report introduced three main topics; collection and use of information to optimize waste management; innovative models for waste collection, prevention, reuse, and recycling; innovative tariffication.

A total of twenty-six good practices scattered all over Europe were identified, such as utilizing containers sensor for optimized waste collection, information-based waste collection, mobile app on bulky waste for reuse and recycling, route optimization for waste collection, sharing data on waste and resources with the public, and treatment of biodegradable waste. These practices were divided between the three main topics mentioned earlier, where the goal was to identify and exchange relevant good practices existing within their territories or from external public authorities. These practices were then discussed in detail throughout the report (Interreg Europe, 2022).

To name a few examples from the report, there is the use of container sensors for optimized waste collection in Chania, Crete. This innovative solution was able to overcome two major challenges, the first of which was the routes of collection truck in remote areas, which reduced the necessary travel distance and thus reducing fuel consumption and monitoring the filling level of waste containers. The second aspect was altering routes in touristic areas with high-seasonal population fluctuation in order to adapt the collection for paper and recyclable packaging (Interreg Europe, 2022). Another good practice introduced in the report was information-based waste collection in Amsterdam, Netherlands, which was said to be still at an experimenting phase. The practice quickly identifies and responds to littering around waste containers, in addition to optimizing the logistics for operational services associated with waste collection. One more good practice, also in Amsterdam, was sharing data on waste and resources with the public, which promotes transparent and accessible economy amongst locals. Moreover, it was said to foster economic development by improving private sector business models and open the opportunity for more new functionalities in the area (Interreg Europe, 2022).

It is worth noting that for each practice, the needed resources, evidence of success, and the potential for learning were addressed sufficiently. This report proves to be yet another excellent source of inspiration and motivation for touristic destinations across Europe.

“Management of Municipal Solid Waste in Religious Tourism Park Based on Reduce, Reuse and Recovery: An Indonesian Attraction Case Study” (Kasam, et al., 2019) examines the management of municipal solid waste in a religious tourism park in Indonesia. The authors focus on the principles of reduce, reuse, and recovery to develop a sustainable waste management system. The study states that although there are other options to manage solid waste, such as waste reduction, recycling, and energy recovery, most of it still goes to landfill. The authors were able to describe the composition of waste generation according to usability level, and they found that almost 50% of the waste is recyclable and about 30% is compostable. Due to the poor waste management system and inadequate processing, this was not realized (Kasam et al., 2019).

The study emphasizes the need to study tourism behavior and its role in waste generation, in addition to implementing reduce, reuse, recycle, with the priority being given to reduction. Zero Waste Index was seen to be an interesting thing to study for the benefit of the environment (Kasam et al., 2019).

Martins et al. (2021) studied the impact of tourism on waste generation and management cost in Madeira for the period 1996-2018, where the results have shown that tourist activities account to 41.9-46.6% of solid waste generation per resident. This implies that the tourism sector heavily contributes to waste generation, where international tourist arrivals were found to be part of the issue. In addition, there may be a negative impact on the image of the destination due improper solid waste management. The study concluded that a set of variables, such as per capita income, employment rate, and construction activity, positively affect waste generation. The authors believe that the study presents practical and political implications that could help waste collection planning and infrastructure in tourist areas, in addition to adopting some new economic policies such as limiting the number of given permits to operate in the sector and restrictions on land use. Moreover, the authors propose an additional fee (EUR 0.88-0.98) to be paid by the tourist per night to compensate for the additional costs caused by their generating of waste. This can be further supported by designing new sustainable tourism policies and campaigns to promote environmentally conscious behavior. Environmental taxes imposed on incoming tourists by the municipalities may prove to be beneficial for the development of the cities, but this is yet to be further studied (Martins et al., 2021).

Obersteiner et al. (2021) indicated in their study on the potential of carbon footprint reduction in tourism waste management strategies that the contribution of tourism to waste generation is continuously increasing along with an increase in environmental and socio-economic impacts. For that, the main objectives for municipal authorities in tourist waste management must be waste prevention and recycling. Waste minimization in tourist activities was seen to be essential in future waste management programs, working to reduce collection, transport, and disposal costs, and as a result, lowering the cost of tourist activities (Obersteiner et al., 2021).

The study examined the potential reduction of GHG emissions for three waste prevention and treatment options: food waste prevention; single-use plastic reduction; increased collection and recycling of waste. Depending on existing waste management systems, the results showed a potential reduction of GHG emissions between 4 and 189 kg CO₂-eq. per 1000 tourists. Due to the production of reusable alternatives, associated emissions were found to be high, while the emissions from food waste reduction and waste separation were low. Especially for biowaste, an influencing factor was found to be the existing waste management system, in addition to the practicability and scalability of the adopted measures under regional circumstances (Obersteiner et al., 2021).

The authors call for immediate intervention from all stakeholders to reduce financial and technical pressures and implement sustainable solutions, as municipalities may lack the financial means to enable sustainable solid waste management in tourist areas (Obersteiner et al., 2021). When all actors come together, it is crucial to define focus areas of high and low impacts on the destination in order to provide sufficient information to policy makers. Because environmental assessments of higher priority waste management options (e.g., waste prevention), such methodology is seen to be important in determining the impacts. This assessment is dependent on addressing the following key issues, data availability; residual waste treatment, share of recyclables, and separate collection and treatment of biowaste. The share of recyclables is seen as an influencer for environmental impacts associated with waste-related tourist behavior, while the separate collection and treatment of biowaste results in a significant reduction in GHG emissions (Obersteiner et al., 2021).

“Solid waste management practice in a tourism destination – The status and challenges: A case study in Hoi An City, Vietnam” by Pham et al. (2019) highlights waste management practices and challenges in the tourism destination of Hoi An City, Vietnam. The results indicate that most of the waste comes from restaurants, hotels, and households, respectively, and waste management practices were poorly implemented. Gaps associated to that were found to be related to waste collection activities, resulting in major financial losses. This was due to the stakeholders not complying with collection regulations, in addition to mixing the waste after separation at the source by waste collectors. In order to drive the tourism destination towards sustainability, these challenges must be seriously addressed (Pham et al., 2019).

The main findings from the literature review indicate the need for efficient low-energy waste management systems, as well as utilizing biowaste in waste-to-energy solutions, which in fact would improve the efficiency of the waste management systems in addition to improving the image of the tourism destination (Tyrväinen et al., 2014; Tomperi et al., 2014). This was further emphasized by Piippo et al. (2014), where the need for a local waste management solution that helps in utilizing biowaste for revegetation purposes. Tomperi et al. (2017), however, highlighted that it is essential to optimize waste collection, separation, and treatment for waste-to-energy solutions in Lapland is essential to ensure that they are efficient and profitable.

Many of the reviewed literature highlighted the need for waste prevention in the first place, followed by proper waste management when it comes to reuse, recycle, and disposal. This can be further optimized by adopting local waste management solutions along with raising awareness among tourist and local communities (Economic Commission of Europe, 2021; Ezeah et al., 2015; Kasam et al., 2019).

Gruber et al. (2017) presented in their report different approaches to waste management in touristic areas, mainly associated with source separation, recycling, composting, and waste-to-energy solutions. They also highlighted best practices that include the use of innovative technologies, community-based initiatives, and the establishment of partnerships between the tourism industry and waste management authorities (Gruber et al., 2017). This report is complemented with the Interreg Europe Good Practices Guide on Waste Management Intelligent Systems and Policies (2022), which provided good insights for promoting innovation to improving waste management systems by highlighting best practices from different European regions and cities. Challenges, gaps, and opportunities for improvement were also discussed (Interreg Europe, 2022).

A key source in this study was none other than the Routledge handbook of Tourism and the Environment, specifically the chapter "Tourism's wasteful ways", which provided an idea on tourist behavior and how it contributes to waste generation (Holden & Fennell, 2013, p. 460-488). Kasam et al. (2019) also cited the need to study tourism behavior and its effect on waste generation.

3 PRACTICE THEORY AS A THEORETICAL APPROACH

3.1 Practice Theory

Practice theory has nowadays been a crucial part in social sciences research in addition to tourism studies, which provide solid examples of social practices where aspects of human life are seen as practices of groups rather than individual activities. This has the potential to overcome the actor-structure divide, and the context of tourism consumption in addition to the roles of individual actors related to constraining their travel behavior are still within sight (Bargeman & Richards, 2020).

Practices are described as “routinized doings and sayings performed by knowledgeable and capable human actors, involving material objects and infrastructures” (Bargeman & Richards, 2020, p. 1). Applying a theoretically grounded practice approach would help in understanding the different tourism practices and what makes people choose or go against a specific tourism practice by creating a link between the context of acting and the actors or individuals making choices and having needs and motives. A good example is how developing skills could change the context and meaning of particular activities (Bargeman & Richards, 2020). It is worth mentioning that according to Nicolini (2012), practice theory is about making meaning, forming identity, and producing order, and it is not just simply describing human activity. In addition, practice theory replaces cognitive perspectives. Such perspectives attempt to explain organizational phenomena as something originating from an individual’s mind. It is also worth noting that there is not one, but different ways of theorizing practice. In other words, there is no unified practice approach. Although these approaches share some similarities, they have their own histories, vocabulary, and assumptions (Nicolini, 2012).

According to Nicolini (2012), adopting a practice approach can completely transform the way knowledge, meaning, and discourse, are viewed. In that sense, knowledge is said to be “always a way of knowing shared with others, a set of practical methods, acquired through learning, inscribed in objects, embodied, and only partially articulated in discourse” (Nicolini, 2012, p. 5), and being part of a practice therefore is about learning how to make meaning of things in addition to learning how to act and speak. A practice also involves learning how to feel and what to expect (Nicolini, 2012)

There are two types of practices: dispersed and integrative. Dispersed practices relate to common social interactions, such as greeting or texting, and are described as “the social lubricant of daily life which do not have a goal-structure” (James et al., 2018; Alpenberg & Scarbrough, 2021, p 415). Integrative practices are known as complex entities that brings together multiple actions, projects, ends, and emotions, and are mostly related to particular social groups. Often existing as “bundles”, these practices are analyzed to develop an understanding on how these practices relate to one another and are distinguished by having a higher level of complexity and the existence of a goal structure (James et al., 2018; Alpenberg & Scarbrough, 2021). The development of practice theory was said to be mainly by focusing on integrative practices but differentiating between them and dispersed practices was seen to be promising when it comes to defining what organizational practices are and their functionality (Alpenberg & Scarbrough, 2021).

It is argued that social practices are subject to relentless change, driven by the power of networks to program and disseminate discourses that frame human action. The context of tourism participation is an indication of the reasons people value certain forms of participation or activity above others, which is influenced by the choices of others in a rapidly changing network of relationships and a community of practitioners, not just by individual choice. By concentrating on practices, it is possible to shape up a more dynamic consideration of how participation is shaped by context, and how participation in turn changes the context (Bargeman & Richards, 2020).

3.2 Applying Practice Theory on Waste Management in Tourism

In this study, practice theory can provide value in three ways. The first way is that it can help to explain why individuals perform specific tourism activities, in this case practices related to waste generation and management, by providing in-depth analyses of both the actor- and context-related factors influencing those practices (Bargeman & Richards, 2020). Practice theory can illuminate how group dynamics and communities of practitioners in tourism practices work, which is the second way this provides value to the study. In addition to that, it enables us to understand decision-making by individuals, be it tourists or other participants in tourism (Bargeman & Richards, 2020). In the context of this study, practice theory can help us understand what influences the decisions and actions of stakeholders in tourism when waste is concerned. Finally, practice theory could improve the understanding of the background related to adopting, maintaining, or letting go of certain practice in tourism. This is due to its strong emphasis on routine behavior and dynamic character because we aim to understand the reason behind the repetition of certain behaviors and in some cases why they are abandoned in favor of others (Bargeman & Richards, 2020). We would like to understand for instance why tourists adopt a “wasteful” behavior when they are in places other than their homes, or why waste management companies decide that waste in some cases is not worth collecting or disposing of adequately. More on that and other questions will be discussed in the analysis process section of this thesis.

4 DATA COLLECTION AND ANALYSIS METHODS

4.1 Constructivist Approach

In this section, the research paradigm for the study is defined. Defining a paradigm helps form the philosophical basis of the study, and to then apply the appropriate methodology and subsequently improve the quality of the analysis.

A constructivist paradigm is the way to go here. Gerald Cupchik said that “constructivism represents local and specific constructed realities wherein social phenomena are products of meaning-making activities of groups and individuals” (Cupchik, 2001, p. 2). Constructivism was also described as “a research paradigm that denies the existence of an objective reality, ‘asserting instead that realities are social constructions of the mind, and that there exist as many such constructions as there are individuals (although clearly many constructions will be shared)’” (Guba & Lincoln, 1989, p. 43).

This fits the purpose of the study, as data collection will mainly be through interviews from different stakeholders involved with tourism and can provide input for the research question to find out about waste management and practices in tourism from different points of expertise, which could provide a better picture of the issue from different perspectives. In short, the collected input will assist in constructing the knowledge on the topic. When applying a constructivist paradigm, knowledge does not exist objectively, and is rather created through the interviews. By acquiring this knowledge, it is possible to understand how different stakeholders view issues associated with waste management and tourism together. Accordingly, the data will be analyzed using a qualitative approach.

4.2 Data

There were four interviews with stakeholders representing different stakeholder groups in the tourism industry, namely DMO, academia, waste management operators, and tourism resorts. The number of interviews was decided to be four to have a good variety in data for categorizing during the analysis. There were no difficulties in contacting the participants, and they were all happy to take part in the interviews. Disclosing participants' names and roles was agreed upon to be anonymous ahead of the interviews. The interviews were recorded and transcribed upon consent from the participants, who were presented with a consent form. It is worth noting that after two interviews, some responses started to sound similar, which implies a collective agreement on certain issues. This is addressed in the analysis section of this thesis.

Secondary data, such as statistics and previous studies were collected for introducing the topic and its background. The interviews are semi-structured and divided into three themes after codification: waste generation, role of public organizations in waste management, and improvements of the current waste generation and management. Semi-structured interviews can be a combination of closed- and open-ended questions, are normally conducted with one respondent at a time. They are also often more relaxed and engaging than surveys, and are ideally one hour long (Adams, 2015).

Some interviews were conducted in person, while some others were online. They were organized between October 2022 and March 2023, with the duration varying from twenty minutes to an hour depending on how much the participant wanted to say.

The geographical locations of the interviewees were narrowed down within Lapland in order to scale down the scope of the study to a reasonable size where it would be possible to get an overall view of issues related to waste management and tourism in Lapland. Otherwise, the scope would have been too big to achieve, and it would have required much more time and resources. In addition, due to possible differences in waste management systems in different regions, the data collection and analysis may reach a point where it gets irrelevant, unclear, and out of scope.

4.3 Analysis Process

Qualitative research allows for studying a research problem in its natural setting with a deeper understanding, and information in this case may be gathered from multiple sources to understand the meaning of the problem from the eyes of the involved audience, the interviewees in the case of this study (Akinyode, 2018).

The key steps for most qualitative analysis approaches are data collection, data reduction, data display, and conclusion. As mentioned earlier, the main source of data for this study is by conducting interviews, which are to be documented appropriately. The data then goes through a reduction stage, leaving out what may be irrelevant to the study and making sure that it maintains its meaningfulness. To prepare the data for analysis, it needs to be categorized and coded in a sensible manner to draw conclusions and present the findings appropriately, not just for the researcher, but also the reader (Graue, 2015).

The first step in the analysis is transcribing the interviews. Having a transcribed version of an interview is essential for detailed studying of the content, linking it with analytic notes and coding it (Bailey J., 2008). Nevertheless, it may be good to return to the recordings to capture certain behaviors or reactions during the interview (e.g., pauses, laughter, facial expressions). This then would be somehow added to the transcript. It is important to state that the data is somewhat reduced and modified during the process of transcribing. This is defined by the level of detail necessary for the study, and the balance between readability and accuracy of the transcript needs to be maintained (Bailey, 2008). At this stage, the interviewees were assigned letters to maintain their anonymity. Interviewee A is a DMO representative, and B is an academic. Interviewee C represents a public waste management company, while interviewee D works for a tourism resort.

The next step is data coding, which helps in categorizing the data for easy organizing and comparison. The coding method will be either 'Open' or 'Axial'. The difference between the two is that 'Open' coding identifies the discrete concepts, while 'Axial' coding method is used to designate the way links are made in new ways between the groups and sub-groups (Akinyode, 2018). Prior to coding, the interview responses go through a refining stage called "anecdotes",

which then helps in generating feelings and developing themes. This is then followed by a step known as “vignettes”, where an in-depth description of the collected information in the form of a narrative story for establishing credibility and a higher level of interpretation (Akinyode, 2018). The codes are then created from the text and classified based on their similarity, go through a refining stage to avoid repetition, and then finally narrowed down to keywords and basic themes (Akinyode, 2018). Once ready, the basic themes are used to generate “organizing themes”, where the relevant basic themes are brought together to create an organizing theme, creating multiple groups of themes according to the fundamental story the basic themes tell (Akinyode, 2018). Based on this approach, codification and creating themes and categories were done, and are introduced with detail in the data analysis chapter.

It must be noted that the analysis here can get challenging and time-consuming. Since there is a possibility that not all the data obtained from the interviews may be relevant, it is necessary to determine what to keep and what to leave. Whether the data collected from such interviews has an acceptable level of validity depends strongly on the interviewees and their level of truthfulness and honesty (Phillimore & Goodson, 2004, p. 223).

4.4 Ethical Issues and Concerns

Ethical issues arise concerning the research and its participants, and they need to be carefully addressed in this study. First, responsible conduct of research must be followed at all stages. The University of Lapland as an institution is committed to the guidelines of responsible conduct of research set by the Finnish National Board on Research Integrity (TENK), and by default all its students and faculty members must commit to them. When planning and conducting research, it is essential to do so with accuracy and integrity. The exact same goes for recording the empirical data and presenting and evaluating the results. The results must be presented clearly and responsibly, and any used publications must be acknowledged and cited appropriately (TENK, 2013)

Second, conducting the research must be detailed and done according to the guidelines of good scientific practice, and a logical approach to data collection and analysis must be followed.

The participants in the interviews are voluntarily taking part and are free to step out if they feel so. It is essential to stress out the point of voluntary participation, because it is about respecting the privacy and choices of participants. It is essential to provide the participants with information about the study, such as the purpose of this study and how their input contributes to it and how the data is used. The reason for carefully selecting the participants should be clearly justified, and a researcher should always be ready to address any questions or concerns that may arise (TENK, 2013).

In that sense, the participants in this thesis were provided with a comprehensive overview of the topic and its purpose so they are able to familiarize and prepare for the interviews in advance. In addition, they were presented with a consent form briefly describing the study, in addition to informing them about what they are giving their consent for. The form indicated that the interview material is treated with utmost confidentiality and is solely used for research purposes and certifies that the research follows the principles for responsible conduct of research dictated by the Finnish Advisory Board on Research. This includes proper use of references and giving credit to respective authors.

Data has been handled with complete anonymity to avoid any negative consequences to the participants, and despite signing the consent form, they are free to withdraw from participating if they wish to.

Another thing to address is the use of AI tools like ChatGPT nowadays. Although the tool has proven to be useful when it comes to generating ideas and structures for research, they are not to be used in a manner other than that. From personal experimentation with ChatGPT, it can be inaccurate when it comes to generating summaries for journal articles and reports. That being said, the researcher must not rely on it to do the work for them. It may seem attractive to use such tools, thinking they might save time and effort, but this may put the researcher into ethical questioning about the originality of the work. Therefore, the use of AI tools must only be for assisting in general matters related to the research, such as ideas, structures, or lists of resources. The contents of the work must be filled by none other than the researcher, as this is the point of conducting research.

5 DATA ANALYSIS

5.1 Content Blocks and Categories for the Interview Guide

Codification and analysis were done using LiGRE, which is a web-based tool for qualitative data analysis. First, thematic blocks based on the interview guide were constructed as a starting point to develop categories for the first round of codification. As a result, a total of six content blocks were created, each block accompanied with its respective subjects addressed in the interviews. With the help of the content blocks, a total of eighteen categories were developed, and at this point the data is ready for the first round of codification (Rädiker & Kuckartz, 2020). Figure 2 illustrates these blocks in a logical sequence, starting with the background of the study and then followed by the main themes.

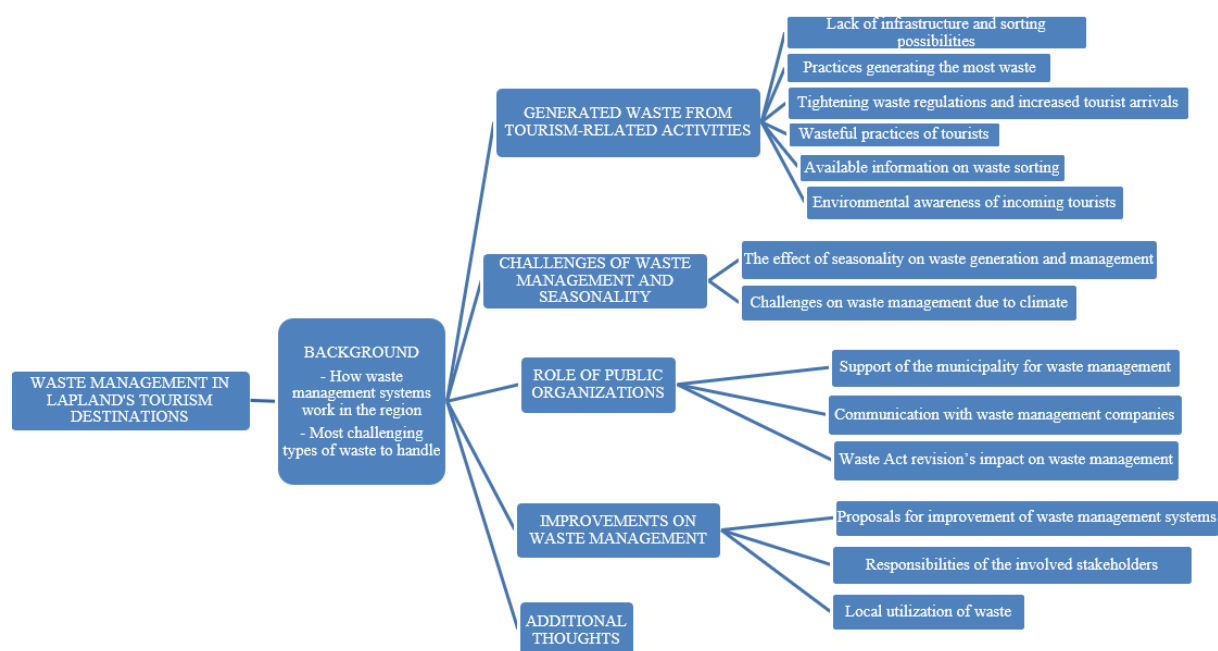


Figure 2. Content blocks for interview guide

5.2 Codification

Table 4 below lists the categories with their respective themes. The developed categories were empirically driven, where they were assigned as keywords based on the interview guide. Two categories each were developed for the “background” and “The challenges of waste management and seasonality” themes, while “Generated waste from tourism-related companies and activities” had seven categories, the most among all themes. “The role of public organizations in waste management” and “Improvements of the current waste management situation” had three categories each, and “Final thoughts” had only one. It is worth noting that these categories may be narrowed down after the first codification, due to the possibility of several interview fragments going under multiple categories. Therefore, the second round of codification may combine some categories together.

Table 4. Categories developed from the interview guide

Themes	Categories
Background	Waste management systems Types of waste
Generated waste from tourism-related companies and activities	Quality of services and activities Activities generating waste Challenges on waste management Waste regulations Wasteful practices Waste sorting instructions Environmental awareness
The challenges of waste management and seasonality	Seasonality Challenges of climate
The role of public organizations in waste management	Supporting waste management Waste management communication Waste Act
Improvements of the current waste management situation	Improvement Responsibilities Local waste processing
Additional thoughts	Free thoughts

After the first round of codification, many fragments from the interviews were found to belong to multiple categories. Therefore, some categories were combined with others, and some were removed, bringing down the total number of categories to 11. Table 5 below list the final themes and their respective categories.

Table 5. Final themes and categories

Themes	Categories
Waste generation	Waste management systems Activities generating waste Waste management challenges Waste regulations Wasteful practices Waste sorting instructions
The role of public organizations in waste management	Supporting waste management Waste management communication
Improvements of the current waste management situation	Improvement Responsibilities Local waste processing

The codification resulted in a total of 121 fragments. The number of fragments from each interview significantly vary, as it depends on how much a participant had to say in each category. It is worth noting that the length of answers was quite variant amongst the participants. Some were short, and some were long. One factor affecting that may be the language barrier, as English was not the first language for any of the participants and the proficiency level varied.

Table 6 shows in more specification the categories, their corresponding number of fragments, and the share of the fragments in percentage. As observed, the category “Challenges of waste management” had the highest number of fragments (18), followed by “Responsibilities” (12) and “Activities generating waste” (10).

After this stage, all the fragments were carefully reviewed as to avoid repetition, irrelevance, or any other occurrences. Therefore, the total number of fragments considered was 100. Table 6 lists the fragments for each corresponding category and interview after filtering.

Table 6. Specification of categories and fragments share

Categories	Fragments	Percentage
Generated waste from tourism-related companies and activities	56	56%
Waste management systems	8	8%
Activities generating waste	10	10%
Challenges of waste management	18	18%
Waste regulations	3	3%
Wasteful practices	8	8%
Waste sorting instructions	9	9%
The role of public organizations in waste management	16	16%
Supporting waste management	9	9%
Waste management communication	7	7%
Improvements of the current waste situation	28	28%
Improvement	8	8%
Responsibilities	12	12%
Local waste processing	8	8%
Total	100	100%

After further inspection of the fragments, the total number was brought down to 100. Some fragments were omitted due to repetition or irrelevance.

The findings will be discussed in detail in the following sections, which will also include the application of practice theory on specified fragments that focus on practices and behaviour. The sections were organized in line with the research aims of this study, which were:

- a. Identifying waste management issue and practices in Finnish Lapland in relation to tourism
- b. Identifying who is responsible for which practices
- c. Identifying the challenges that may have resulted in existing waste-related practices
- d. Concluding which practices must be replaced, which practices could use some improvement, and which practices seem to function well

5.3 Emerging waste generation practices from the data

Waste management as a whole can be considered a practice consisting of various other practices. The success of it as a practice depends on those other practices. It is not that simple, as some practices may come as a result of other practices or behaviours. Therefore, it is essential to trace such practices to the source in order to develop an understanding on such practices and behaviours that may be drivers for decision-making.

This first theme, “generated waste from tourism-related activities”, was found to contain the highest share of categories and responses, the categories being six and the share 56%. The first category, which is “Waste management systems”, had a share of 8% out of the total responses, aimed to develop a comprehensive understanding of how the waste management system works in that specific region of Lapland. From the responses, it is concluded that the waste management system works in two ways; public or private.

Properties can join the municipal waste management system one of two ways, either by joining the property specific waste transport or a regional waste collection. This regional waste collection is usually in the same place as eco points. So, you can go and put your waste to that collection point or use the waste container near your property- Interview C

If you have just a normal cabin here, different rules apply to you than for companies. So, you are on the public side. The municipality is responsible of taking care of the waste management of those accommodative operations that are small. If you are a bigger operator or if you are a company like us or any other company for that matter, I think you must take care of the waste management by yourself. Meaning that you must buy the services from a private actor- Interview D

In that sense, holiday homes go under the public sector, handled by Lapeco, and the owners pay an annual fee for using the services. The public waste management companies handle small-scale operations (e.g., holiday homes), while bigger operations like in resorts are handled by private companies.

There's waste management allocated for the holiday homes and people who live in the area. And then there's waste management of the public areas which is managed by the municipality. For private and holiday homes, homeowners need to pay annual fees for emptying their bins depending on the frequency that they can set with the company, Lapeco- Interview A

The following theme, “Activities generating waste”, had a total of ten responses and 10% share of the total responses. Starting from here, a set of practices started to emerge, most significantly consumption biowaste generation, and building projects. Stakeholders responsible for such practices included homeowners, hotels, restaurants, tourists, and resorts.

It is basically living in the holiday homes. When you're thinking about this area, about 60% of the tourism is domestic and 40% is international. With international tourists, they are predominantly staying in hotels and the hotels usually have environmental programs which on themselves tend to investigate more sustainable ways of waste management - Interview A

The thing is, we have about 25,000 bed places in the area, and you can imagine the amount of waste is very big during the high season of the winter - Interview D

The amount of food waste, especially from hotels and restaurants, was said to be quite high, due to people consuming more food than they actually need. As interviewee B, the academic, described it, “they will see it as a luxury that they can just have anything on their plate. And then most of it would go to waste”. This means that the practice of consuming more than necessary is one big cause for biowaste generation.

One thing that comes to mind that has been talked about quite a lot in Finland is the food waste in hotels, especially breakfast. People will take a lot, and they will see it as a luxury that they can just have anything on their plate. And then most of it would go to waste -Interview B

Interviewee D, who represents a resort, thinks that building projects are a major source of waste. However, they said that they work closely with a private waste manager in planning the waste management for each project carried out at the time. This sets a good example of an aware stakeholder that strives to be a step ahead when it comes to managing waste.

We are building a lot of things in the area, new leaps and service buildings and such. I think that is the main source of waste.

We plan the waste management for each project separately depending on what we are doing now. And we are working very closely with a company that is our main waste manager - Interview D

The responses on “Wasteful practices” were based on a quote shared with the respondents from the Routledge Handbook for Tourism and the Environment (2013). The quote was the following:

Tourists have a ‘use and throw’ mindset. They have no investment in the community. They pollute the environment. It is a lifestyle issue: the tourist would like to travel light. Therefore, the use of disposables – more plastics, more waste, no recycling. The local communities have to become either waste absorbers or waste managers - (Holden & Fennell, 2013, p. 461)

Based on the responses, it was possible to connect certain behaviours and attitudes with the practices mentioned earlier. Interviewee A agrees that people can be careless when it comes to waste disposal, and they would leave rubbish around rather than appropriately disposing of it.

They also believe that because there are currently insufficient means of checking whether the legislations are being followed, and so people can get away with their wasteful practices. In short, carelessness and the lack of monitoring resulted in wasteful practices.

People don't really care. They're just leaving the rubbish instead of going to the next pickup or sort station. They dump everything around the area which then might be ravaged by the animals and the birds spread the rubbish everywhere. And how to check the process that everything is handled according to the most recent legislation. Of course, who is there to check it? I think that the resources for doing this is very thin in that area. So, there might be some people not following the legislation and they are getting away with it because there are not enough people checking up on how this is being followed_- Interview A

Interviewee B thinks that traveling light and easy has been somewhat a lifestyle, but they also think that this is changing nowadays. To them, waste reduction is a key in waste management, but it is also a difficult thing to do in a capitalist society that basically relies on consumption. However, they still believe that the society would like to generate less waste.

I think one thing that always bugs me when I think about these issues is that because when we consume stuff we will always end up with waste. So, if we want to produce less waste, we should consume less. But then again, when we are in the capitalist society, nobody really wants to say that, like no state or municipality wants to say that, hey, don't consume because that is the way that brings money to there. So, I think this is one reason why it's very hard. Even though everybody wants to create less waste, it's still like a paradox that is quite hard to overcome - Interview B

Interviewee C, the representative of a waste management company, also agrees that tourist would like to travel light, but they also think that they may not have many options. They also think that the tourists may not have sufficient information on waste disposal and management in the area. This here indicates that lack of information can cause wasteful practices.

I think tourists would like to travel light, but they have only a few options to do so. There should be a lot of information on what else can be done besides recycling and the waste management, and what has already been done to ensure an eco-friendly stay. Tourists should use eco points more. Maybe they don't have enough information how to use them and where they can be found - Interview C

Interviewee D somewhat disagrees with the quote on tourist's wasteful practices. They believe that this sounds old and not as bad as it sounds. They believe that tourists nowadays are aware of what they should do, and they even come with expectations on waste management. That said, they still think there is a lot to improve in terms of educating the tourists and providing sufficient information. This compliments what interviewee C said about the need for more information, which is in itself another practice that apparently needs be more efficiently implemented.

To me that sounds a little bit old in the sense that I think the tourists that are coming here, I think you can say safely that they already know things, especially the people coming from abroad. They are even a little bit surprised because they are already expecting to have these possibilities for waste management. I would not say that. They are, for most people coming here, doing well with the waste. But I cannot agree totally with the quote. I think it's not as bad as that sounded, but for sure there are many things to improve. And what we should do and what the whole tourism area in Lapland should do is educate the tourists. You should be behaving this way and we should give out more information for the people coming - Interview D

According to interviewee A, the DMO representative, holiday homeowners are required to pay waste management fees even if the homes remain unused, which they feel is not ideal for them and it results in a negative attitude towards waste management operators. Since waste management as a whole requires a collective collaboration between stakeholders, including homeowners, this negative attitude may lead to gap in the system, making waste management in the area even more problematic.

Holiday homeowners are required to pay fees even if their bins are empty and nobody is there during the summertime. It causes some negative attitudes towards waste management, which is not of course very positive when you think about the whole picture - Interview A

5.4 Waste management challenges

“Challenges of waste management” had the highest share of responses (18%). All the respondents agree that biowaste is the most challenging type of waste to handle due to multiple reasons; lack of nearby waste management facilities; huge amounts of biowaste freezing during the winter season; extreme weather conditions.

I think biowaste is one of the most troublesome, especially in here because it makes it difficult when it freezes and it's quite heavy and it's hard to manage in many ways - Interview B

Biowaste has this problem that is obviously during the wintertime. Restaurants and the area generate a lot of biowaste. I hear this is the reason that it should not get frozen. It somehow interferes with the process. And there is this logistical problem that you must take it far away from the area and there are no handling stations nearby- Interview D

Interviewee D pointed out that plastic waste is also quite hard to handle for them, as they do not have the means to push it forward and they just pile it up. But they have decided that it needs to be collected anyway. This kind of initiative needs to be appreciated, and the municipality must ensure that possibilities for putting the plastic waste forward are available.

We are making big piles of the plastic at the resort. We are storing now, but we cannot put it forward. Of course, we are providing this for the customers. But we are struggling ourselves a bit with the fact that there is no place to put the waste forward. So, if I would look only at the numbers in Euros, obviously we shouldn't be doing this. But we have decided that we want to because it is important -
Interview D

When it comes to waste sorting instructions, the interviewees agree that the current available information may be insufficient, which was already implied in the previous responses. One reason for information not being enough or not reaching as many people as hoped is that such information must be made available in through multiple channels. There are currently mobile applications for DMOs containing waste management information in English, and there have been efforts to partner with airline to provide such information also on their flights.

I don't think it's enough because it needs to be a multi channelled approach that we have an app. Not everybody might download the app, even if we have the uniform symbols in the area. It might be that people are not near the receptacles when they have the waste in their hands, so they still throw it out. There's an official DMO app and it explains in English to the tourists how to manage waste and how to make sure that the Arctic nature stays clean. So, educating the tourist is one of the most important things there, otherwise it will happen in a way that the tourists will not care -
Interview A

No, because I don't think they're even sufficient to the people living here. The municipalities oversee handling the waste, so they make their own instructions and schemes, which type of waste goes into which kind of category, or sorting -
Interview B

I haven't seen much information for tourists concerning waste sorting or waste management. I hope there is enough information, but if not, it is definitely something to think about –
Interview C

One thing they also agree on is the need to unify the waste management symbols. Otherwise, it might be difficult for tourists and perhaps even locals to follow the signs. Not having such signs would also result in wasteful practices, as people are not sure where to go to dispose of their waste.

One of the works that was done was to add garbage receptacles around the area, but also to start using uniform signs in the area. So, the tourists wouldn't need to guess, and they wouldn't need to understand, for example, Finnish language - Interview A

One example is this that there were no symbols or labels for waste management in this tourism area. So, we would have the same kind of layout for the symbols. I think it makes it easier also for the customers to follow the symbols. You see the same symbols in the airport that you see in the village, and you start to look for those things. We are trying to provide this, but it is a little bit tricky because to me it seems like this is the kind of work that the waste operators on the public side or the private side should be doing - Interview D

5.4 Improving waste management

Improving waste management is a shared responsibility by all stakeholders. It is the responsibility of everyone to cooperate, communicate clearly, and be transparent. The respondents talked about their responsibilities, in addition to what they believe are the responsibilities for the other stakeholders. Interviewee D highlights the need for frequent collaboration and discussion between stakeholders, which can take place in a forum that enables sharing information all the time.

I think there needs to be constant conversation. There needs to be a forum where we can discuss these things, where information can be shared to imply what problems are, what things are well, what things are good and if there are changes in this legislation. There should be information available all the time. When companies or organizations in the tourism area and then this private side, public side, waste management organization can have this discussion, that would be a really nice thing to have. And this should be constant. This should be not under some single project, but something that is happening all the time - Interview D

Every effort is a step towards improving waste management and getting rid of wasteful practices. They all agree that the key to improving waste management is to work together.

I think that the most important thing is to work together. With the help of the DMO, the municipality, the development company, the waste management company, the private tourism operators, the maintenance companies, and the holiday homeowners and the hotels. If one link in the chain is faulty the whole chain will basically break - Interview A

There should be a more active approach from the side of waste management organizations, the ones that actually handle the waste, to give possibilities and information for the companies, how to deal with this waste, just give like simple guidelines. You do these things in this way and it's the easiest and most beneficial for the whole chain, for the waste to be reused or recycled. This is something that I am looking forward to in upcoming years - Interview D

It is important to always provide information to households and holiday homes on waste management services. In addition, it is also crucial for waste management operators to provide solutions for handling certain types of waste. As households and holiday homes were found to be a major source of waste, this would ensure less waste coming from there.

Also, to ensure that the people, including tourists, follow the best practices, waste management companies, with the help of the municipality and other actors, could provide educational material that is suitable for different age groups explaining why they need to produce less waste and sort their waste appropriately. Educating the people and raising awareness is a key in this issue, as repeatedly mentioned by the respondents previously.

And what we should do and what the whole tourism area in Lapland should do is educate the tourists. You should be behaving this way and we should give out more information for the people coming – Interview D

So, educating the tourist is one of the most important things there, otherwise it will happen in a way that the tourists will not care- Interview A

Supporting other stakeholders in waste management by the municipality or any public organization can be done in several ways. They need to maintain the condition of public areas and educate the stakeholders and bring them together in collaboration. They also need to provide up to date information. Overall, the respondents agree that the municipality has been doing a good job by bringing the actors together in environmental programs such as Sustainable Travel Finland, and also by organizing workshops and lectures that are meant also for the locals.

The municipality has been doing good job, trying to provide information for the area, for the tourism area that everyone has the current information available. There are these workshops and lectures that the municipality has been organizing. It has been providing these for the companies and for the locals as well. I think the public authority, this “ympäristöviranomainen” who is responsible for the surveyance kind of side of things, is doing a very good job giving out information. Like when the legislation changes, they provide tourism area with information and keep everyone in the loop - Interview D

However, interviewee B admits that there is more to be done, because despite the constant emphasis on the need for better waste management, not much has changed over the years. This may be closely related to wasteful practices and the challenges associated with them.

Should they do more? Well, yeah, I think but then again, it's also probably a hard question for the municipalities how they would do that because there have been decades of information shared that you shouldn't create waste and you should sort your waste. And that has been going on in Finland as long as I remember. But then that hasn't really affected much on what has happened. So, I think we are in a situation where somebody should find new ways how to make the waste management more efficient and I don't think that the municipalities have much means of how to do it - Interview B

When it comes to communication with waste management companies, the respondents believe that it has been good and transparent, and they have been present as actors in programs and workshops organized by the municipality. This is an important factor in improving the people's perception of waste management operators.

Interviewee D said that the private waste management company they work with has also been organizing visits for their clients to see how they operate and what they plan to do and are available for inquiries and for providing instructions. However, according to interviewee B, there should be more clarity on what happens to the waste beyond collection.

*Well, I think they are quite transparent about what they do. If you think about the logistic companies, they are quite transparent and they tell what they're doing, what they're collecting. But then I think the clarity and the problem comes from what happens after the waste has been collected and how it is managed into making new products. And I think there we have a gap that we don't really know what happens and then they might paint a prettier picture than the truth is -
Interview B*

I think it is good. In our case, as I said, we are doing close collaboration with this company that is a private sector actor. We are visiting their waste management facilities. Like this last autumn, we went there, and they showed us where they made some new investments and new sorting stations. They told us what is going on and this is what we can do at the moment - Interview D

The respondents shared their thoughts on what could possibly be done to improve waste management in the region. It is said that restaurants have started to look into the possibility of acquiring a shared compost for processing biowaste. Waste management companies have also started collecting biowaste from some of the bigger holiday home areas. Another thing highlighted was the need for nearby waste treatment facilities to solve the issue of long distances, but as it is an expensive thing to implement, it requires the efforts of all the municipalities in the area. All of these could possibly eliminate the drive for engaging in practices that could increase the amount of generated biowaste, in addition to changing the homeowners' attitude towards waste management when they see that they are getting their money's worth when they pay those waste management fees.

Some of the restaurants have sort of investigated an option of starting their own waste management in a way that they would acquire a shared big compost that would be electrically turning most of the bio waste into water and then burn into ashes.

There should be waste management facilities in the whole area shared in Lapland, that the waste wouldn't need to be transported long distances. This is, of course, very expensive for small municipalities. They really need to work together and have the will and the funding to be able to get something like this started.”- Interview A

Composting as a good practice in waste management came up multiple times, and interviewee B shared some insights on an interesting solution. Known as bokashi composting, this solution has been implemented in Iceland, and it is different than conventional composting. The solution, which was developed in Japan in the 1980s, differs from conventional composting by being an anaerobic process, as in no oxygen in the process. Rather than fully decomposing the biowaste, it ferments it, and is able to produce something (e.g., fertilizers) in a relatively short time compared to conventional composting (Vanderlinden, 2022).

In Iceland, they had this kind of communal bokashi where bio waste was collected from everyone, and then they had one facility where they handled all of it and this process makes soil and fertilizer. So, for example, those kinds of things would be in my mind interesting, and they would also add to the tourist destination. Like we have this kind of interesting thing going on here and, good to know that all your bio waste is managed here, and they are made into new soil and new products - Interview B

The respondents all agreed that investing in local processing of waste would indeed be beneficial for the area. It would, for instance, provide local waste treatment solutions that would eliminate the long distances issue, in addition to providing an innovative waste-to-energy option. However, it would be expensive to implement such a solution, and there are not yet any recent indications of this going forward.

Well, I think if they genuinely work these methods, it would be dramatic improvement and good for the overall image. But I think the problem is this kind of innovation, if there would be an option to do this in this way that you described, I think it would have already been done, if there are some technological development goes a little bit forward, maybe this can be the case. I think at the moment, there are not for local utilization - Interview D

I think it would probably have a big effect because if they would have a local way to show that all bio waste will be handled and managed here and then you will for example, get biogas from here and you can refill it to your car. Then it would be transparent, and you can really see the whole chain of events that happens when you manage waste and bring it more concretely because now it is brought all the way to Oulu and people don't really know what happens to it - Interview B

6 DISCUSSIONS

The purpose of this thesis was to approach the issues of waste management and practices associated with it from the social sciences point of view. The perspectives of representatives from four different stakeholder groups were taken into account by conducting four interviews about the topic. The aim was to understand the status of solid waste management in Finnish Lapland's tourism destinations and how current challenges and practices affect the waste management system.

The findings identified a number of practices related to waste generation and management, arising challenges due to such practices, and who is responsible for which. The practices causing a significant increase in waste were found to be associated with consumption, biowaste, and building projects. The responsible people for these practices were homeowners, residents, tourists, hotels, restaurants, and resorts. Practices were found to be connected to each other. For example, consuming more food than needed causes more generation of biowaste, which in itself is said to be one of the most challenging types of waste to handle due to weather conditions and lack of nearby treatment facilities. Drivers for engaging in wasteful practices varied from carelessness, lack of guidance and monitoring, lack of opportunities, to lack of trust between the people and the waste management operators. This links nicely to practice theory, as an understanding was developed on how a practice could lead to another and what influences it.

The chapter "Tourism's wasteful ways" in the Routledge Handbook of Tourism and the Environment (2013), was a foundation for understanding tourist's behavior and what influences it to engage in "wasteful ways". They may be well-intentioned but ill-informed when comes to waste disposal infrastructures as they may assume that they are the same as their homes. Some tourists, on the other hand, may just simply behave irresponsibly and over-consume (Holden & Fennell, 2013, p 460-488). This was addressed in the interviews, generating interesting responses and insights that divided between agreeing and disagreeing on the extent of how true the assumption on tourist's wasteful ways is nowadays.

Going back to the literature review, it is possible to identify similarities that support the findings as well as differences or gaps that could help the study move forward. It is important to clearly discuss how the existing knowledge relates to the findings.

Tyrväinen et al. (2014) introduced eco-efficiency as a tool in reducing environmental impacts from tourism businesses and urban environments. By developing efficient transportation infrastructures, in addition to low-energy solutions and waste management systems, it is possible to achieve eco-efficiency, which requires careful planning that highly considers the conservation of nature. From the interview responses, practices related to development projects, waste management and energy solutions were highlighted, namely home and shared composting for households and restaurants, respectively, waste transportation challenges, burning food waste, waste disposal to landfills, biowaste collection, and local waste processing. By following the principles of eco-efficiency, all these practices and challenges are guaranteed to be addressed and tackled. In addition, the research indicated that the attitudes towards sustainable practices, were positive (Tyrväinen et al., 2014).

This is further supported by the findings, as the respondents clearly indicated that many tourists have a sense of environmental awareness and are expecting adequate waste management services at the destination. It is also pointed out that nowadays tourists would indeed like to generate less waste and adapt to a lifestyle that is based on waste reduction given the possibilities to do so. Another related point from the data was the negative attitude of homeowners toward waste management operators due to enforced fees regardless of how often the services are used. Here, it is necessary to investigate how to change that attitude towards a positive one. It may be so that the people would like to engage in good waste management practices, but are not encouraged to do so, which is something to look into.

Tomperi et al. (2014,2017) and Piippo et al. (2014) studied the possibility of locally utilizing biowaste in Lapland's tourism destinations. The use of landfills in Finland is minimal nowadays, but still present, and implementing waste-to-energy solution would completely eliminate it. It would also drastically reduce the reliance on fossil fuels by providing a renewable source of energy, and also the carbon footprint caused by transporting the waste to far away facilities (Tomperi et. al, 2014; Piippo et al., 2014; Tomperi et al., 2017).

However, energy production by anaerobic digestion alone was seen to be not economically feasible around the year, which implies the need for further optimization of the process in addition to developing storage facilities that could withhold the extreme weather conditions in Lapland that freeze the biowaste, making it useless and also hard to dispose of, as also indicated in the interviews (Tomperi et. al, 2017).

Another point discussed by Piippo et al. (2014) and also pointed out in the interviews supports the fact that the tourists are indeed becoming increasingly environmentally aware, as they are expecting environmental services that include waste sorting and recycling possibilities at the destination. This, in addition to the local waste utilization and processing, ought to dramatically boost the image of a sustainable tourism destination. These opportunities would dramatically improve the image of a sustainable tourism destination, which would also have an effect on the people themselves to do their part in maintaining that image by engaging in good practices that would make it easier for the other actors to do their jobs. The findings show that people are aware, which makes them willing to get rid of their wasteful practices given the possibilities.

Giurea et al. (2018) further supports the findings from the interviews by emphasizing on home composting as a solution for biowaste treatment, in addition to the need for continuous monitoring of the situation. This was seen to be an issue in Lapland due to limited resources, resulting in careless practices by individuals. Educating the tourists was also highlighted, in addition to some simple yet effective ideas for hotels and restaurants to implement, such as reducing the distribution of single-use hygiene products (Giurea et al., 2018).

The thematic document for applying circular economy principles to sustainable tourism, issued by the Economic Commission for Europe (2021), was yet another source that focuses on waste prevention. It presents a clear framework on good practices for improved circularity and effective waste management by reusing, recycling, and proper disposal. “Urban Waste” project by Europe Horizon 2020, was an example of an initiative aimed at developing strategies for waste reduction and management. Finland was not part of this project, but it would be beneficial to participate in such initiatives in the future.

As noticed from literature, there has been a strong emphasis on waste prevention. This is a key factor in raising awareness and educating people, in addition to providing alternatives and opportunities to reduce waste. Coupled together, good practices in waste management will be dominant, especially when it comes to consumption, which is a practice that causes other practices and challenges to occur.

Another study emphasizing on waste reduction was "Tourism Waste Management in the European Union: Lessons Learned from Four Popular EU Tourist Destinations" by Ezeah et al. (2015), which examined the waste management practices in four popular EU tourist destinations, namely Mallorca, Tenerife, Kefalonia, and Kalithea-Rhodes. The study identified similar challenges to the ones faced in Lapland, such as the lack of waste treatment facilities and variations in waste generation based on seasonality. The study supports the findings of this thesis in addition to other literature in terms of emphasizing reduction, reuse, and recycle as good practices, in addition to the need for local solutions (Ezeah et al., 2015).

The compendium of waste management practices in pilot cities and best practices in touristic cities (2017) presents a variety of innovative waste management practices across 11 European cities. Such practices involved different ways of composting, cleaning campaigns, eco-fees on plastic bags, and apps that serve as communication channels between the people and the municipalities. Solutions also focused on waste prevention, in addition to waste-to-energy solutions to produce biogas (Gruber et al., 2017).

Another great and a more recent source for innovative waste management solutions and practices in Europe was the "Good Practices Guide on Waste Management Intelligent Systems and Policies" by Interreg Europe (2022). The main topics of this report were the collection and use of information to optimize waste management, innovative models for waste collection, prevention, reuse, and recycling, and innovative tariffication.

Examples of innovative practices included container sensors for optimized waste collection in Chania, information-based waste collection in Amsterdam, and biowaste treatment. Container sensors were able to reduce travel distances for waste transportation, while information-based waste collection identifies and responds to littering around waste containers and optimizes the logistics for operational services associated with waste collection. Biowaste treatment is again mentioned here as an innovative solution, which supports the available Finnish literature and the findings from the interviews conducted for this thesis (Interreg Europe, 2022). It is worth noting that the report presents evidence of success and potential of learning for each solution, which should be greater motivation for quickly studying and implementing such solution in tourism destinations of Lapland. The innovative practices presented in this report, in addition to the compendium of waste management practices by Gruber et al. (2017), may be potentially feasible for Lapland with close collaboration and planning, and it would be beneficial to refer to them as source of inspiration in promoting and encouraging good practices in the area.

7 CONCLUSIONS

This study serves as a step for further consideration and research regarding waste management in Lapland's tourism destinations. It is a motivation for deeper understanding and exploring of current issues and challenges pertaining to the topic. It aims to provide insights and gaps in such issues, supported by the findings and the available literature. The study observed how tourism destinations in Finnish Lapland are affected by waste management practices, and then recommended how such practices could be addressed based on the findings.

The findings conclude that the main practices contributing to the increase in waste generation were related to consumption, biowaste, and building projects, mostly driven by carelessness, lack of resources, monitoring, and guidance in addition to limited possibilities for waste treatment nearby. The findings indicate that many people do indeed have environmental awareness, and they are willing to do their part if given the opportunity. Travelers travel light, and therefore consume a lot of single-use products. One reason could be the limited available options. Hotels, tourism operators, and restaurants are then responsible for providing such options with the support of the municipality and other stakeholders.

Waste management operators play a pivotal role in the whole equation, since their practices could result in other practices by them or by other actors. Waste management companies transport their waste outside the area due to the lack of nearby waste treatment infrastructure, which results in a high carbon footprint due to fuel consumption. The lack of infrastructure also results in improper waste management practices, such as burning biowaste and taking waste to landfill. In addition, limited resources and means of monitoring add to the challenge of waste management. To overcome these issues, investment is essential along with close collaboration with all involved actors and experts. Waste management operators were said to be transparent and active participants in the discussion, organizing bi-annual meetings, providing expertise and advice to clients, and taking part in workshops and programs organized by the municipality. They could also play a big role in unifying waste signs in the area, which results in further awareness among the people. However, it has been indicated in the interviews that more clarity is needed about what happens to

the waste after collection, and therefore this must be addressed maintain the transparency of the waste management system.

As for the municipality and public organizations, they have been leading the efforts to improve waste management in the area by bringing actors together and keeping everyone informed and up to date with laws and regulations. They have been doing well in supporting the process and could do much more by investing in waste management. DMOs do their part by trying to provide as much information as possible and making it a multichannel process through mobile applications and partnerships with airlines, for instance.

Tourism companies, resorts, and restaurants are also making efforts. Investing in shared composts could be a feasible option given the opportunity and providing resorts with possibilities to push the waste forward must be strongly supported. Despite the practice of storing plastic waste being financially heavy on the operators, they still do it because it is important, and this must be appreciated. Hotels can also look into eliminating single-use products in their services and providing alternatives.

Awareness and acknowledgement of waste management issues and challenges is a big step towards overcoming them. All in all, the key to maintaining good practices and eliminating inadequate ones is working together and keeping the discussion going all the time. That way, everyone is aware of what is going on, and could put their heads together to create a sustainable, environmentally friendly destination. Obersteiner et al. (2021) insist on immediate intervention from all stakeholders to reduce financial and technical pressures and implement sustainable solutions. Municipalities may not be able to see this through on its own, which is why all actors come together to define focus areas of high and low impacts on the destination in order to provide sufficient information to policy makers.

There are clearly issues and challenges for tourism destinations in waste management, as result of different circumstances and practices. As the Ministry of Economic Affairs in Finland states, sustainability can be turned into a competitive asset for Finnish tourism in many ways. Implementing sustainable training entities for tourism enterprises that focus on raising customers'

environmental awareness, climate change and carbon footprint reduction, energy and water efficiency, waste management, waste minimization and promoting recycling, and safety and security management and regulations of tourism services, should greatly contribute to the vision of sustainability in tourism (Ministry of Economic Affairs and Employment, 2020).

Limitations to this study include the scarcity of research on the topic in Finland, resulting in most of the literature being sourced from outside the country. Additionally, the anonymity of interviewees prevented a case study on a specific area in Lapland, hindering the collection of area-specific data. In addition, the fate of collected waste remains uncertain, as pointed out by the interviewees. This study serves as pilot, where viewpoints of different stakeholders concerning waste management practices in tourism were sought. It presents an opportunity for further research in that direction, and also the possibility to conduct area-specific case studies with more stakeholder groups that could dig deeper into the practices associated with waste management in the area. Also, further research is necessary to investigate solutions and innovative practices implemented elsewhere and determine their applicability to Lapland.

There is definitely room for improvement, tourists included. As Lapland is a popular tourism destination, increased efforts in overcoming waste management challenges and introducing innovative practices and solutions, supported by environmentally aware tourist and residents, should guarantee increased popularity and a better overall image of a sustainable tourism destination that adapts to change and is open for innovation.

REFERENCES

- Adams, W. C. (2015). *Conducting semi-structured interviews*. Handbook of practical program evaluation, 492-505.
- Akinyode, B. (2018). Step by step approach for qualitative data analysis. *International Journal of Built Environment and Sustainability*, 5(3), 163-174. <https://doi.org/10.11113/ijbes.v5.n3.267>
- Bailey, J. (2008). First steps in qualitative data analysis: Transcribing. *Family Practice*, 25(2), 127–131. <https://doi.org/10.1093/fampra/cmn003>
- Alpenberg, J., & Scarbrough, D. P. (2021). Practice theory in a collaborative context. *Journal of Business Research*, 123, 415–422. <https://doi.org/10.1016/j.jbusres.2020.09.046>
- Bargeman, B. & Richards, G. (2020). A new approach to understanding tourism practices. *Annals of Tourism Research*, 84. <https://doi.org/10.1016/j.annals.2020.102988>
- Chaabane, W., Nassour, A., & Nelles, M. (2018). Solid Waste Management Key Indicator Development for Hotels: A Tunisian Case Study Analysis. *Recycling*, 3(4), 56. <https://doi.org/10.3390/recycling3040056>
- Clausnitzer, J. (2022). Topic: Travel and tourism in Finland. Retrieved December 3, 2022, from https://www.statista.com/topics/7052/travel-and-tourism-in-finland/#topicHeader__wrapper
- CONNECTS Global Business Community (2022). NACE Codes: What Are They and Why Do They Always Matter? Retrieved December 8, 2022, from <https://connects.world/nace-codes/>
- CSD Major Groups (n.d.). Eco-Audits and Sustainable Tourism: A Union Case Study from Finland. Retrieved 3 June 2021, from https://sustainabledevelopment.un.org/content/dsd/dsd_aofw_mg/mg_worktradunio_specday/casestud9.shtml
- Cupchik, G. (2001). Constructivist Realism: An Ontology That Encompasses Positivist and Constructivist Approaches to the Social Sciences. *Qualitative Social Research*, 2(1). <https://doi.org/10.17169/fqs-2.1.968>
- Diaz-Farina, E., Díaz-Hernández, J., & Padrón-Fumero, N. (2020). The contribution of tourism to municipal solid waste generation: A mixed demand-supply approach on the island of Tenerife. *Waste Management*, 102, 587-597. <https://doi.org/10.1016/j.wasman.2019.11.023>

- Economic Commission for Europe. (2021). Draft thematic document for the Ninth Environment for Europe Ministerial Conference: Applying principles of circular economy to sustainable tourism. Geneva. Retrieved from <https://unece.org/environment/documents/2021/10/informal-documents/cep-27-draft-thematic-document-ninth-environment-0>
- Ezeah, C., Fazakerley, J., & Byrne, T. (2015). Tourism Waste Management in the European Union: Lessons Learned from four popular EU tourist destinations. *American Journal of Climate Change*, 04(05), 431–445. <https://doi.org/10.4236/ajcc.2015.45035>
- Giurea, R., Precazzini, I., Ragazzi, M., Achim, M., Cioca, L., & Conti, F. et al. (2018). Good Practices and Actions for Sustainable Municipal Solid Waste Management in the Tourist Sector. *Resources*, 7(3), 51. <https://doi.org/10.3390/resources7030051>
- Graue, C. (2015). Special Issue: Research Methodology—Qualitative Data Analysis. *International Journal of Sales, Retailing and Marketing*, 9, 5-14.
- Gruber, I., Mayerhofer, J., Obersteiner, G., Ramusch, R., Romein, A., & Eriksson, M. et al. (2017). D2.7 – Compendium of waste management practices in pilot cities and best practices in touristic cities. Urban Waste. Retrieved from <http://www.decisive2020.eu/wp-content/uploads/2019/07/D2.7-Compendium-of-waste-management-practices-in-pilot-cities-and-best-practices-in-touristic-cities.pdf>
- Harju, E. (2021). Jäte Pohjois-Suomen Matkailun Alueorganisaatioiden Vastuullisuusviestinnässä (Undergraduate). University of Lapland.
- Guba, E., & Lincoln, Y. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage.
- Holden, A., & Fennell, D. (2013). *The Routledge handbook of tourism and the environment*. Routledge.
- Interreg Europe (2022). Waste Management Intelligent Systems and Policies, Good Practices Guide, Promoting Innovation to Improve Waste Management at the Local Level. Retrieved from https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1604656595.pdf
- James, L., Ren, C., & Halkier, H (2018). *Theories of practice in tourism*. Taylor & Francis Group.
- Kasam, Iresha, F. M., & Setyoadi, N. H. (2019). Management of Municipal Solid Waste in religious tourism park based on reduce, Reuse and recovery: An Indonesian attraction case study. *MATEC Web of Conferences*, 280, 05017. <https://doi.org/10.1051/mateconf/201928005017>

- Keto, Y. (2018). *Future Nature and Eco-Tourism*. Centria University of Applied Sciences. Retrieved from <https://kvarnen.fi/wp-content/uploads/2019/05/Ecotourism-survey-Jakobstadregion-2018.pdf>
- Martins, A. M., & Cró, S. (2021). The Impact of Tourism on Solid Waste Generation and Management Cost in Madeira Island for the Period 1996–2018. *Sustainability*, *13*(9), 5238. <https://doi.org/10.3390/su13095238>
- Ministry of Economic Affairs and Employment (n.d.). Finnish tourism in Numbers. Retrieved November 30, 2022, from <https://tem.fi/en/finnish-tourism-in-numbers>
- Ministry of Economic Affairs and Employment. (2020). Achieving more together – sustainable growth and renewal in Finnish tourism Finland’s tourism strategy 2019 –2028 and action plan 2019–2023. Helsinki: Ministry of Economic Affairs and Employment. Retrieved November 30, 2022, from https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/162136/TEM_2020_18.pdf?sequence=4&isAllowed=y
- NACE Codes (2022). Complete list of all NACE Code. Retrieved December 8, 2022, from <https://nacev2.com/en>
- Nicolini, D. (2012). *Practice Theory, Work, & Organization. An introduction*. Oxford University Press.
- Obersteiner, G., Gollnow, S., & Eriksson, M. (2021). Carbon footprint reduction potential of waste management strategies in tourism. *Environmental Development*, *39*, 100617. <https://doi.org/10.1016/j.envdev.2021.100617>
- Pham Phu, S. T., Fujiwara, T., Hoang Minh, G., & Pham Van, D. (2019). Solid waste management practice in a tourism destination – The status and challenges: A case study in Hoi An City, Vietnam. *Waste Management & Research*, *37*(11), 1077–1088. <https://doi.org/10.1177/0734242X19862042>
- Phillimore, J. & Goodson, L. (2004). *Qualitative research in tourism: Ontologies, epistemologies and methodologies*. Routledge.
- Piippo, S., Juntunen, A., Kurppa, S., & Pongrácz, E. (2014). The use of bio-waste to revegetate eroded land areas in Ylläs, Northern Finland: Toward a zero-waste perspective of tourism in the Finnish Lapland. *Resources, Conservation And Recycling*, *93*, 9–22. <https://doi.org/10.1016/j.resconrec.2014.09.015>

- Pitkänen, A. (2021). Roskatonta Retkeilyä Koskevan Informaation Vaikutukset Ympäristötietoisuuteen (Undergraduate). University of Lapland.
- Rädiker, S. & Kuckartz, U. (2020). Focused Analysis of Qualitative Interviews with MAXQDA: Step by Step. MAXQDA Press. <https://doi.org/10.36192/978-3-948768072>
- Statistics Finland (2021). Waste Statistics. Retrieved December 8, 2022, from <https://www.stat.fi/en/publication/cktwkksr43wo20b61h94063h3>
- TENK (2013). Responsible conduct of research and procedures for handling allegations of misconduct in Finland. Guidelines of the Finnish Advisory Board on Research Integrity 2012. Finnish Advisory Board on Research Integrity (TENK), Helsinki.
- Tikkanen, W. (2021). Yhteiskunnallisen markkinoinnin mahdollisuudet jätelajittelun kehittämisessä Ylläksellä (Undergraduate). University of Lapland.
- Tilastokeskus (2020). Waste generation by industry. Retrieved December 8, 2022, from https://pxdata.stat.fi/PxWeb/pxweb/en/StatFin/StatFin__jate/statfin_jate_pxt_12qw.px/
- Tilastokeskus (2021) Municipal waste by treatment method. Retrieved December 8, 2022, from https://pxdata.stat.fi/PxWeb/pxweb/en/StatFin/StatFin__jate/statfin_jate_pxt_12qz.px/
- Tomperi, J., Luoma, T., Pongrácz, E., & Leiviskä, K. (2014). Energy potential of biodegradable wastes in Kolari. *Pollack Periodica*, 9(Supplement 1), 5–15. <https://doi.org/10.1556/pollack.9.2014.s.1>
- Tomperi, J., Piippo, S., Aikio, O., Luoma, T., Leiviskä, K., & Pongrácz, E. (2017). Sustainable waste management in Northern rural areas: Local utilisation of bio-wastes. *International Journal of Energy and Environment*, 8(5), 365-374.
- Tyrväinen, L., Uusitalo, M., Silvennoinen, H., & Hasu, E. (2014). Towards sustainable growth in nature-based tourism destinations: Clients' views of land use options in Finnish Lapland. *Landscape And Urban Planning*, 122, 1–15. <https://doi.org/10.1016/j.landurbplan.2013.10.003>
- Vanderlinden, C. (2022). What you need to know about Bokashi composting. Retrieved April 17, 2023, from <https://www.thespruce.com/basics-of-bokashi-composting-2539742>
- Väänänen, E. (2020). *Sustainable tourism destination management, multiple case study from Lapland*. University of Eastern Finland. Retrieved from https://erepo.uef.fi/bitstream/handle/123456789/23091/urn_nbn_fi_uef-20200894.pdf?sequence=-1&isAllowed=y

Vierjoki, E. (2021). Jätehuollon Haasteet Saaristomeren Matkakohteissa (Undergraduate). University of Lapland.

Visit Finland (2022). Key figures in regional tourism account by indicator, region and Year. Retrieved November 30, 2022, from http://visitfinland.stat.fi/PXWeb/pxweb/en/VisitFinland/VisitFinland__Alueellinen_matkailutilinpito/010_ampa_tau_101.px/

Visitory (2021). Lapland accommodation and travel stats. Retrieved December 3, 2022, from <https://visitory.io/en/lapland/2021-01/2021-12/>

Visitory (2022). Lapland accommodation and travel stats. Retrieved December 3, 2022, from <https://visitory.io/en/lapland/2022-01/2022-11/>

APPENDIX 1. Employment in the tourism industry by sector in 2019 (VisitFinland, 2022).

Employment in the tourism industry by sector (2019)	
Tourism industries, total	
Employment, employees	132,400
Employment, self-employed	21,700
Accommodation for visitors	
Employment, employees	14,300
Employment, self-employed	2,000
Food- and beverage-serving serving industry	
Employment, employees	65,700
Employment, self-employed	11,600
Railway passenger transport	
Employment, employees	5,000
Employment, self-employed	0
Road passenger transport	
Employment, employees	17,300
Employment, self-employed	4,900

APPENDIX 2. Employment in the tourism industry by sector in North Ostrobothnia and Lapland (VisitFinland, 2022).

	2019	
	North Ostrobothnia	Lapland
Tourism industries, total		
Employment, employees	6,700	5,850
Employment, self-employed	1,400	1,250
Accommodation for visitors		
Employment, employees	850	2,000
Employment, self-employed	200	300
Food- and beverage-serving serving industry		
Employment, employees	3,550	1,750
Employment, self-employed	700	450
Railway passenger transport		
Employment, employees	50	100
Employment, self-employed	0	0
Road passenger transport		
Employment, employees	1,350	700
Employment, self-employed	400	300

APPENDIX 3. Interview Guide

Background questions:

1. Tell us about your role and research
2. How does the waste management system work in Lapland?
 - How is waste collected?
 - Are there waste sorting possibilities?
 - Where is the waste transported to? And how?
 - Are there waste management facilities in the area?
3. In handling different types of waste, which type(s) do you feel can be more challenging than others? And why do you feel so?

Generated waste from tourism-related companies and activities

4. Waste management systems in Lapland mostly rely on disposal of part of the bio-waste to landfill along with mixed waste partly due to the lack of infrastructure, sorting possibilities and collection networks. How does this impact the quality of your services and activities?
5. This study focuses on practices related to waste generation and management. Which services, activities, and practices generate the most waste?
6. What do you think is currently the biggest challenge in the region's waste management in terms of practices?
7. The continuous increase in overnight tourist arrivals and the subsequent increase in the generated waste, in addition to the tightening waste regulations, have resulted in a need to improve local processing of waste. Does this apply to your region? What is the current situation?
8. "Tourists have a 'use and throw' mindset. They have no investment in the community. They pollute the environment. It is a lifestyle issue: the tourist would like to travel light. Therefore, the use of disposables – more plastics, more waste, no recycling. The local communities have to become either waste absorbers or waste managers".
 - To what extent do you agree with this description of tourist's wasteful practices? And does it apply to the region?
9. Tourists travel to locations foreign to their own domestic contexts. So, they may be unaware of the local waste management practices, and therefore their behavior pertaining to consumption, waste generation and waste disposal may be inappropriate.
 - Do you think the current instructions and information regarding waste sorting and disposal for incoming tourists are enough, if any?

10. When international tourists visit, are they conscious about the availability of environmental services and waste sorting possibilities? What were their thoughts on the availability of such services?

The challenges of waste management and seasonality

11. How does seasonality affect the amount of waste, and waste management? How significant is the difference between summer and winter seasons, for example?

12. What are the challenges imposed on waste management that are associated with climate and/or weather?

The role of public organizations in waste management:

13. How does the municipality, state, or other public body in the region support waste management well enough?

14. How is the communication with waste management companies?

- Is there enough transparency and clarity on what is being done and what else needs to be done?
Do you feel the cooperation is well-established?

15. The Waste Act has been revised several times in recent years. How do you think this has impacted waste management?

Improvements of the current waste generation and management situation

16. What do you think needs to be done to improve the current waste management systems?

17. In order to reduce the amount of waste, what do you think are the main responsibilities for the involved stakeholders?

- As a representative of your organization/business, what would be your responsibility?
- What do you think are the responsibilities of the municipality, waste management companies, and the people?

18. Local utilization of waste, specifically biodegradable waste in waste-to-energy solutions would result in reducing landfill emissions, reliance on fossil fuels, and transportation expenses from the long distances to landfills. This would improve the efficiency of the waste management system. How do you think this would affect the overall image of a tourism destination?

19. Would you like to add something else?

APPENDIX 4. Letter of consent

Dear XXX,

My name is Moadh Benkherouf. I am a master's student at University of Lapland, Rovaniemi, Finland under the supervision of [Outi Rantala](#). You are invited to participate in my master thesis study titled "Waste Management Practices in Tourism Destinations of Finnish Lapland". The purpose of the study is to study the impact of waste management practices and how they affect the image of a sustainable tourism destination. The results of the study will be published as part of my master's thesis. The thesis is conducted as part of the master's degree Programme in Northern Tourism (NoTo).

By signing this letter, you give consent to use the interview material confidentially and exclusively for research purposes. The research follows the principles for responsible conduct of research dictated by the Finnish Advisory Board on Research. The data will be handled anonymously. Your participation is voluntary, and you can withdraw your permission even after signing this document, by informing the below mentioned contact person.

Please feel free to contact me or my supervisor, if you would need further information regarding the study and the use of the research data.

Sincerely,
Moadh Benkherouf
NoTo Master's student
phone
email

I give consent to use the interview as data for the purpose mentioned above.

Signature

Date

Print Name