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Abstract

Sustainability in tourism is more important than ever. Sustainability can be achieved in many different aspects of tourism. For this thesis, I concerned myself with sustainability in regard to the use of plastic in airports, specifically Aalborg Airport and Copenhagen Airport.

With this comparative case study of Aalborg Airport and Copenhagen Airports I wanted to see how they approach sustainability with the five principles of Zero Waste and innovation concerning single-use plastic packaging for beverages and food to-go for their visitors while they stay at the airport.

To research this issue of concern, in which I discovered a noteworthy research gap, I went on a trip between Aalborg and Copenhagen, to visit their airports and conduct a field data collection by taking pictures on my smartphone. I also did a website content analysis for both the website of Aalborg Airport and Copenhagen Airport to understand the measures both airports are taking in regard to sustainability. These two methods gave me the tools to do a comparative case study of the two airports.

After analysing all the data, I had collected at Aalborg Airport and Copenhagen Airport, I found a lot of similarities between the two, in their respective approach to a sustainable transition. The first similarity is that they both have a goal towards becoming CO_2 neutral and here Copenhagen Airport already has become that in 2019, whereas Aalborg is still working on that goal, but with similar initiatives. The second similarity is that both airports are utilising renewable energy sources. The third similarity is that both airports are engaged in the development of new and innovative green fuels that can limit CO_2 emissions further. The fourth similarity is that both airports already implement the Zero Waste principle recycle, however, both airports do so rather inconsistently, and with great room for improvement. There were several areas at both airports where they did not even bother differentiating between the kind of waste that the bins are designed for. A fifth similarity is that they lack policies to phase out single-use plastic packaging – or plastic altogether - for beverages and food.

There were also a few differences as well between Aalborg Airport and Copenhagen Airport, such as the former actually including other Zero Waste principles (refuse and reduce) with some of their food and beverages, whereas Copenhagen did not. Both airports could implement more innovative actions to reduce single-use plastic packaging for beverages and food however, even if Aalborg Airport seems to be one step ahead. Another difference is of course the sizes of the airports, as Copenhagen Airport is much bigger and handles far more visitors per year than Aalborg Airport, which means that they have a much bigger representation of third party restaurants and vendors, which aren't directly under the Copenhagen Airport jurisdiction.

1. Introduction

When a human transitions from a mundane state to a liminal state, habits become challenged due to the unfamiliar surroundings. Specifically, when an eco-conscious citizen, who prides themselves on sustainable habits in their everyday life (such as recycling, conscious consumerism etc.) go travelling, they can become forced to downgrade their habits, if these new surroundings do not facilitate their ethical viewpoints. I believe that airports specifically are an area of travelling, in which several measures can be improved, to even out the bumpy transition from a mundane state to a liminal state, when an eco-conscious human becomes a tourist. This is an area I am very interested in exploring for potential improvement, or innovation even, as I wish to make a career in sustainable tourism.

When entering a liminal state, it can be difficult to maintain one's sustainable, particularly in a society that is not built to be in favour of Zero Waste principles. However, I do not believe it has to be like that. The solution must be light and easy for the traveller though, as they find themselves in a liminal state. There are ways to prevent single-use plastics, such as carrying containers with you, but that is tricky while travelling. Traveling in itself can be both exciting and exhausting at the same time, which means that plastic has become an easy go-to for tourists and travellers; It does not weight a lot, it does not take up much space, and it can be discarded immediately after use. However, the disposal of plastic waste is very poor, as it is estimated that only about 9% of all plastic waste globally is recycled according to the OECD[1]. This is why I think airports are a great place to target, in regard to limiting the use of single-use plastic items among tourists and travellers. I have personally witnessed the amount of plastic packaging being used at airports, which could be swapped for more sustainable packaging. Innovative rethinking of the handling of food and beverages is important as well, to minimize waste.

Reports and environmental research show the problems plastic causes for the environment. Micro plastic has been found in human blood[2] and breast milk[3], as well as in nature itself, where even newly discovered species[4] are found with plastic in them and given names that reflect this. I do, therefore, find it quite interesting why airports do not seek to implement principles of Zero Waste, such as refuse and reduce, alongside recycling. Society as a whole has become increasingly aware of the severity of the damage plastic does to our planet, so hopefully this will motivate a willingness to change habits when travelling.

[1] OECD.org, 22/02–2022. Source: https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm
[2] Carrington, 24 March 2022
[3] Carrington, 7 October 2022
[4] Nicolas, 5 March, 2020

Zero Waste

Zero Waste is a great tool to fight plastic pollution, but also waste in general. The Zero Waste movement, and its five principles were presented in 2013 when Béa Johnson released her book "Zero Waste Home: The Ultimate Guide to Simplifying Your Life by Reducing Your Waste".

Zero Waste has a set of five principles - Refuse, Reduce, Reuse, Recycle, Rot (Johnson, 2013). I believe that the principles of refuse and reduce can be applied to airports to a certain extent, since some sort of recycling already is in use at many airports. The idea behind Zero Waste is essentially is to use what one already has, and only buy what one absolutely needs. I think this is an important thing to sustain, no matter if we are in a mundane or liminal state. In a society where our everyday lives are not evolving around the first three principles – refuse, reduce, reuse – it is difficult to establish new habits, which takes lots of time. So, naturally, our society adapts more easily to the fourth principle of the Zero Waste principles – recycle. As Johnson (2013) says:

"(…) Zero Waste does not promote recycling. Rather, it takes into consideration the uncertainties and costs associated with recycling's processes. Recycling is regarded only as an alternative to handling (versus, ideally, eliminating) waste material, and although included in the Zero Waste model, it is deemed a last resort before the landfill (as is composting)" (p. 14).

As this quote suggests, it is important to not rely solely on recycling, as the first three Zero Waste principles are even more important. I believe that airports specifically can improve on this, and that they should strive to think more innovatively within fields of responsible, social, and sustainable innovation.

Preliminary research

When researching academic sources surrounding airports and what Zero Waste principles are applied to increase sustainability, the vast majority relates to the recycling of waste[5][6][7][8][9], some relate to renewable energy[10], and a select few did both[11][12] - but there's next to no principles in use, to downright eliminate

[5] Baxter & Srisaeng, 2018
[6] Parameshwar, 2011
[7] Sebastian & Louis, 2021
[8] Sreenath, Sudhakar, & Yusop, 2021
[9] Özbay & Gokceviz, 2022
[10] Baxter & Srisaeng, 2022

plastic waste. This research gap shows that there's a desperate need to develop innovative solutions in this particular area, to improve sustainability during the liminal state travellers find themselves in while travelling through airports.

Due to my personal interest in the subject of sustainable tourism, the elimination of plastic waste and pollution, as well as the Zero Waste lifestyle, I hope to be able to illuminate, and perhaps even make an impact, with this thesis. While travelling through European airports in cities such as Aalborg, Copenhagen, Venice, Lisbon, Budapest, and Athens between September 2021 to September 2022, I have noticed the need for improvement myself, so I am personally very invested in this issue. I try to live a Zero Waste lifestyle myself, as good as I possibly can, which isn't easy either, due to how widespread the use of plastic packaging has become, as well as a lack of bulk stores and farmer markets.

1.1. Thesis structure

My thesis will be divided into eight parts – introduction, literature review, theory, methodology, analysis, discussion, conclusion, and bibliography.

In the introduction, I will introduce the subject of the thesis and why I have chosen it. I will then present two subsections; the first one will be regarding the structure of the thesis itself, the second one will be the problem formulation and research questions.

In the literature review, will provide an understanding of my knowledge of the sources I have used in this thesis' subject.

The theory section will include the academic theories I have applied in the thesis, as well as a reasoning for including them.

Methodology will describe the methods I have used for my research, and how I have conducted it.

The analysis section will be the longest section of the thesis, as it will contain the analysis of my collected data. This analysis will be rooted in my problem formulation and research questions.

In the discussion section, I will discuss the results of my analysis, and potential improvements.

In the last section, the conclusion, I will wrap everything up.

[11] Cooke & Bernheim, 2022
[12] Greer, Rakas, & Horvath, 2020

Bibliography will contain all the sources used for the thesis.

1.2. Problem formulation

The problem formulation for my thesis is:

What can Aalborg Airport and Copenhagen Airport do to improve, or innovate, sustainability?

With this problem formulation I hope to be able to shed a light on the issues Aalborg Airport and Copenhagen Airport face in regard to sustainability, and perhaps even suggest potential solutions.

1.2.1. Research questions

In order to be able to answer my problem formulation, I have proposed the following research questions.

Why is plastic waste an issue?

In what areas does Aalborg Airport succeed with sustainability initiatives, and in what areas does it fail?

In what areas does Copenhagen Airport succeed with sustainability initiatives, and in what areas does it fail?

How do the two airports compare?

The research questions will help me structure my thesis, as I seek to find an answer to my problem formulation.

2. Literature review

In this section, I will be reviewing and explaining the literature that I have chosen to include in my thesis.

Banks, M. (2018). Using visual data in qualitative research (2nd edition Edition). SAGE Publications Ltd.

I have included this book to help me understand how to use visual data in qualitative research, and to understand the qualities it can add to my research. My data collection method is field data collecting, in the shape of photographs taken at Aalborg Airport and Copenhagen Airport.

Baxter, G., & Srisaeng, P. (2022). OPTIMIZING AIRPORT SUSTAINABLE WASTE MANAGEMENT FROM THE USE OF WASTE-TO-ENERGY TECHNOLOGY AND CIRCULAR ECONOMY PRINCIPLES: THE CASE OF LONDON GATWICK AIRPORT.

I have included this case about London Gatwick Airport, and how it was the first airport in the world to implement a Waste-to-Energy plant in 2016, which turns onsite waste into an energy source onsite, and therefore prevents waste ending up in landfills. Of the five Zero Waste principles, this one utilizes recycle.

Baxter, G., Srisaeng, P., & Wild, G. (2018). Sustainable airport waste management: The case of Kansai international airport.

I have included this article about the case study of Kansai International Airport from 2002 to 2015, because it shows how the airport has implemented sustainable waste management policies. Of the five Zero Waste principles this case utilizes recycle.

Carrington, D, 24 March 2022, Microplastics found in human blood for first time.

I have included this article as it is used to stress the severity of the issues with plastic-use worldwide. The internet article from The Guardian is stressing the fact that plastic, more precisely microplastic, is emerging in human bodies. It specifically focuses on microplastic found in human blood for the first time.

Carrington, D., 7 October 2022, Microplastics found in human breast milk for the first time.

I have included this article to stress the severity of the issues with plastic-use worldwide. This internet article from The Guardian is stressing the fact that plastic, more precisely microplastic, is emerging in human bodies. It specifically focuses on microplastic found in human breast milk for the first time.

Cooke, E., & Bernheim, A. (2022). Beyond zero: Activating triple zero airports.

I have included this journal chronicle on how San Francisco International Airport has become the first airport in the world to adopt triple zero goals, which happened due to high collaboration across the airport management. Of the five Zero Waste principles this case utilizes recycle and rot.

Fayos-Solà, E. & Cooper, C. (2019). The Future of Tourism Innovation and Sustainability (p. 325-337)

I have included this chapter which is about innovation and sustainability in tourism as well as the base of my theory about innovation. I have chosen this chapter, which is also the title of the book it is from, as it is about innovation and sustainability being intertwined, as there is a current paradigm-shift in the tourism sector, and since tourism cuts across the fabric of society, steps towards being more sustainable applies as well.

Guba, E. G., & Lincoln, Y. S. (1994). Competing Paradigms in Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research (pp. 105–117).

I have included this chapter is about the four well known research paradigms and explains their differences in ontology, epistemology, and methodology as well as ten paradigm position issues, which also helps to differentiate the four paradigms from one another.

Greer, F., Rakas, J., & Horvath, A. (2020). Airports and environmental sustainability: a comprehensive review.

I have included this article as it is a review of several airports and how different the sustainable development is differentiating between them. Overall, the sustainable development is steadily increasing,

such as emissions, electricity, water, and waste management. Of the five Zero Waste principles, this case utilizes reduce and recycle.

Jonson, B (2013). Zero Waste Home: The Ultimate Guide to Simplifying Your Life by Reducing Your Waste.

I have included this book reference, where the author is well known for coining the term of Zero Waste and making its five principles mainstream. I will use Jonson's model to stress why the principles of Zero Waste should be considered important in airports as well as at home.

Nicolas, A, 5 March 2020. Meet the newly discovered ocean species: plastic.

I have included this article to stress how serious the issue with plastic is worldwide and, in this case, it is about an ocean species found with plastic in it.

OECD.org, 22/02–2022. Plastic pollution is growing relentlessly as waste management and recycling fall short, says OECD.

I have included this article to stress how serious the issue with plastic is worldwide and, in this case, it is about poor waste management and recycling.

Parameshwar, H. K. (2011, December). Solid waste management in airports: A case study of Bangalore International Airport.

I have included this case study of Bangalore International Airport's waste management, which has been the frontrunner, and setting benchmarks for other Indian airports in this regard. Of the five Zero Waste principles, this case utilizes recycle.

R.M. Sebastian, J. Louis, (2021) Understanding waste management at airports: A study on current practices and challenges based on literature review.

I have included this reference as it looks at how the waste management is being practised, and its challenges, at different sized airports, which differs a lot depending on size. It also shows the difficulties

that COVID-19 has brought to sustainable development. Of the Zero Waste principles, this one has a focus on the principle recycle.

Schneider, S. M. & Foot, K. A. (2004). The Web as an Object of Study.

I have included this article about how the emergence of the web has brought new digital technologies which has resulted in new methodological strategies and which approaches has emerged in web studies. It also mentions web sphere analysis as well.

Sreenath, S., Sudhakar, K., & Yusop, A. F. (2021). Sustainability at airports: Technologies and best practices from ASEAN countries.

I have included this paper about how technologies and practices are used to make ASEAN airports more sustainable. The sustainable development is environmental, social, and economic, where the environmental has the biggest impact, like waste management. Of the five Zero Waste principles, this one utilizes recycle.

Özbay, İ., Gokceviz, N.A. (2022) Towards zero-waste airports: a case study of Istanbul Airport.

I have included this case study for Istanbul Airport from 2019-2020. It mentions that Zero Waste is the way to become more sustainable. The focus is on sustainable waste management, which has been improved following the COVID-19 pandemic.

3. Theory

In this section I will explain the theory of innovation that is the foundation for my thesis. Innovation is key to improve sustainability in tourism.

3.1. Innovation

According to Fayos-Solà & Cooper (2019), innovation is important for the future of tourism, in fact, they say that it is key "to adapt to the future and create a resilient and sustainable tourism sector, strategically fit for purpose for the future" (p. 326). They also mention that is has to be recognised that tourism is late to a knowledge-based approach and have therefore failed to come to a realisation of the benefits of generating and managing knowledge for innovation in tourism enterprises, destinations and governments (Fayos-Solà & Cooper, 2019). Furthermore, they say that there is an urgent need for tourism to adapt to knowledge-based innovation, as the tourism sector is facing several environmental challenges – climate, business, and technology. If the tourism sector and its actors want "to survive and successfully compete in this environment, tourism organisations and destinations need to reinvent themselves through knowledge-based innovation" (Fayos-Solà & Cooper, 2019, p. 326).

Two key concepts are being presented – *adapt* and *resilience* (Fayos-Solà & Cooper, 2019, p. 326). The first key concept adapt is about the notion of ability of a system adapting to the change. The second key concept resilience is the growing acceptance of the idea about the system's resilience to change. Adaptation is the system's ability to make incremental adjustments due to change, which can be achieved through adaptive learning and then by which the system learns to cope with change (Fayos-Solà & Cooper, 2019). Resilience is when the system changes as a cause to knowledge emerging, which has to be responded and adapted to due to no prior experience referring to, and, therefore, able to gain competitive advantage, withstand change, and the degree to cope with change (Fayos-Solà & Cooper, 2019).

Innovation is according to Fayos-Solà & Cooper "the bridge to the future, although, it is important to recognize that not every level of innovation has the same significance" (p. 327). They mention that small changes and re-engineering are limited in the strategic challenges, however, it is the disruptive and paradigm-shifting innovation that is the game-changer and is the key to maintain a competitive edge through the use of knowledge and innovation, which helps to gain economic growth, and development. Innovation is dependent on "creating and accessing knowledge" (Fayos-Solà & Cooper, 2019, p. 327), which is why it plays a central role in creating value and to have a sustainable competitive advantage.

According to Fayos-Solà & Cooper the importance of innovation is important for the future of tourism, as it challenges the business-as-usual paradigm. Furthermore, it is important to debunk existing well-established myths about innovation, which is regarding the public action being seen "as bureaucratic and inefficient versus a dynamic, entrepreneurial and innovative private sector" (Fayos-Solà &Cooper, 2019, p. 328). The role of the government is central when it comes to using innovation in re-shaping tourism actors such as destinations, institutions, and management.

Fayos-Solà & Cooper has identified two characteristic features of innovation in tourism. The first characteristic is that service and innovation is less understood compared to physical goods and products. It is characterized by understanding and incorporating to pre-requisites to deliver the service and the service itself. The second is about innovation used with a polycentric approach, which is interaction between organisations and stakeholders, which is descripted as the innovation system. The concept of innovation system promotes clusters to facilitate innovation by increasing cooperation and enhancing competition as well.

With the innovation system operating within the tourism context, there are two specific peculiarities of the sector to consider.

The first peculiarity is that "many of the prior conditions necessary for successful innovation are absent in the tourism sector. The sector is characterised by a dominance of small enterprises which are often single person or family-owned, lacking managerial expertise and/or training" (Fayos-Solà & Cooper, 2019, p. 328). This makes the knowledge-based innovation highly relevant.

The second peculiarity is about "the foundation of knowledge-based innovation is the effective transfer and use of knowledge to contribute to the sustainability and strategic success of both organisations and destinations" (Fayos-Solà & Cooper, 2019, p. 329). However, this has turned out to be rather difficult in tourism, as the tourism sector is not engaged with tourism researchers.

With knowledge-based innovation tourism can help assist with world problems. It is becoming more evident that:

"*Tourism is not just a passive subject in the evolution of our societies and the outcome of present global trends. Because of both its quantitative importance and its inclusion in the fabric of civilization, tourism can facilitate or oppose change, with the capacity of even being a catalyst of disruptive innovation. In this context, it is useful to explore the interrelationship between tourism and the kinds of innovation that can shape our future*" (Fayos-Solà & Cooper, 2019, p. 329)"

There are considered three types of innovation in tourism, with the input and outcomes of tourism as both an agent and a subject:

1. Scientific and technological innovation
2. Sociocultural and economic innovation
3. Governance innovation

The first kind of innovation, *scientific and technological innovation*, has *eco efficiency* as a key concept, as it "includes both the optimal use of (natural) resources and minimizing impacts on the natural environment" (Fayos-Solà & Cooper, 2019, p. 330). Furthermore, eco-innovation in tourism is an essential part of eco-efficiency, as it is not only referring to the advances in science and technology and the direct application of those in tourism, but also knowledge management of destination, stakeholders and government (Fayos-Solà & Cooper, 2019). With scientific and technological innovation drawing on feasibility and globalisation being a characteristic of the new paradigm in the world economy, this will at one point disrupt traditional business practices and change travel flows quantitatively and qualitatively due to the growth limits and increasing pressure (Fayos-Solà & Cooper, 2019). Destinations will have to keep a balance of authenticity and connectivity, and have strategies considering stakeholders, as well as having respect for the institutional and natural environment, invest in technologies connecting present and future consumers, and with these sci-tech interactions with tourism determine either success or failure in paradigm-shift situation (Fayos-Solà & Cooper, 2019).

The second kind of innovation is *sociocultural and economic innovation*. Due to the fact that the current era is digitalised, innovation then challenges tourism experiences, and as a result the postmodern society will present paradoxes and uncertainties leading to tourists cannot be categorised or predicted as before (Fayos-Solà & Cooper, 2019). The complexity of the world faces us with tourists becoming prosumers, co-producers of their lifestyles and specific experiences, as well as technology and digitalisation have created new kinds of types of relations between stakeholders (Fayos-Solà & Cooper, 2019). With the current technology and digitalisation, the large data sets are available with user-generated content, which is leading to customisation services and is replacing traditional mass-production tourism products. This also affects pricing strategies, which leads to multi-pricing approaches, which need to be encouraging price transparency and competition. Due to this a framework for ethics in tourism needs to be designed and implemented, and based on political and economic growth, as previous attempts have failed (Fayos-Solà & Cooper, 2019). With the failure comes a new ethics model with important aspects that will confluence of global and local social contracts that represents both general and local conditions, and includes the hypernorms of altruism, recognition, education, autonomy/rights, justice, respect, and sustainability, which

are fundamental to human existence and to position ethics in tourism for the future (Fayos-Solà & Cooper, 2019). However, this will be challenged by traditional interests and groups based on profit and prestige, thus challenging innovation in this domain. Both heritage tourism and city tourism experience the same core issues such as the residents in the community and tourists resulting in imbalance of the destination management and governance. For heritage tourism there are further issues with commodification of heritage, and lack of exploring opportunities, with which innovation can help "balancing the imperative of preserving heritage authenticity and integrity" (Fayos-Solà & Cooper, 2019, p. 332). With city tourism the other issues are technological and social disruptions, which happens due to an increasing demand, and over tourism, which makes the residents reject tourism increasingly as "cities are complex social ecosystems where residents and visitors share spaces, resources and experiences" (Fayos-Solà, 2019, p. 332), and capacities are ignored and surpassed. To help with these socio-economic and economic issues through innovation "place governance is a collective tool to engage residents and visitors in planning and management to develop social capital with a view to increased equality and inclusiveness, and to link tourism dynamics (…) It can improve the quality of life of people and create opportunities in the making of resilient tourism destinations" (Fayos-Solà & Cooper, 2019, p. 332).

The third kind of innovation is *governance innovation*. As Fayos-Solà & Cooper (2019) describes it "*measuring tourism is a wicked enterprise* deserving much effort and knowledge, and there is still a big gap between present data mining and desired achievements" (p. 333). The need for this is found in expanding and implementing an active cooperation with other disciplinary environments, as well as overcoming obsolete mindsets (Fayos-Solà & Cooper, 2019). For the future of tourism, researchers also need to strive for a better analysis and understanding the issues at stake, as well as a better integration between qualitative and quantitative approaches is definitely also important to do. In prolongation of the approach, a collaborative effort should be focused on, especially, basic research, as a building up on applied methods and tools need to have solid theoretical foundations, or otherwise they seem unlikely (Fayos-Solà & Cooper, 2019). Destinations have a common dilemma on whether to be highly focused or a broad appeal market segments, which leads to diluting their essence at their core positioning, which affects the ability to be distinctive. This leads to a re-positioning, but only as long as it can be supported by tangible action and facts, which needs to be done frequently (Fayos-Solà & Cooper, 2019). As destinations in tourism has "a set of action areas where institutions provide governance arrangements that support collaboration and competition at the same time (coopetition)" (Fayos-Solà & Cooper, 2019, p. 333). A tool like IAD[13] framework helps exploring the behaviour of stakeholders at the destination, which shows how governance

[13] Institutional Analysis and Development. Fayos-Solá & Cooper, 2019, p. 333.

arrangements are actually performing, understanding how to manage a destination, and common action situations which are information exchange, coopetitive marketing and policy development. As the complexity of tourism destination faces in the century of local power is increasing, nuanced approaches to contemporary governance arrangements are then crucial (Fayos-Solà & Cooper, 2019).

As there is a looming paradigm shift in tourism which occurs not only in the response of the tourism sector towards the challenges it faces, but it is also seen in the openness towards new ideas and frameworks (Fayos-Solà & Cooper, 2019). The paradigm shift will also acquire "a re-appraisal of how the costs and benefits of tourism are to be allocated" (Fayos-Solà & Cooper, 2019, p. 334). The core of issue is found in the macro-governance of tourism destinations and tourism policy in general and is why tourism cuts across the fabric of society. Tourism involves not only market-frame decision making, but also externalities and public goods. There are two significant initiatives to be done. The first one is "the importance of *governance*, of recognizing the tourism sector and destinations as networks of agencies. To succeed in innovation and to be sustainable and competitive, these networks need to be managed and governed as they provide a framework for policy communication and intervention" (Fayos-Solà & Cooper, 2019, p. 334), and building destination knowledge of human, institutional and technological capital through interactive sharing and trust in the tourism networks. The second one is about innovation requiring engagement of the tourism sector with the knowledge economy, which has a number of policy implications. The policies for the knowledge economy are based on knowledge with the nature as a global public good, which means knowledge should be shared between both public and private organisations.

Over-all this means according to Fayos-Solà and Cooper that policy and governance approaches is the way forward due to the inherent paradigm shift.

4. Methodology

In this section I will write about the methods that I will use for my research. The methods I include in my thesis will provide structure to my research and the foundation for my analysis.

4.1. Research paradigm – Constructivism

The research paradigm I will be utilizing for the thesis is *constructivism*. According to Guba & Lincoln (1994) the ontology is relativism, which means that the reality is local and specifically constructed, the epistemology is transactional/subjectivist which is created findings, and the methodology is hermeneutical/dialectical (p. 109).

Ontology in constructivism is known as *relativist*, this means that there are several understood realities in form of "multiple, intangible mental constructions, socially and experientially based, local and specific in nature (although elements are often shared among many individuals and even across cultures), and dependent on the individual persons or groups holding the constructions" (Guba & Lincoln, 1994, p. 110-111). The constructions are alterable as they are not more or less "true" in any absolute sense, but rather more or less informed and/or sophisticated (Guba & Lincoln, 1994).

Epistemology in constructivism is known as *transactional and subjectivist*. This means that the investigator and the investigated object are assumed to be linked together interactively so the "findings" are then *literally created* as a result of the investigation proceeds (Guba & Lincon, 1994).

Methodology in constructivism is known as *hermeneutical and dialectical*, as the variable and personal, intramental, nature of social construction which suggests that individual constructions is being elicited and refined as happens only through interacting *between and among* the investigator and the respondents (Guba and Lincoln, 1994). As Guba & Lincoln describes it "These varying constructions are interpreted using conventional hermeneutical techniques and are compared and contrasted through a dialectical interchange. The final aim is to distil a consensus construction that is more informed and sophisticated than any of the predecessor constructions" (p. 111).

Besides ontology, epistemology and methodology there are also paradigm positions. The first paradigm position issue is *inquiry aim* and it is about understanding and reconstructing the constructions people, which also includes the inquirer and aims towards consensus, but also being open to new interpretations as information and sophistication are being improved over time. Other key concepts for this are advocacy and activism (Guba & Lincoln, 1994). The inquirer is both roles as participant and facilitator in the process.

The second issue is the *nature of knowledge*, and this means that knowledge consists of constructions where there is relative consensus, or at least some kind of movement towards consensus, among the competent to interpret the substance of the construction. Multiple "knowledges" can coexist when there are equally competent interpreters and/or depending on interpreters with different backgrounds that differentiates them from each other (Guba & Lincoln, 1994).

The third issue is *knowledge accumulation*, and in constructivism it happens only in a relative sense because of the formation of even more informed and sophisticated constructions through the hermeneutical/dialectical process that brings varying constructions into juxtaposition. This implicates an important mechanism to transfer knowledge from one setting to another as the provision of vicarious experience, this is supplied by in case study reports (Guba & Lincoln, 1994).

The fourth issue is *goodness or quality criteria*. In constructivism there are proposed two sets of criteria: the *trustworthiness* criteria of credibility, transferability, dependability, and confirmability, and the *authenticity* criteria of fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity (Guba & Lincoln, 1994). The former set is an effort to resolve the quality issue for constructivism, even though the issue is nevertheless not well resolved and further critique is therefore needed (Guba & Lincoln, 1994).

The fifth issue is about *values*. The value in constructivism is pride of place as "they are seen as ineluctable in shaping (in the case of constructivism, creating) inquiry outcomes" (Guba & Lincoln, 1994, p. 114). Excluding values would not be countenanced, as it would be, as Guba & Lincoln (1994) describes it, "inimical to the interests of the powerless and of "at-risk" audiences, whose original (emic) constructions deserve equal consideration with those of other, more powerful audiences and of the inquirer (etic)" (p. 114). The inquirer is seen both as orchestrator and facilitator of the inquiry process and therefore tends to cast the inquirer in a more authoritative role.

The sixth issue is about *ethics*, which is intrinsic. This is because of participant values is included in the inquiry, which starts with the existing constructions of the respondents and working towards increased information and sophistication in both theirs and the inquirers construction. There is an incentive to revelation, a *process tilt* which is "hiding the inquirer's intent is destructive of the aim of uncovering and improving constructions." (Guba & Lincoln, 1994, p. 115). With the hermeneutical/dialectical methodology added as well, there is a strong but fallible safeguard against deception, as the methodology may produce problems of confidentiality, anonymity, and interpersonal difficulties (Guba & Lincoln, 1994).

The seventh issue is *voice*. The inquirer's voice is described as the "passionate participant" being actively engaged in facilitating a "multivoice" reconstruction of the inquirer and the participants and "change is facilitated as reconstructions are formed and individuals are stimulated to act on them" (Guba & Lincoln, 1994, p. 115).

The eighth issue is about *training*. The keywords are resocialization, qualitative and quantitative, history, values of altruism and empowerment (Guba and Lincoln, 1994). These words mean that resocialization is accomplished with thorough schooling in postures and techniques of positivism and post-positivism, as well as "students must come to appreciate paradigm differences (...) and, in that context, to master both qualitative and quantitative methods" (Guba & Lincoln, 1994, p. 115), which is important because of the dialectical/hermeneutical methodology. Finally, students must "be helped to understand the social, political, cultural, economic, ethnic, and gender history and structure that serve as the surround for their inquiries, and to incorporate the values of altruism and empowerment in their work" (Guba & Lincoln, 1994, p. 115).

The ninth issue is about *accommodation* and all that is incommensurable. In constructivism this means that there is either a "real" reality or there is not, with a wish to resolve this problem differently considering the physical versus the human realm (Guba & Lincoln, 1994). This means that inquire is either value free or not, as logical accommodation is seemingly impossible (Guba & Lincoln, 1994).

The tenth issue is about *hegemony* and is about seeking recognition and input.

4.2. Case study

The research design for this thesis is case study as it "entails the detailed and intensive analysis of a single case" (Bryman, 2012, p. 66). A case study is about the complexity and the particular nature of a specific case. According to Bryman (2012) "the most common use of the term 'case' associates the case study with a location, such as a community or organization. The emphasis tends to be upon an intensive examination of the setting" (p. 67). Furthermore, there is a tendency to associate with qualitative research, however, that identification is not appropriate according to Bryman (2012). With that being said: "It is certainly true that exponents of the case study design often favour qualitative methods, such as participant observation and unstructured interviewing, because these methods are viewed as particularly helpful" (Bryman, 2012, p. 68). However, case studies also frequently employs both qualitative and quantitative research methods. If a case study's investigation is exclusively based on quantitative method, it might be difficult to determine whether or not it is described as a case study or a cross-sectional research design, and vice versa can be

said about the case studies based on qualitative research (Bryman, 2012). In order to be called a case study rather than a cross-sectional design, the fieldwork has to be undertaken at a single location and a focus interest on its own (Bryman, 2012). Designs that have experimental and cross-sectional design tend to have a relation between theory and research is typically oriented towards being deductive (Bryman, 2012). If the predominant research strategy in a case study "is qualitative, a case study tends to take an inductive approach to the relationship between theory and research; if a predominantly quantitative strategy is taken, it tends to be deductive" (Bryman, 2012, p. 69).

There are considered three overall research design criteria, *reliability*, *replicability*, and *validity*, for a case study, however, it depends on how well the case study fares in that context. Furthermore, there are four types of validity: *measurement validity*, *internal validity*, *external validity*, and *ecological validity*. As Bryman mentions, there are different opinions upon whether the research design criteria are appropriate for the evaluation of the case study research from researcher to researcher, and whether they feel it is appropriate. This is often seen whether it is a qualitative or quantitative research strategy that has been used for a case study, and it is often seen that case study research that orientates primarily with a qualitative research strategy tends to play down or ignore the salience of these factors, whereas those with a quantitative research strategy tends to depict those as more significant (Bryman, 2012). Bryman mentions that especially *external validity*, or *generalizability*, has been part of the discussion and the centred concern for case studies, as how can a single case study be a representative and yield findings that can be applied to other cases generally. And he has a point, as the nature of a case study is, indeed, as the term says itself a case, and therefore cannot be generalised.

Within the theory about case study, there are considered to be five different kinds of types of cases. Those are defined as: The *critical case*, the *extreme or unique case*, the *representative, typical, or exemplifying case*, the *revelatory case*, and the *longitudinal case* (Bryman, 2012). The *critical case* is where "the researcher has a well-developed theory, and a case is chosen on the grounds that it will allow a better understanding of the circumstances in which the hypothesis will and will not hold" (Bryman, 2012, p. 70). The *extreme or unique case* is often the common focus in clinical studies. The *representative, typical, or exemplifying*[14] case is when the focus is about representativeness and typicality in everyday life, but also as an example of a broader category. There can be several reasons for this kind of case, such as classic community, and key social processes. The *revelatory case* is about getting to observe and analyse a phenomenon that have not been accessible before in scientific investigation. The *longitudinal case* is about

[14]This is the Bryman's preferred description of that kind of case. Bryman, 2012, p. 70

affording the opportunity to be investigated at two or more junctures with a longitudinal element but also over time. Bryman (2012) further says that a case study "can involve a combination of these elements, which can best be viewed as rationales for choosing particular cases" (p. 71). One of the standard criticisms there are of the case study is that findings deriving are unable to be generalised, as the presented evidence is limited due to restricted external validity (Bryman, 2012).

The case study can be used as an intensive analysis, as it can aid in generating an intensive examination of a single case, which is engaged in a theoretical analysis as "the central issue of concern is the quality of the theoretical reasoning" (Bryman, 2012, p. 71). That concern includes if the data supports theoretical arguments that are generated, if the theoretical analysis is incisive, cannot demonstrate connections between the different conceptual ideas developed from the data. Whether or not how well the researcher generates theory from the findings is the crucial question, not if the findings can be generalised to a wider universe (Bryman, 2012). That kind of view of generalisation is called either analytic or theoretical generalisation (Bryman, 2012), and such view firmly places case study research in the inductive tradition of the relation between theory and research. The case study can also be associated with both theory generation and theory testing as well.

Case study research can also frequently include a longitudinal element, if the researcher often is a participant of an organisation or member of a community for a long time, like months or years, or conducting interviews with individuals over a lengthy period of time. However, "the researcher may be able to inject an additional longitudinal element by analysing archival information and by retrospective interviewing" (Bryman, 2012, p. 71). The longitudinal element can also occur when a studied case is returned to at a later stage.

A comparative design can also be used for a case study research design and can be used in both a quantitative and qualitative research. The comparative design can be used when "studying two contrasting cases using more or less identical methods. It embodies the logic of comparison, in that it implies that we can understand social phenomena better when they are compared in relation to two or more meaningfully contrasting cases or situations" (Bryman, 2012, p. 72). Other kinds of comparative design are cross-cultural, and cross-national research.

I have chosen to use case study for this thesis, as I have chosen Aalborg Airport and Copenhagen Airport as subjects for my research. As these airports are geographically close to me, I will apply qualitative methods to collect data, specifically field data collection and website content analysis. I furthermore see the case study of Aalborg Airport and Copenhagen Airports as an example of critical analysis, but also as an intensive

analysis of current circumstances in regard to themes of sustainability, plastic waste handling, and the first two Zero Waste principles of refuse and reduce.

4.3. Qualitative method

For my thesis I am using qualitative methods, specifically field data collection and website content analysis, to map the progress of implementing Zero Waste principles, as well as the state of innovation at Aalborg Airport and Copenhagen Airport.

4.3.1. Field data collection

Before gathering data for a content analysis, any social research investigation has a relationship between images and analysis (Banks, 2018). There are three basic points to consider as in "qualitative research the images are usually the subject of research and some kind of analysis will be performed on them" (Banks, 2018, p. 44). The first point concerns the analytical approach taken towards the image, the second concerns about the method employed to derive data for the analysis, and the third is about the concern of the kind of issue being analysed (Banks, 2018). As Banks adds, these points can also be applied for both images and non-images. Banks (2018) also adds that "the analytical orientation of the researcher may well dictate the nature of field research conducted – if any" (p. 68). Visual method does not necessarily have to include human subjects and can be "a brief foray to gather data, for subsequent content analysis, may require little time and little or no interaction with human subjects" (Banks, 2018, p. 68). A strength of visual methodologies lies in the open-ended nature of inquiry, which can provide a range of alternative paths of inquiry. Visual methodologies also have an exploratory and revelatory character to it as well (Banks, 2018).

According to Banks (2018) there are three methods within visual methods in the field and those are photo-elicitation, making pictures, and collaborative projects. The one that is relevant for the thesis is making pictures, as I will visit both Aalborg Airport and Copenhagen Airport to learn about the actual handling of beverages and food to-go for the visitors.

4.3.2. Website content analysis

In website content analysis there are three different approaches according to Schneider & Foot (2004). They mention how the three approaches are "not necessarily mutually exclusive, and some studies cited below employed more than one approach" (p. 116). "Distinguishing between these approaches helps to

establish the trajectory of web studies; highlighting the strengths and weaknesses of each focuses attention on the methodological challenges that are associated with the field of web studies" (Schneider & Foot, 2004, p. 116).

The first approach is *discursive* or *rhetorical* analyses of websites. This approach is concerned with content of a website rather than its structuring elements. A study employing this approach focus on "texts and images that are contained on webpages, and/or on webpages/websites as texts in a Foucauldian sense" (Schneider & Foot, 2004, p. 116). The strength of the discursive/rhetorical approach is to take the broad views of what constitutes text and contribute significantly to understand the communicative phenomena. The weakness is in regard to the inseparability of form and content in traditional media and overlooking the structuring elements of a webpage or site, which are also limited. In prolongation of this, there is also a limitation in "paucity of analytical tools for making sense of the links among webpages and between websites" (Schneider & Foot, 2004, p. 116). Some studies using this approach has also included hypertext intertextuality including analyses of cross-site linking, however, most content-focused studies tend to reflect and perpetuate in what is believed as "an inadequate construction of the web as merely a collection of texts" (Schneider & Foot, 204, p. 117). The points or texts on a webpage/website is seen as primary and the links between them as mere connectives, as well as associative relations that either change, redefine, and provide an enhanced or restricted access to the information they are compromising, and is just as important as texts as it is widely recognized that "connectivity matters just as much as content" (Scheider & Foot, 2004, p. 117).

The second approach is *structural* or *feature* analyses of website. This approach uses individual websites as the unit of analysis as the focus is on the structure of the site which includes the number of pages within the site and the hierarchical ordering and found features such as the presence of a search engine, privacy policy, or multiple navigation options (Schneider & Foot, 2004). The strength of this approach is that it helps understanding the importance of a website's structural and feature aspects, however, the primary concern with this is the lack of not affording systematic analysis of an individual site's situatedness to the external pages it links and are linked to it (Schneider & Foot, 2004). This approach also has "another type of structural analysis employs computer-assisted, macro-level network analysis methods for mapping linking patterns" (Schneider & Foot, 2004, p. 117). This type of approach enables the understanding of network structures on the web but inferring the meaning or 'substance' of those network structures, but it can be difficult to infer from large-scale mapping studies (Schneider & Foot, 2004).

The third approach is *sociocultural* of website. This approach is taking hyperlink relationality into account more nuanced ways (Schneider & Foot, 2004). It also analyses multi-actor, cross-site action on the web.

With this approach an analysis "seek to highlight the attention paid in this genre of web studies to the hyperlinked context(s) and situatedness of websites – and to the aims, strategies and identity-construction processes of website producers – as sites are produced, maintained and/or mediated through links" (Schneider & Foot, 2004, p. 117).

For this thesis I will use the approaches of discursive/rhetorical and structure/feature analysis for my analysis of the websites of Aalborg Airport and Copenhagen Airport. I will mostly focus on what is presented in the text on the website screenshots, but a description of headlines and sub headlines will also be included as well.

5. Analysis

In this section I will analyse my empirical data, that I have gathered for my comparative case study of Aalborg Airport and Copenhagen Airport. The data consists of pictures taken at both airports, as well as the contents on their respective websites about sustainability efforts.

5.1. Aalborg Airport

Aalborg Airport is a rather small airport, which has made it somewhat easy to inspect for the purpose of this research. Only a few minutes separate the check-in counter from the dining area and duty-free zone. Of the three Zero Waste principles, the principle of recycle is the most prominent in Aalborg Airport, but there is room for improvement. The waste bins throughout the airport are very inconsistent in terms of how the waste is sorted. Some bins have clear indicators for food waste and plastic waste, particularly the bins in the dining area, while other bins around the airport have none.

Other visible Zero Waste principles in use at Aalborg Airport are reduce and refuse, as there were several food items served without plastic packaging, such as fruit and bread. Since the airport is small, the food and beverages offered to the visitors are primarily offered by Aalborg Airport's own catering. There is also a gastro pub, a lounge, and a food stand for Penny Lane, but these are privately contracted businesses that operate outside of Aalborg Airport's internally established rules. Penny Lane offers to-go, but I have excluded them from my field data collection research, as I am focused on what Aalborg Airport itself offers and governs. The independent dining areas operate outside of Aalborg Airport's jurisdiction and regulate their own terms and rules of sustainability.

At first glance, sustainability is not even mentioned when scrolling the frontpage of www.aal.dk (Aalborg Airport's website)[15]. However, the tab "Om Aal (About Aal)", at the top of the frontpage reveals "OM OS (ABOUT US)", which features the headline "Bæredygtig omstilling (Sustainable transition)"[16] in its drop-down menu. Despite not having sustainability as a priority front and centre on its website, this shows that that Aalborg Airport does have sustainability in mind[17]. However, the actions towards sustainability is entirely focused on becoming CO_2 neutral by reducing emissions, as based on the UN's 17 world goals for sustainable development, as well as the certification through Airport Council International Europe's Airport

[15] Source: Appendix 3.1.
[16] Source: Appendix 3.2.
[17] Source: Appendix 3.3.

Carbon Accreditation Programme[18]. They explain how they wish to become more climate friendly, all the way from their visitors' first step at the parking lot to the airplane stairs. Aalborg Airport mentions that they have enrolled the international carbon management programme for airports *Airport Carbon Accreditation,* which is a program specific to airports that wish to bring down their CO_2 emissions, to make a difference for the climate[19]. The programme helps identifying several points such as, the sources of emissions at the airport, mapping the CO_2-emissions of the airport, processes of enlargement of efficiency through the neutralisation of CO_2-emissions, and processes for positive impact of the entire aviation industry[20]. There are six levels within the Airport Carbon Accreditation[21], and they are called level 1 "Mapping", Level 2 "Reduction", Level 3 "Optimisation", level 3+ "Neutrality", level 4 "Transformation", and level 4+ "Transition"[22]. Aalborg Airport is currently at level 2 as of 10th of November 2021[23]. Level one is about identifying emission sources and registering their CO_2 emissions, while level two refers to initiatives that are implemented to drop CO_2 emissions over a period of three years. The goal of this is to present a CO_2 policy that actively works with the reduction of CO_2[24]. To reach the level two certification, the airport has worked intensively to address its emission sources, which has been the result of having an ambitious climate strategy and being revised externally so their results are truthful and verified by ACA[25]. The next goal in the programme is to reach level 3+ before the end of 2023[26]. The requirements of level 3 and 3+ are to include all CO_2 emissions from third parties in the reports as well and engage these third parties in actively reducing their CO_2 emissions at the airport, and to compensate for the remaining CO_2 emissions of the airport by using trustworthy and verified CO_2 emissions respectively[27]. Aalborg Airport have introduced numerous small changes that have had great impact, such as replacing about 50% of the fuel drive, 50% of the lightbulbs in the airport, 10% of the light on the forecourt, and 80% of the light bulbs on the flight field to greener alternatives, as well as the implementation of an energy control system[28]. They have gone through an extensive energy screening from a third party, and switched from diesel-driven flight stairs to ones that are electricity driven. Finally, they have commenced an expansion of 12 electric charging stations in the

[18] Source: Appendix 3.6.
[19] Source: Appendix 3.5 + 3.6.
[20] Source: Appendix 3.6.
[21] Source: Appendix 3.7.
[22] Source: Appendix 3.9.
[23] Source: Appendix 3.9.
[24] Source: Appendix 3.7.
[25] Source: Appendix 3.10.
[26] Source: Appendix 3.9.
[27] Source: Appendix 3.7.
[28] Source: Appendix 3.10.

direct parking area[29]. Due to these initiatives, Aalborg Airport has been internationally recognised for their CO_2 reducing initiatives.

Sustainability wise, it is great to see that Aalborg Airport has been putting a lot of effort into becoming a CO_2 neutral airport in the near future. However, it is also somewhat one-sided sustainability efforts, as there is a lot that can be done in more tangible matters. This is where the principles of Zero Waste should be taken into consideration as a potential solution. As written on their website, Aalborg Airport takes sustainability very seriously, and they have plans to directly include the visitors in these initiatives as well – as well as the third parties that is a requirement for the level 3 "Neutrality" certificate they seek. Even though this is outside of my main research area, I think there is great potential for applying the Zero Waste principles of refuse, reduce, and recycle to passenger and third party activities at Aalborg Airport as well.

Having analysed the website of Aalborg Airport, as well as having visited the airport in person, I can conclude that they are still in transition to become more sustainable. In terms of Zero Waste principles and innovation, there is still a lot that can be done, but Aalborg Airport have definitely made some good progress already, when it comes to reducing the use of single-use plastic.

5.2. Copenhagen Airport

Copenhagen Airport is a big international airport that serves millions of people every year. Due to my focus on food and beverages that are served to-go, I have excluded taking pictures of the third party dineries in the airport, as they are outside of my focus, however, a lot of the dineries offered food and beverages to-go as well. These third party dineries made it difficult to determine Copenhagen Airport's stance on reducing single-use plastic packaging for beverages and food, as operate under their own independent rules and regulations for the handling of waste. Copenhagen Airport itself, outside of these third party dineries, has decent recycling options, with bins that are designed to contain different sorts of waste, but there are many inconsistencies, as not all bins have multiple sorting options. In terms of the Zero Waste principles of refuse and reduce, Copenhagen Airport is disappointingly lacking however, with all food and beverages outside of third party dineries being served in plastic packaging, plastic bottles, plastic cups etc.

When examining the website of Copenhagen Airport, it is very clear that the airport is quite concerned with sustainability, as Bæredygtighed (Sustainability) is an easy access point on the bottom of the frontpage[30].

[29] Source: Appendix 3.11. + 3. 12.
[30] Source: Appendix 4.1.

When clicking the easy access point, one is directed to a new page, where the fields of sustainability they are working towards are split into separate categories; Noise and air quality (Støj og luftkvalitet), Climate (Klima), PFAS contaminations (PFAS-forureninger), and Dear Neighbour (Kære Nabo)[31]. Copenhagen Airport describes the fields of sustainability as follows: Noise and air quality is about finding solutions in collaboration between noise and air quality[32], Climate is about making the future of aviation green, both locally and globally[33], PFAS contaminations is about how the airports has fought actively against PFAS contaminations since 2008[34], and Dear Neighbour is an invitation to have an open dialogue about the development of the airport[35]. The four points deepen Copenhagen Airport's ambitions for sustainability. The field of sustainability that is most relevant to my thesis, is the Climate point as Zero Waste and innovation must be considered part of the solution in certain aspects.

The access point with Klima (Climate) starts with the statement that Copenhagen Airport wishes to be an active contributor to the green transition of the aviation[36]. The first statement is that the airport wants to become net zero in 2050 with the climate ambition "net zero airport". This will happen through all the firms that stay at the airport through new technology and innovative cooperations, which is why they have set up three ambitious climate goals based on the efforts of the last several years[37]. After the introduction Copenhagen Airport then presents the three climate goals. The first point is that the airport became certificated CO_2 neutral by the international certification program Airport Carbon Accreditation in 2019, which has been achieved by a focused effort to lower the CO_2 from the operation of the airport and a climate compensation arrangement where the airport via a project contributes with limiting the amount of CO_2 in the atmosphere[38]. Their second goal is that in 2030 the operation of the airport will become net zero. This will include transport to and from the airport, continuation of investment of solar cell system, as well as to include land transport transition within the airport, by reinforcing the recharge infrastructure for electrical vehicles[39]. The third goal is that by 2050, the entire airport and the aviation itself shall become net zero, which encompasses the operation of the airport itself, the air traffic, as well as the corporations that operate at the airport. Strong strategic partnerships throughout the aviation industry, decision makers and researchers are intended to help achieve this goal, as it will focus on greater availability of sustainable

[31] Source: Appendix 4.2. + 4.3.
[32] Source: Appendix 4.2.
[33] Source: Appendix 4.2.
[34] Source: Appendix 4.3.
[35] Source: Appendix 4.3.
[36] Source: Appendix 4.4.
[37] Source: Appendix 4.5.
[38] Source: Appendix 4.6.
[39] Source: Appendix 4.6.

fuel and the development of climate friendly technologies[40]. Before going to the next section, a picture of a departing airplane in the air is seen[41].

After the presentation of the three climate goals, Copenhagen Airport is billed as the lighthouse airport in the EU project ALIGHT, which aims to develop examples over the next couple of years of the development of the future sustainable airport[42]. The project focuses on the creation of infrastructure and sustainable fuels, but also the sustainable accommodation of the whole operation[43].

When clicking on the button "Læs mere om ALIGHT" (Read more about ALIGHT) a new page about the project opens[44]. Three points about the project are presented; "Sustainable aviation fuel", "Renewable energy sources", and "Smart energy"[45]. At the bottom of the side page of ALIGHT one can subscribe to get news from the ALIGHT project, which took off in November 2020, and Copenhagen Airport is one of the 16 European partners working towards zero-emission aviation with this project[46].

Clicking on the headline "Project" there is a single sub headline named "Vision"[47]. Here, a more in-depth description of the vision for ALIGHT is presented, which outlines a desire to have a strong European partnership, and for Copenhagen Airport to become a showcase of a sustainable airport of the future. Then there is a consortium led by Copenhagen Airport that will be a showcase for the way towards carbon neutral aviation in 2050[48]. To tackle this challenge ALIGHT will integrate, first of all, sustainable aviation fuel, and then smart energy in the ground equipment and the energy supply implementation will be demonstrated within Copenhagen Airport[49].

Back at the main page of sustainability the next sub headline is "Luftfartens Klimapartnerskab" (The Aviation Climate Partnership)[50]. Copenhagen Airport is a part of the partnership, which wishes to contribute to the readjustment of aviation to a fully sustainable form of transport[51]. The Danish Aviation Industry, experts and organisations have in cooperation developed a plan of action which can drive a real green

[40] Source: Appendix 4.6. + 4.7.
[41] Source: Appendix 4.8.
[42] Source: Appendix 4.9.
[43] Source: Appendix 4.9. + 4.10.
[44] Source: Appendix 4.10.
[45] Source: Appendix 4.11.
[46] Source: Appendix 4.12.
[47] Source: Appendix 4.13. + 4.14.
[48] Source: Appendix 4.13 + 4.14.
[49] Source: Appendix 4.14.
[50] Source: Appendix 4.15.
[51] Source: Appendix 4.15

accommodation of the aviation industry and will help Copenhagen become net zero in 2050[52]. Below are five points "Vores bæredygtige rejse" (Our sustainable travel), "Bæredygtige initiativer i CPH" (Sustainable initiatives at CPH)," Luftfartens Klimapartnerskab" (The Aviation Climate Partnership), "Udvikling af fremtidens bæredygtige brændstof" (Development of the future's sustainable fuel), and "Fordeling af den samlede CO2-udledning i Københavns Lufthavn" (Distribution of the total CO2 emission at Copenhagen Airport)[53].

The first point is divided into three sub headlines "Vores rejse mod at blive net zero lufthavn i 2050" (Our journey towards to become net zero airport in 2050), "Net zero drift i 2030" (Net zero operation in 2030) and "Totalt emissionsfri lufthavn i 2050" (Totally emission free airport in 2050). The first sub headline describes when and what has been done so far to become net zero in 2050[54]. The second sub headline is about that the next goal is the whole operation of the airport, except the airplanes, but inclusive the land transport to be net zero without climate compensation, a need for continuation of promotion of green accommodation at the airport, more actions that is even more energy saving, being a part of the EU project ALIGHT, and to keep the competitiveness to deliver the infrastructure for the planes of the future of any type[55]. The third sub headline is about the involvement Copenhagen Airport has with totally becoming emission free, which includes being a part of NISA[56], and co-initiator at Green Fuel For Denmark, which similarly to NISA, is about producing big-scale sustainable fuels[57].

The second sub headline is "Bæredygtige initiativer i CPH" and it has two sub headlines which are "Gennemførte initiativer" (Completed initiatives), and "Fremtidige initiativer" (Future initiatives)[58]. They quite simply mention a lot of the sustainable energy initiatives that has already been done in numbers, but also a few that has not already been mentioned due to their own initiatives and projects[59], and what they would like to do in the coming years[60].

The third sub headline is "Luftfartens Klimapartnerskab" is divided into two further sub headlines, "En samlet plan for luftfartens bæredygtige omstilling" (An overall plan for the sustainable accommodation of the aviation), and "Handlingsplanen er bygget op om fire helt centrale initiativer." (The action plan is built

[52] Source: Appendix 4.15. + 4.16.
[53] Source: Appendix 4.15 + 4.26.
[54] Source: Appendix 4.17.
[55] Source: Appendix 4.18+4.19.
[56] Nordic Initiative for Sustainable Aviation. Source: Appendix 4.19 + 4.20.
[57] Source: Appendix 4.19 + 4.20.
[58] Source: Appendix 4.21 + 4.22.
[59] Source: Appendix 4.21.
[60] Source: Appendix 4.22.

around four central initiatives:)[61]. The first one is mostly a repetition of what has already been said, however, it also mentions that to create a sustainable and competitive Danish aviation equally to aviation in Asia, USA and the rest of EU, needs to be done by having a sustainable accommodation, and that is ought to be a competitive parameter to fly sustainably[62]. The other sub headline is about the action plan and it has four points mentioning what has to be done, and those are called "Sikre tilgængeligheden af bæredygtigt flybrændstof" (Secure availability of sustainable aviation fuel)[63]. "Nationale handlingsplaner for forsyningskæden" (National action plans for the supply chain)[64], "Luftfartens Klimafond skal skabe grundlaget for efterspørgslen på bæredygtigt flybrændstof" (The Aviation Climate Fund must create the demand for sustainable aviation fuel)[65], and "Danmark skal engagere sig internationalt" (Denmark must engage internationally)[66].

The fourth sub headline is "Udvikling af fremtidens bæredygtige brændstof" (Development of the future's sustainable fuel) and has four sub headlines: "Partnerskab om produktion af bæredygtigt brændstof i Hovedstadsområdet" (Partnership about production of sustainable fuels in the Capital Area), "Bæredygtige brændstoffer er dyrere end fossile" (Sustainable fuels are more expensive than fossil), "Mulighed for ny dansk styrkeposition inden for vedvarende energi" (Possibility for new Danish strength position within renewable energy), and "Tidslinje" (Timeline). The first sub headline is about how Copenhagen Airports and a wide range of companies with interest in sustainable fuel has joined together in a unique partnership with a concrete vision of developing a production plant for hydrogen and sustainable fuel in the area of Copenhagen already from 2023 and when fully built in 2030[67]. The production will potentially make it one of the biggest plants of its kind and to become catalysator for similar projects other places in Denmark and internationally [68]. The second sub headline is about what has to be done in order to make sustainable fuels cheaper than fossil, which means that the production needs to be matured and expand on an industrial scale and costs must be reduced, however that demands of governments and industries to create framework conditions to promote private investments of the production of sustainable fuels on a large scale[69]. The third sub headline is about how Denmark is in a unique position to become the centre of sustainable fuel production, create workplaces and taking the lead of creating of a new industry that will be

[61] Source: Appendix 4.23. + 4.24.
[62] Source: Appendix 4.23.
[63] Source: Appendix 4.24.
[64] Source: Appendix 4.24.
[65] Source: Appendix 4.25.
[66] Source: Appendix 4.25.
[67] Source: Appendix 4.26.
[68] Source: Appendix 4.26. + 4.27.
[69] Source: Appendix 4.27.

beneficial for reducing CO_2 in 2050 for not only Denmark, but also globally[70]. The fourth sub headline is a timeline for the production of sustainable fuel and sums up some of the points that has just been mentioned in this sub headline[71].

The fifth sub headline is about the distribution of the total CO_2 emissions from Copenhagen Airport and is divided into two sub headlines "Københavns Lufthavns egen udledning" (Copenhagen Airport's own emissions) and "Københavns Lufthavns indirekte udledning" (Copenhagen Airport's indirect emissions)[72]. In the first sub headline they mention that the airport has managed to become CO_2 neutral in 2019 by using direct control of what they have of emissions which equals to 7% of the total emissions from the airport itself[73]. Then it is told that of the 7% of the total emissions 89% is from the consumption of energy, especially from electricity and heat energy[74]. The airport works with energy optimisation and conversion into renewable energy sources has a crucial importance for the importance of reducing CO_2 emissions[75]. The second sub headline mentions the great ambitions Copenhagen Airport has for the adaptation into a more climate friendly airport and airport traffic, as their climate strategy is focused on the indirect part of emissions[76]. The business partners of Copenhagen Airport account for 9% for the emissions, and visitors and coworkers of the airport transportation to and from the airport account for 10%[77]. The biggest emissions come from the fuel consumption of the planes, motor drives, auxiliary engines and main engines, which all together account for 74% of the total emissions[78]. Copenhagen Airport further acknowledges that their responsibility is first foremost the activities that are under their control, however, they have a great interest in influencing and contribute a green transition for their visitors, customers, and business partners activities that is outside their direct control and is a concrete goal in having an emission free aviation in 2050[79].

Past the section with Luftfartens Partnerskab, a blue box presents information about the energy management; Copenhagen Airport has since 2019 been working on a goal oriented climate strategy, where

[70] Source: Appendix 4.28.
[71] Source: Appendix 4.28.
[72] Source: Appendix 4.29 + 4.30.
[73] Source: Appendix 4.29.
[74] Source: Appendix 4.29. + 4.30.
[75] Source: Appendix 4.30.
[76] Source: Appendix 4.30.
[77] Source: Appendix 4.30.
[78] Source: Appendix 4.30.
[79] Source: Appendix 4.30.

a part of the goals were to secure an ISO 50001 certificate via energy management and energy governance, which they succeeded with in 2021[80].

Before the next section there is a picture of Copenhagen Airport seen from above[81].

The next section is called "Partnerskab om production af bæredygtigt brændstoft I Hovedstadsområdet" (Partnership about production of sustainable fuels in the Capital Area)[82]. In this section, the logos of the partners of the association are listed; SAS, A.P. Møller – Maersk, DSV Panalpina, Nel Hydrogen, CPH, Everfuel, DFDS, Haldor Topsoe, Ørsted[83]. A small text underneath simply mentions the name of the partners and their vision, the building of a production plant for hydrogen and sustainable fuels starting in 2023 and expected to be fully built in 2030 and being able to provide more than 250.000 tonnes of sustainable fuels for airplanes, busses, lorries, and ships[84].

At the end of the subsection of Climate within the Sustainability pages one can read more about other climate initiatives on "Energieffektive komfurer i Laos" (Energy efficient stoves in Laos), "CO2-neutral lufthavn" (CO_2 neutral airport), "Bæredygtig landtransport" (Sustainable land transport), and "Emissionsfri luftfart" (Emission free aviation).

5.3. Similarities

Both Aalborg Airport and Copenhagen Airport primarily serve beverages and foods in plastic packaging[85] or in a mixed packaging where plastic is included[86], though some are in more recycle friendly packaging, such as glass[87], aluminium[88], or paper[89]. It is clear to my research of both airports that there are some challenges that goes beyond the airports themselves, in regard to how beverages and foods are packaged. The efforts to use the Zero Waste principles of refuse and reduce is difficult for both, as they are difficult to imply in a system that is not made to handle beverages and foods in bulk to-go. Another similarity at the airports is

[80] Source: Appendix 4.31.
[81] Source: Appendix 4.32.
[82] Source: Appendix 4.33.
[83] Source: Appendix 4.33., 4. 34., 4.35.
[84] Source: Appendix 4.35.
[85] Source: Appendix 1.1., 1.3., 1.7., 1.9., 1.10., 1.11., 1.13., 1.15., 1.17., 1.18., 1.19., 1.22., 1.23., 1.26., 1.30., 1.33., 1.34., 1.44., 2.5., 2.6., 2.7., 2.9., 2.10., 2.11., 2.13., 2.14., 2.15., 2.16., 2.17., 2.18., 2.19., 2.20., 2.21., & 2.22.
[86] Source: Appendix 1.6., 1.8., 1.10., 1.12., 1.13., 1.14., 1.15., 1.16. 1.18., 1.20., 1.21., 1.22. 1.24., 1.27., 1.30., 1.32., 1.33., 2.5., 2.6., 2.7., 2.8., 2.9., 2.11., 2.12., 2.13., 2.14., 2.15., 2.16., 2.19., 2.20., & 2.22.
[87] Source: Appendix 1.2., 1.7., 1.22., 1.24., 1.25., 1.25., 1.30., 1.33., 2.6., 2.15., 2.18., & 2.19.
[88] Source: Appendix 1.3., 1.7., 1.34., 2.6., 2.10., 2.11., 2.13., 2.14., 2.18., 2.20., & 2.21.
[89] Source: Appendix 1.23., 1.27., 1.28., 1.29., 1.33., 1.34., 2.6., 2.12., 2.15., & 2.22.

their implementation of Zero Waste principle recycle. At some parts of the airports, it is clear that both want their visitors to properly sort and recycle their waste while at the airport, however, this practice is rather inconsistent, as I witnessed several bins after check-in, which did not aim to properly sort the generated waste[90]. Other bins placed around the airport do offer proper sorting of waste however[91]. When looking at the first two Zero Waste principles of reduce and refuse a lot can be done at both Aalborg Airport and Copenhagen Airport. Particularly in terms of beverages, as they widely are served in plastic bottles and cups. Since Denmark has a well-developed deposit system, it seems incomprehensible why the airports have not installed such systems, instead of waste bins.

An analysis of both the Aalborg Airport website and the Copenhagen Airport website reveal, that they both have in common that they work toward minimizing CO_2 emissions. They also both intend to focus on being energy sufficient. They both mention and show long lists of which initiatives they have implemented, as well as those they wish to introduce in the future, such as the use of LED light bulbs[92]. Being a part of the Airport Carbon Accreditation has improved both of the airports' reduction of CO_2 emissions and energy improvement[93].

Both airports are also in some kind of cooperation with other companies to develop and produce more sustainable fuel for airplanes[94].

But the refusing and reducing of single-use plastic for beverages and food is non-existing in their view of what sustainability is, which could be a vital part of a sustainable transition. Refusing and reducing single-use plastic is a powerful way to help not polluting human bodies and nature, but because our society is dependent on easy and practical solutions with plastic as lightweight packaging, it is difficult to change. It is also only in recent years that plastic has been discovered in remote places of the planet, which indicates the severity of the problem. Through innovative policies, the airports can put a pressure on the great amount of single-use plastic used during travel. As a tourist, one has very limiting choices of how to contain beverages and food that is also not too heavy to carry for longer trips.

[90] Source: Appendix 1.35., 1.37., 1.39., 1.41., 1.42., 2.3., 2.23.
[91] Source: Appendix 1.38, 1.40., 2.1., 2.2., 2.4.,2.24., 2.25, 2.26.
[92] Source: Appendix 3.10.
[93] Source: Appendix 3.4., 3.5., 3.6., 3.10., 3.11., 4.6., 4.10., 4.11., & 4.15.
[94] Source: Appendix 3.12. & 4.26.

5.4. Differences

As opposed to Copenhagen Airport, Aalborg Airports has several food options to-go that are served entirely without packaging, such as various sorts of fresh food, fruit and bread[95]. Since Aalborg Airport is significantly smaller than Copenhagen Airport, they seem better equipped to micro-manage the food and beverages they offer their visitors to-go, since they are offered in their own establishment. Copenhagen Airport on the contrary, serves many times the amount of visitors Aalborg Airport does and has a wide arrange of both national and international third party business partners, who operate under their own terms and rules. This makes it much harder to enforce a centralized policy on packaging, as it interferes with third party policies.

The analysis of the websites shows that the clearest difference between the two airports is that the bigger the airport is, the bigger their focus on sustainability is. Copenhagen Airport has far more ambitious goals and procedures in action than Aalborg Airport. The fact that Copenhagen Airport is part of the EU project ALIGHT speaks volumes about how seriously they take sustainable development[96]. Aalborg Airport is a small airport that is rapidly growing and expanding however, so it is commendable that they too acknowledge the importance of having a sustainable transition.

In terms of actively limiting emissions, Copenhagen Airport differentiates between their own emissions, which they are in control of, as well as the indirect ones that comes from their business partners, coworkers, and visitors while visiting the airports. Even the emissions that are not within the direct control of Copenhagen Airport, they wish to influence, in order to become an emission free aviation by 2050[97].

A third difference between the sustainability plans for the two airports, is that Aalborg Airport mentions the UN's 17 world goals for sustainable development[98] whereas Copenhagen Airport does not.

Another difference is that Copenhagen Airport itself has been CO_2 neutral since 2019, which Aalborg Airport still strives to become.

[95] Source: Appendix 1.10., 1.28., 1.29., 1.31., 1.34.
[96] Source: Appendix 4.18.
[97] Source: Appendix 4.30.
[98] Source: Appendix 3.7.

6. Discussion

In this section, I will pick up where my analysis ended and discuss ideas that Aalborg Airport and Copenhagen Airport can introduce to improve their sustainability record, specifically in regard to the handling of plastic waste.

As mentioned earlier, the heavy representation of plastic in Aalborg Airport and Copenhagen Airport is difficult to change, as long as we live in a relatively plastic-friendly society, where plastic-use is as prevalent as it is. It is largely an issue that is down to governments to resolve through policies and governance. There is only a limited number of actions a single conscious consumer can do to improve this, but these are important actions, nonetheless. Consumers have greater power in large numbers, but the weight of the power that a consumer has on becoming sustainable is remarkably lower than that of governments and companies. In tourism, it is great to see that airports actively are working towards a sustainable transition, but this transition brings more benefits for the airports themselves than the visitors. Visitors will not directly be affected by the reduction of CO_2 emissions, nor the implementation of renewable energy sources. Those are very important for sustainability within tourism, but my focus has been on more tangible matters – specifically the limitation of plastic-use, which more directly affects visitors.

Innovation should be the desired way to lead a sustainable transition, as it is about always striving to do things better and more efficiently than they are being done currently. However, innovation should not only be considered in terms of new technologies, as innovation can take many shapes and forms. Innovation is important because it brings new ideas to how things can be done. When it comes to the handling of packaging of beverages and foods, there is much that can be done to eliminate plastic. Specifically in this case, I am concerned with the prevalence of plastic in airports, which is beyond the control of the visitors. Even when the Zero Waste principle of recycling is taken into consideration, plastic is still problematic, but it requires a different field of innovation altogether to solve that problem. What Aalborg Airport and Copenhagen Airport can do however, is place an outright ban on plastic altogether, and replace it with alternatives. Since airports are so particular in terms of its rules and laws for security reasons, travellers do not have the same options for sustainable actions as they do when they are not passing through airports. Aalborg Airport and Copenhagen Airport could completely innovate their policy on packaging, by introducing multi-use airport-certified containers, bottles and cups made out of other materials than plastic, and with multi-use purposes. Think of an item that you can bring to every airport you travel to in the future, without having to resort to single-use plastic containers, bottles and cups. Aalborg Airport and Copenhagen Airport could further refuse and reduce plastic by implementing dispensers for both foods and beverages in the airports, at which travellers can make use of their non-plastic containers. Think of it like a

bulk store, in which the conscious consumer brings their own container to buy just the right amount of the goods they need, completely circumventing the dependency on plastic. At least bio-degradable alternatives to plastic packaging should be considered, of a transition to bulk store-like initiatives is not currently possible.

Zero Waste might only have become a known term in the past decade or so, but the ideas behind the five principles are much older. The idea behind Zero Waste is essentially to generate as little waste as possible. I am well aware that waste can never be eliminated completely, but there can be done much to limit plastic waste, which is particularly harmful to the planet. Zero Waste is in itself not perfect either, but a lot of inspiration can be drawn from the movement. I see tremendous potential for airports to tap into the Zero Waste movement and their core principles. Whether Zero Waste initiatives are being implemented during a person's mundane state, or when they find themselves in a liminal state as a traveller moving through an airport, they can be considered a viable solution to a problem that exists in both states.

7. Conclusion

In this section, I will conclude on my research, but answering the research questions I asked in the introduction, which then will provide me the knowledge to answer my problem formulation.

Why is plastic waste an issue?

Overall, there is no doubt that plastic waste is an issue, as micro plastic is emerging even in remote natural places with little to no human interference, as well as in the human body itself. The effects that micro plastic have on human bodies, specifically how it will affect our health, is still largely unknown, but it is for sure concerning, as we witness its' devastating effects on wildlife and the environment. The recycling of plastic waste is largely unsatisfactory, as a lot of it ends up in landfills, which leads to horrifying contamination and pollution.

In what areas does Aalborg Airport succeed with sustainability initiatives, and in what areas does it fail?

Aalborg Airport has had a lot of success with bringing down their CO_2 emissions, improving their energy sources, and investing in green fuels. They also present their visitors with a decent selection of food that is not wrapped in single-use plastic packaging, as well as giving their visitors the opportunities to sort their waste. Recycling is inconsistent and inadequate, however. Aalborg Airport also fails to implement the Zero Waste principles of refuse and reduce, which specifically aims to eliminate plastic altogether, as most beverages and food to-go options are sold in single-use plastic packages.

In what areas does Copenhagen Airport succeed with sustainability initiatives, and in what areas does it fail?

Copenhagen Airport has had a lot of success with becoming CO_2 emission free in 2019, improving their energy sources, and investing in green fuels. Like Aalborg Airport, they too give their visitors decent opportunities to sort their waste, but just like in Aalborg Airport, these options are inconsistent and inadequate as well. Copenhagen Airport also fails to implement the Zero Waste principles of refuse and reduce, as most beverages and food to-go are in single-use plastic packages.

How do the two airports compare?

Aalborg Airport and Copenhagen Airport have very similar approaches to sustainability, but none of them seem too concerned with the five principles of Zero Waste, which I think is an area in need of desperate improvement.

What can Aalborg Airport and Copenhagen Airport do to improve, or innovate, sustainability?

There is so much that can be done to eliminate the use of plastic in Aalborg Airport and Copenhagen Airport, and these improvements can be done with relatively simple initiatives. I would suggest both airports to implement more Zero Waste principles in all areas of maintenance, to vastly reduce the utilisation of plastic, which in turn will reduce the production of plastic waste. Vastly refusing and reducing plastic would not just be a great example for other airports to follow, but it would lead the way for a better future.

8. Bibliography

Banks, M. (2018). Using visual data in qualitative research (2nd edition Edition). SAGE Publications Ltd. https://doi.org/10.4135/9781526445933

Baxter, G., & Srisaeng, P. (2022). OPTIMIZING AIRPORT SUSTAINABLE WASTE MANAGEMENT FROM THE USE OF WASTE-TO-ENERGY TECHNOLOGY AND CIRCULAR ECONOMY PRINCIPLES: THE CASE OF LONDON GATWICK AIRPORT. International Journal for Traffic & Transport Engineering, 12(2).

Baxter, G., Srisaeng, P., & Wild, G. (2018). Sustainable airport waste management: The case of Kansai international airport. Recycling, 3(1), 6.

Bryman, A. (2012) Social Research Methods 4th Edition, Oxford University Press

Carrington, D, 24 March 2022, Microplastics found in human blood for first time, The Guardian. Link: https://www.theguardian.com/environment/2022/mar/24/microplastics-found-in-human-blood-for-first-time

Carrington, D., 7 October 2022, Microplastics found in human breast milk for the first time, The Guardian. Link: https://www.theguardian.com/environment/2022/oct/07/microplastics-human-breast-milk-first-time

Cooke, E., & Bernheim, A. (2022). Beyond zero: Activating triple zero airports. Journal of Airport Management, 16(2), 173-183.

Fayos-Solà, E. & Cooper, C. (2019). The Future of Tourism Innovation and Sustainability (Fayos-Solà & C. Cooper, Eds.; 1st ed. 2019., p. 325-337). Springer International Publishing. https://doi.org/10.1007/978-3-319-89941-1

Guba, E. G., & Lincoln, Y. S. (1994). Competing Paradigms in Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research (pp. 105–117).

Greer, F., Rakas, J., & Horvath, A. (2020). Airports and environmental sustainability: a comprehensive review. Environmental Research Letters, 15(10), 103007.

Jonson, B (2013). Zero Waste Home: The Ultimate Guide to Simplifying Your Life by Reducing Your Waste. Simon & Schuster. p. 14-15.
https://books.google.dk/books?id=ejDAo6krWJIC&printsec=frontcover&hl=da&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Nicolas, A, 5 Mach 2020. Meet the newly discovered ocean species: plastic. World Wild Life. Link: https://www.worldwildlife.org/stories/meet-the-newly-discovered-ocean-species-plastic

OECD.org, 22/02–2022. Link: https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm

Parameshwar, H. K. (2011, December). Solid waste management in airports: A case study of Bangalore International Airport. In International Conference on Green technology and environmental Conservation (GTEC-2011) (pp. 152-158). IEEE.

R.M. Sebastian, J. Louis, (2021) Understanding waste management at airports: A study on current practices and challenges based on literature review, Renewable and Sustainable Energy Reviews, Volume 147, 111229, ISSN 1364-0321, https://doi.org/10.1016/j.rser.2021.111229.

Sreenath, S., Sudhakar, K., & Yusop, A. F. (2021). Sustainability at airports: Technologies and best practices from ASEAN countries. Journal of environmental management, 299, 113639.

Özbay, İ., Gokceviz, N.A. (2022) Towards zero-waste airports: a case study of Istanbul Airport. J Mater Cycles Waste Manag 24, 134–142. https://doi.org/10.1007/s10163-021-01308-2