Haaga-Helia
University of Applied Sciences

Public attitudes towards aviation in Denmark, Finland, Norway and Sweden

Sanna Kallio

Bachelor's Thesis
Degree Programme in Aviation
Business
2020

Haaga-Helia
University of Applied Sciences

Abstract

30/05/2020

Author
Sanna Kallio

Degree programme
Aviation Business

Report/thesis title

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Number of pages and appendix pages
46 + 12

The aim of this study is to examine the public opinion towards aviation in the Nordic countries, focusing on the environmental issues of flying and the gender balance in jobs in the aviation industry, before the COVID-19 outbreak.

The aviation industry has grown rapidly in the last decade, and the growth is estimated to continue for at least another decade. With the growing number of flights and passengers, the environmentally harmful emissions of the aviation industry have also grown, albeit at a slower pace. The aviation industry is also stuck on very traditional gender roles which slow down the gender equality in the industry.

The data for this study has been collected using an online survey conducted over several months, several interviews for people both in the industry and outsiders and a collection of literary sources.

Keywords
Public opinion, Aviation, Environment, Nordic countries

Table of contents

1 Introduction

This study examines the public attitudes towards aviation in the Nordic countries: Finland, Sweden, Norway and Denmark, with a focus on the environmental effects of flying, the taxation of aviation, gender balance in different jobs in aviation and how aviation is presented in media. While the public opinion towards aviation has been asked about before, no research specific to the Nordic countries has been made.

In order to find out how residents in the Nordic countries view the aviation industry, a survey was used. The survey was modelled after a survey that was conducted in several central European countries in 2018. Interviews were also used to verify the data collected in the survey.

The first part of the document examines the effects of aviation for the environment and how the emissions of aviation compare to those of other modes of transport. The two significant emissions control schemes are also presented.

The second part studies how aviation is taxed in different Nordic countries and the correlation between increased aviation taxes and demand for aviation.

In the third part of the report, differences in how men and women are employed in the aviation industry are brought to light, along with initiatives supporting gender equality in aviation.

The final theoretical part is about how aviation is presented in media, both traditional media and social media, which has gained a lot of popularity in the last decade.

The theoretical framework is followed by the methodology of the survey and interviews that were conducted to collect data for the research, which is then followed by an analysis of the collected data, and a discussion of the entire thesis process.

2 Effects of aviation for the environment

Currently, aviation is producing about 2% of the world's Co2 emissions, and Co2 and water vapour make up 7%-8% of the emissions of an aircraft. The other greenhouse gases produced by airplanes are unburned hydrocarbons, carbon monoxide and sulphur oxides, about around 0.03% nitrogen oxides, traces of hydroxyl family and nitrogen compounds and small amounts of soot particles, even though the soot particles have been reduced radically by the industry. In the end, nitrogen and oxygen make up between 91.5% and 92.5% of aircraft engine emissions. (ATAG)

The contrails of aircrafts also have an effect on the environment, but it is not known whether that effect is cooling down or warming up the planet. The effect is under investigation, with the assistance of the industry. Another effect to consider is how altitude of the emissions affects their effect on global warming. It has been proven that the impact of Co2 is not changed in higher altitudes, but the impact of other greenhouse gases present in aircraft emissions has been proven in increase in higher altitudes. (ATAG)

Taking into account the higher altitude in which most of the aviation industry's emissions are emitted has led to research suggesting that the Co2 emissions of aviation should be multiplied by 1,9 to take into account the increased impact of other greenhouse gases. This multiplication changes the total percentage of greenhouse gases produced by aviation to around 3%. However, other sectors produce other gases as well, and multipliers are not used when discussing the environmental impact they have. (ATAG)

2.1 The past, the present and the future of aviation

Aviation is one of the fastest growing industries in the world. Since the 1950's, the industry has grown at a steady pace, surviving multiple crises including the 9/11 terrorist attack on the Twin Towers in 2001 and the worldwide financial crisis of 2008-2009. (ICAO)

In the early days of aviation, flying was considered a luxury only a few could afford. Nowadays, especially in the western world, flying is becoming a more everyday occurrence. It has been forecasted that the number of airline passengers would be increasing steadily until 2030, with new markets emerging in China, Latin America and Africa, and would thus be creating more demand for aviation professionals. It is estimated that in 2036 there would be 7,8 billion airline passengers worldwide, when, according to IATA, in 2019 the number of passengers was just below 4,5 billion. (AIAA, 2020)

Globally, the aviation industry employs directly over 10,2 million people, and supports over 65,5 million jobs worldwide through different stakeholders and the supply chain. If the aviation industry was a country, it would rank 20th on the global scale, similar to Argentina and Switzerland (ATAG).

While aviation has been growing at around 5% per year, the emissions of aviation have only grown at a yearly pace of 2,5%. This is due to measures taken by the industry to keep the emissions low, and it has been said that a flight today will only produce 50% of the Co2 emissions the same flight produced in 1990. This is largely due to each new generation of aircraft being up to 20% more efficient than the previous generation. (ATAG).

2.2 Aviation compared to other methods of transport

The aviation industry makes up for 2% of all the world's human-induced Co2 emissions globally (ATAG, 2020), and about 12% of all transport-related Co2 emissions (ATAG 2020), of which road transport makes up for nearly 75% railways only 2% (IEA, 2019). Maritime transport roughly makes up 2-3% of all greenhouse gas emissions worldwide (European Commission, 2019).

Out of the Finnish greenhouse gas emissions related to transport, road transport makes up for over 90% of all the emissions, while aviation is accountable for 2%, rail transport for 1% and transportation by boat for 4% of all transport-related emissions. Transportation itself is accountable for about 20% of all Finnish greenhouse gas emissions. (Liikennefakta, 2020).

2.3 EU ETS

The European Union's Emissions Trading System, or ETS, is an EU-wide system which aims to reduce pollution. With the ETS in place, polluters need to acquire allowances for the emissions they cause. Some of the permits are given for free, but if the company uses up all their allowances, they need to acquire more permits from companies not using all their permits, or from an auction. The number of permits is controlled by the EU and eventually reduced, leading to the reducing of emissions. (European Commission).

The ETS used to cover all flights to and from a European airport, but it has since been reduces to only include flights within Europe, due to ICAO working on CORSIA, a global

emission reducing scheme (Transport & Environment). The total emission from aviation have increased by 1,5% in 2019, under the ETS, while other sectors covered by the scheme reduced their emissions by 8,9%, which is increasing the amount of the EU total emissions that aviation is responsible for (Transport & Environment, 2020).

2.4 CORSIA

CORSIA, short for Carbon Offsetting and Reduction Scheme for International Aviation, is a global carbon offsetting scheme by ICAO. First decided upon in 2016, it makes aviation the first industry which has its own carbon offsetting scheme. In 2019 and 2020 the scheme has been in development, collecting data on the emissions and setting the base for a carbon neutral growth from 2020 onwards. (ICAO)

The pilot phase for CORSIA will begin in 2021, and the first part will be running from 2024 to 2026. The first phases will be voluntary for countries to participate in, but from 2027 onwards the scheme will be applying for all countries with a certain number of RTKs in 2018, except for Least Developed Countries, Small Island Developing States and Landlocked Developing Countries, unless they participate voluntarily. A flight route will only be covered by the scheme if both the departure and the arrival country are participants. (ICAO)

In conclusion, the aviation industry is only responsible for a small amount of global greenhouse gases and is making significant effort to lower its emissions even more, with two multinational initiatives for lowering the emissions in effect starting from the year 2021, one of them already in effect. This will lower the industry’s carbon footprint, while the industry itself continues to grow and bring increasing value to communities worldwide.

In the next chapter, the taxation of aviation is examined.

3 Taxes related to aviation

As per ICAO's Doc 8632, *Policies on Taxation in the Field of International Air Transport,* incoming international air travel should be exempted from a national value-added tax. Taxes should also not be added to products on board the plane that are needed for the plane to be able to operate, such as jet fuel and lubricants but may be added to jet fuel and domestic airline tickets, along with other charges, such as airport or air navigation charges and other service fees. (ICAO, 2000)

All Nordic countries besides Denmark charge a VAT on domestic air travel. In Finland and Norway, the VAT is 10%, and in Sweden 6%. (CE Delft, 2019)

3.1 Flight tax in Finland

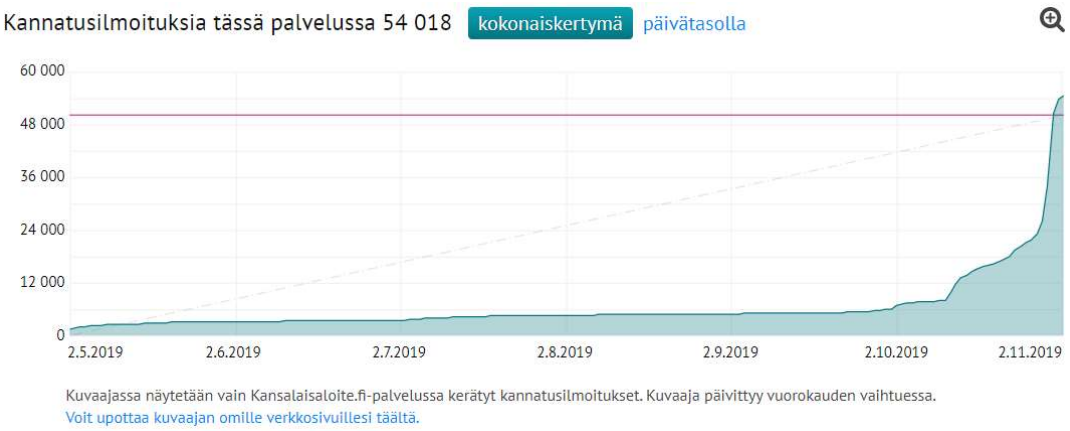
International travel has been under taxation in Finland in the 1990's, as means to revive domestic travelling after the depression and was tax was abolished in 1994 (Lentovero.fi). The tax for international passengers was 200 SMK, which translates roughly to 48,62 EUR in 2019, according to a calculator hosted by Statistics Finland.

As of making this research, Finland does not have an aviation tax. However, domestic flights are taxed with the national VAT, bringing the total amount of tax paid by a Finnish traveller to 3,74 EUR, according to a study conducted in 2019 for the European Commission. (CE Delft, 2019, 33)

Following the introduction of an aviation-related tax in Sweden, a citizen's initiative to bring a similar tax to Finland was introduced (Lentovero).

The citizen's initiative system allows Finnish citizens to collect signatures for initiatives they want to introduce to the parliament. If an initiative collects more than 50 000 signatures in six months from citizen's over 18 years of age, it is introduced to the Parliament for consideration. (Eduskunta).

The initiative for introducing a flight tax passed the threshold of 50 000 signatures on October 31st, only three days before the six-month period for collecting signatures expired (Yle, 2019)



Picture 1, the accumulation of signatures for the citizen's initiative to introduce flight tax in Finland (Kansalaisaloite, 2019)

The initiative collected a total of 54 081 signatures and was presented to the Parliament on February 12th, 2020. (Yle, 2019)

The founders of the initiative wish to introduce a tax that would tax the passengers according to the type of flight, and eventually lessen the number of flights by making flying more expensive. Another aim is to direct the money collected with the flight tax for environmental causes, but the current legislation does not allow earmarking of taxes. (Yle, 2019)

In 2019, the Finnish airports saw a 4,2% growth in number of passengers (The Barents Observer, 2020)

3.2 Flight tax and flight shame in Sweden

Sweden introduced a flight tax in 2018. All commercial flights of more than 10 passengers departing from a Swedish airport are taxed from the airline, in a way by adding a fee for each passenger. The fee depends on the final destination of the passenger, it is either 62 SEK, 260 SEK or 416 SEK per passenger. (Skatteverket).

According to a study conducted in 2019, the average amount for aviation related tax in Sweden is 14,48 EUR for all passengers (CE Delft, 2019, 33), and 13,10 EUR for an international passenger (CE Delft, 2019, 34).

As a result of the flight tax, the growth of Swedish air travel slowed down from an annual growth of 9% to a growth of 4%, and the number of international passengers dropped by 3% in 2018 (The Local, 2018)

In January 2020 it was reported that the number of domestic air travel in Sweden is down by 9% as a result of the *Flygskam* – flight shame – movement, which started to gain popularrity in 2017 and resulted in more than 22 500 people pledging to give up flying in 2020 (BBC, 2020).

3.3 Flight tax in Norway

Norway first introduced an additional tax on flying in 1978. The tax was first introduced as a charter traffic tax, then modified to a passenger tax in 1994. The tax was changed to a seat tax from 1998 to 2001, and then abolished in 2002 after being modified to a passenger tax for the last year it was in effect. (Schratzenstaller & Krenek, 2016, 17).

Norway re-introduced a flight tax in 2016. The amount of the tax depends on the passenger's final destination as of April 2019 and is eventually paid by the airline, in a similar fashion to the Swedish tax. The latest charges are 76,50 NOK for passengers whose final destination is in Europe, and 204 NOK for passengers travelling outside of Europe. (Skatteetaten).

The average amount of tax per passenger in Norway is 19,98 EUR (CE Delft, 2019, 33), including domestic passengers. For international passengers only, the average amount of tax is 8,7 EUR, as per a study commissioned by the European Commission in 2019 (CE Delft, 2019, 34).

Despite the aviation tax, the number of passengers in Norwegian airports increased by 0,6% in 2019 (The Barents Observer, 2020).

The Norwegian tax has been waived for flights departing between 1st of January 2020 and 31st of October 2020 but will resume as before on the first of November 2020 (Skatteetaten).

3.4 Flight tax in Denmark

Denmark first introduced an Air Passenger Duty in 2005, but the duty was halved a year later in 2006 and abolished in 2007, as it was said to have a negative impact on the economy (The Local, 2018).

In 2019, Denmark, along with The Netherlands, Germany, Belgium, France, Sweden, Italy and Bulgaria presented the European Commission with an initiative for an EU-wide aviation tax (Forbes, 2019).

In 2018 when Sweden introduced their flight tax, it was suggested that this could potentially be beneficial for Danish aviation. Airlines were predicted to favour Denmark over Sweden in order to not having to pay the Swedish tax. (The Local, 2019)

At the moment, there is no tax added to airline tickets in Denmark, as they are not taxed with the national VAT, unlike in other Nordic countries (CE Delft, 2019, 73).

3.5 Taxes in the field of aviation and their impact

Taxes in the field of aviation and their impact is a study from 2019, commissioned by the European Commission and carried out by CE Delft. The aim of the study is to examine the taxation of both passenger and cargo transport by air in Europe and selected regions and compare the taxation in different countries. (CE Delft, 2019, 13)

The study also provides estimated calculations on the positive and negative effects of changes in aviation taxation in EU member states, and a tool public authorities and stakeholders for making the calculations themselves. (CE Delft, 2019, 13)

In the study it was concluded that adding a tax on aviation lowers the demand for aviation. If the EU member states were to introduce a tax on aviation, it would increase the ticket prices by 3-19%, 10% in most member states. (CE Delft, 2019, 115)

It has been estimated that the 10% increase in flight ticket prices would reduce the demand for flights by 9-11% in most countries. This would then lead to lower direct employment in aviation, and a lower added value. However, the emissions and noise generated by flying would also be reduced by 9-11% in most states. (CE Delft, 2019, 115-116)

To conclude, aviation is not taxed heavily due to international contracts wishing to keep the industry growing. Introducing a flight tax is seen as a solution for keeping the passenger numbers from going up, as it will increase the price of the flight ticket, and research shows there is a correlation between reduced demand and increased taxation for flying. However, of the Nordic countries who have already introduced a fight tax, only Sweden has seen a drop in passenger numbers. This has been linked to the Flygskam-movement, rather than taxes.

The following chapter is about the gender balance in the aviation industry.

4 Gender balance in aviation

In the early days of the aviation industry, in the 1920's and 1930's, men held the positions of cabin crew. But since the 1930's a majority of flight attendants have been women. (Love Exploring, 2019). The majority of pilots have always been male, and even today men make up for almost 94% of all pilots worldwide (Forbes, 2018).

In a study conducted by IAWA – International Aviation Women's Association – it is proven that this divide still remains true to this day, with women making up only about 6% of the world's pilots, 26% of all air traffic controllers, 18% of all flight dispatchers and 9% of all aerospace engineers (IAWA, 2018).

4.1 Definition of gender

When discussing gender issues, it should be noted that the term "sex" refers to the physical expression of gender, such as the genitalia and chromosomes, and "gender" is a broader social construct which expands beyond a strict male-female divide like sex does most of the time. A person can identify their gender as the same as their sex, but it is also possible for someone to consider their gender identity as different from their sex, or not related to their sex at all. A person can also identify as having no gender at all. (Office for National Statistics, 2019).

It should also be noted that sex and sexual identity do not refer to the same thing; a person's sexual identity is used to describe their sexual orientation. The sexual orientation defines which sex or gender the person feels a sexual attraction towards. (Office for National Statistics, 2019).

4.2 IAWA

Founded in 1988, IAWA – International Aviation Women's Association – was created to be a global network for women, and to advance and to bring together women in positions of impact in the aviation and aerospace industry. (IAWA)

The organisation hosts an annual conference for all women working in the airline and aerospace industry, and wishes to appear as role models for women, and to invite new talent to the industry via their scholarship program. (IAWA)

Between 2018 and 2019 IAWA conducted a study to examine the root causes for women not advancing into leadership positions in aviation and aerospace companies. The findings of the study were collected to a report, *Soaring through the Glass Ceiling*. The study revealed that only 34% of the respondents felt equal to the men in their workplace, and that a lack of female role models has a large impact on women not considering it possible to rise to higher positions in their organisations. (IAWA, 2019)

Following the study, IAWA also launched *Growing Global: Taking Diversity to New Heights,* their own initiative which aims to encouraging everyone in the aviation industry to work on closing the gender gaps and embracing diversity (IAWA, 2019).

4.3 25by2025

At the 2019 World Air Transport Summit, IATA – International Air Transport Association - launched their 25by2025 initiative, which aims to increase the number of women in leadership roles in aviation. The goal for participating airlines is to either increase the number of women in senior positions and in jobs women are currently under-represented in, such as pilots and engineers, by 25% or to 25% by 2025. (IATA, 2019)

By December 2019, 59 airlines across the world had joined the initiative, as well as IATA itself, by committing to increasing the number of women in IATA's senior management by at least 6% to reach the 25% minimum, as well as committing to working with their member airlines to increase the number of women in IATA governance roles to at least 25%. A third measure is for them to make sure that at least 25% of speakers and panellists in their conferences are women. (IATA, 2019)

4.4 ICAO Gender Equality Programme

In 2016, ICAO – International Civil Aviation Organization – began developing the new *Air Transport Gender Equality* initiative as a part of Resolution A39-30. The resolution aims to achieve a 50-50 gender divide at all professional and higher levels of employment in aviation by 2030, in support of the United Nations Sustainable Development Goal 5: *Achieve Gender Equality and empower Women and Girls*. (Uniting Aviation, 2020)

The four main objectives of the programme are as follows: building capacity and enhancing awareness for gender equality; enhancing gender representation; increasing awareness and accountability; and furthering engagement with external partners. (ICAO, 2018)

In conclusion, the gender balance in aviation has remained unchanged in the last decades, having men operating the systems both on planes and offices, and women working face-to-face with customers, or in lower level jobs. There are several initiatives in place helping women advance their careers and supporting inclusivity and diversity in aviation, but the campaigns are relatively new, and thus the results are not yet seen.

The next chapter presents how aviation is presented in media.

5 Aviation in media

When covering aviation-related topics, major international news outlets such as The New York Times and Reuters, much like the more local Finnish medias such as Yle and Helsingin Sanomat, publish articles and news relating to the most current topic of climate change, and how big of an effect aviation as an industry plays in it.

5.1 Finnish media

In Finland specifically, the discussion about aviation revolves around the citizen's initiative, or the local stakeholders like Finnair and Finavia. The national new site, Yle, covers aviation topics also from an environmental standpoint, and has for example calculated the Co2 emissions for different ways of travelling (Yle, 2020).

The most widespread Finnish publication, Helsingin Sanomat, covers aviation-related topics in a neutral way, and publishes opinionated pieces written by readers, both in support of and against aviation.

The current public discussion about aviation in Finland has changed from the aviation tax to whether the smaller airports in Southern parts of the country should be kept in use. Finnair is putting their flights to several smaller airports on hold for the summer, and it is unclear if those flights will be resumed in autumn (Helsingin Sanomat, 2020). This is causing several environmental activists to publicly state how they don't care for resuming those flights in Southern Finland where cities are within a short distance from each other, while the industrial sector near those airports argues that the flights are crucial for their export business even if the passenger numbers on the flights aren't high (Helsingin Sanomat, 2020).

5.2 Social media

Based on empirical findings, the criticism towards aviation is usually shared on smaller platforms than national newspapers. The environmental movement is mainly housed in social media, especially the microblog platform Twitter, which allows people to create their own messages – called tweets – that are composed of 280 characters or less, commenting on tweets by other users, interacting with companies and commenting and sharing media from other sites on the internet.

The public discussion on social media often involves harsh opinions, both for and against aviation, and also creates so-called “bubbles”, in which users are mostly surrounded by people sharing their opinion. These echo chambers make it challenging to present views and results contradicting a person’s personal opinion.

In conclusion, aviation is presented in a neutral way in the mass media, delivering fact-based information from many different angles. There is still a lot of information that does not reach the masses, mostly about the advances made by the aviation industry to lower its emissions and combat climate change.

In the next chapters, the methodology of the survey and interviews is examined.

6 Method

The basis of the survey was a survey the Commissioner had conducted in 2018 in Central Europe. The goal was to recreate their survey in Northern Europe and then compare the results to the results of the previous survey, which meant the methodology for the thesis research had to follow the methodology of the original survey.

In addition to conducting the survey, interviews were held. The purpose of the interview was to gain a deeper understanding in the same topics as presented in the survey, but using a qualitative method as opposed to the quantitative method of collecting data.

6.1 Creating the survey

The survey was modified somewhat, a question about the amount of business-related flights was added, as well as questions about the respondent's background and, as per the Commissioner's request, questions about gender equality and representation in aviation.

The questions in the survey asked the respondents about their own flying habits, as in how many flights they fly in a year, and how much of that is for business. The respondents were also asked about their views on increasing the price of a plane ticket by 10%, and how that would affect their flying.

The multiple choice questions in the survey asked how much the respondent agrees or disagrees with different statements regarding aviation, with added questions on how much the respondent agreed or disagreed to the same statement when the method of transport was changed to driving by car, trains or boats.

The statements discussed topics such as how much the respondent agrees with the industry having a plan on how to reduce carbon emissions and how much the respondent thinks the industry is investing in environmentally friendly technologies. Other statements the respondents were asked to evaluate made claims about taxation to benefit the environment and the level of noise different modes of transport bring.

The questions more specific to aviation only asked about the respondent's personal choices, such as if they had changed their flying habits because of environmental concerns, and how they viewed an increase in air connections between their home countries

and the rest of the world. A question about how much the respondent trusted their government to direct the money from environmental taxes to environmental causes was also added.

To gain more insight in what the respondents thought about the environmental aspect of flying, they were also given a free-text field to write in if they had anything to add to the topic.

6.2 Selecting target groups

The target group of the survey was set at anyone older than 15 years for legal reasons. According to the Finnish legislation, anyone under the age of 15 must have parental approval for participating in surveys, and thus the original minimum age for participants was changed from 14 to 15.

Further specifications to the target group, such as gender or nationality of the respondents were not made, as the number of respondents did not reach the original goal of 1000 respondents per country. If it had seemed like the response goal would be reached for any of the countries, it would have been possible to use the background questions to limit the answers of a certain age group, gender or nationality to mimic the actual demographic of the people.

6.3 Spreading the survey

The survey was shared on different social media platforms to collect responses. It was shared on a personal Facebook page, and shared by other users. In addition to that, the survey was shared in a Facebook group with over 5 000 members, who all identify as women.

The survey was also posted on LinkedIn and shared by several users with several hundred contacts. The survey was also shared on Twitter multiple times and shared there by users, and on Reddit on communities for Swedes, Norwegians and Nordics in general, as the Danish community did not approve of sharing the survey.

To reach respondents in other countries than Finland, the survey was also shared via email to target audiences in Sweden, Norway and Denmark, by contacting different organisations in those countries. Email was also used to reach out to Haaga-Helia alumni and

current Aviation Business students and shared in a weekly internal newsletter of DHL Express Finland.

6.4 Survey responses

The initial goal of the survey was to gain a thousand respondents from each of the countries represented, but ultimately, this goal was not reached in time, and reaching it did not seem likely.

The results of the survey do not show much of a difference between countries when comparing Finnish and Scandinavian responses, many questions yield the same result regardless of the country of the respondents. In addition, the number of Finnish respondents was 501, and the total number of Swedish, Danish and Norwegian respondents was 135, thus the responses cannot be directly compared.

There is a difference in the genders of the respondents – the majority (65,87%) of Finnish respondents are women, while the men are more represented in the group of Swedish, Norwegian and Danish respondents, with 68,15% of the respondents identifying as male. In total, 36,64% of all respondents were men, 58,49% women and 2,2% of the respondents identified as “other”, with the remaining 2,67% preferring not to disclose their gender.

6.5 Creating interview questions

The interview questions were created keeping in mind the two main points of the survey: how the environmental effects of flying affect how aviation is perceived, and how the gender balance of aviation seems like. The questions were also designed in a way that allowed sending them via email rather than meeting with the interviewee face-to-face and can be found in an appendix in the end of this thesis.

6.6 Finding interviewees

The interviewees were found through the survey. On the final page, the respondents were given the chance to leave their contact details if they could be contacted further for an interview.

Out of the 636 respondents, 96 left their contact details, and three people responded to the email sent later about the interview. Two of these interviews were conducted via

email, and one via an instant messaging app. The respondents were two women in their mid-20's, and one man in his mid-30's, all Finnish citizens.

In addition to the one-on-one interviews, a focus group interview was hosted for Haaga-Helia Aviation business students who had started their studies in 2020. The focus group consisted of five students who were chosen based on age, nationality and gender, so that as many groups of people as possible were represented. The students chosen for the group consisted of three men and two women, their ages ranging from early twenties to having already gained experience in working in aviation. All students were Finnish citizens.

7 Results

The survey results are presented here with responses from all countries together, not divided by country unless it brings an added value to the response, or the question is considered country specific. This is the case with the questions asking how negatively an increase in airline ticket prices would affect the respondents' flying and how much the respondent trusts their government to assign the tax revenue from flight taxes to environmental causes.

7.1 Survey results

It needs to be noted that the survey was created and the responses collected before the COVID-19 pandemic, and the effects of the pandemic are not represented in the results. A new study will be needed if there is a need or wish to examine how the pandemic affected the public opinion.

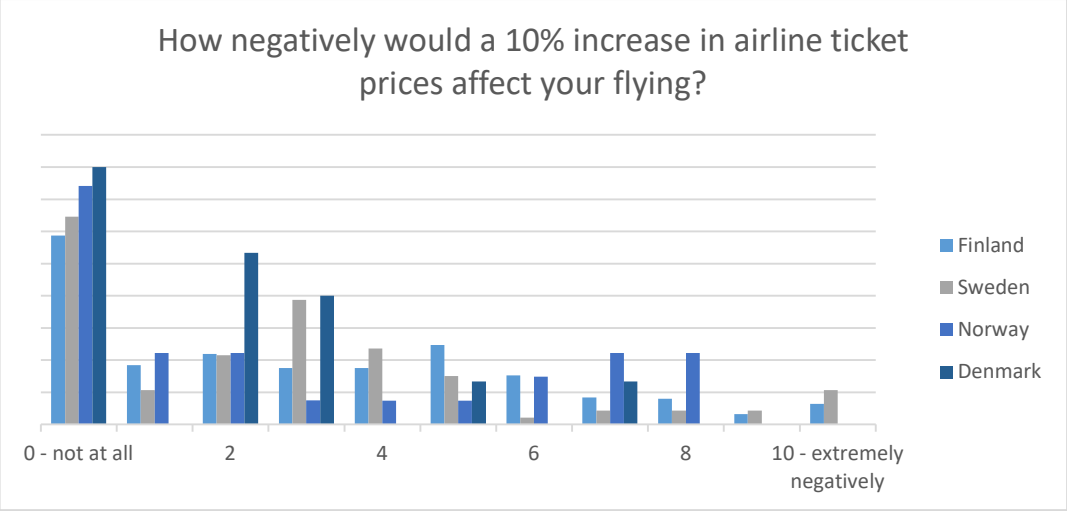


Figure 1 - Responses to the question about increasing airline ticket prices

In the first question of the survey, *How negatively would a 10% increase in airline ticket prices affect your flying*, the majority of the respondents do not think than an increase in airline ticket prices would have a negative effect in their flying habits. The Norwegian and Danish respondents said they would be the least affected by the increase, both countries had zero respondents choosing numbers 9 or 10, while Sweden had the most respondents saying they would be extremely negatively affected, with 5,38% of the respondents choosing 10 as their answer.

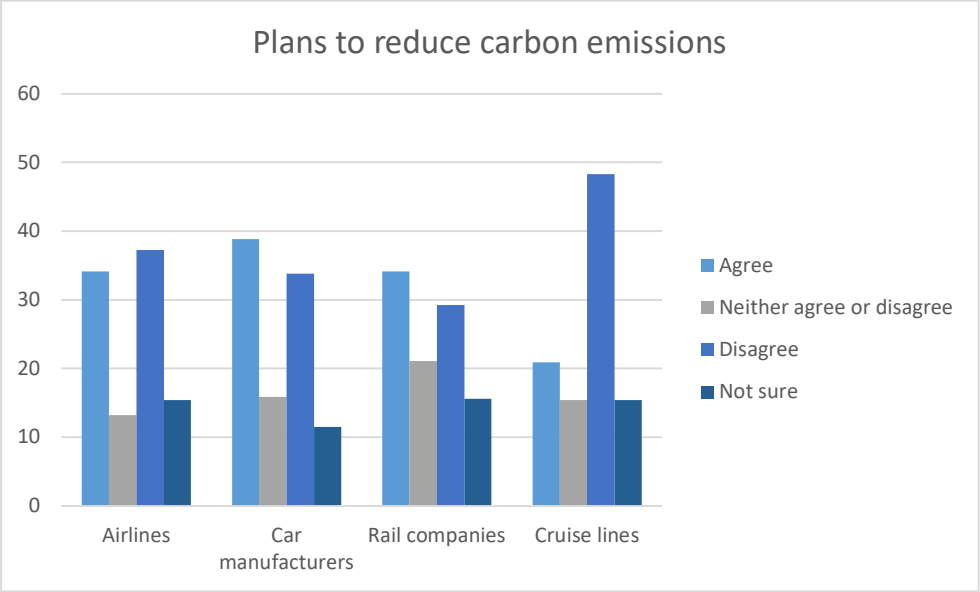


Figure 2 - Responses to the statement of industries having a plan for reducing carbon emissions

When comparing different modes of transport, the respondents consider cruise lines being the ones least likely having a plan for reducing their carbon emissions, with almost half the respondents (48,27%) stating they do not agree with trusting cruise lines to having a plan for reducing their carbon emissions, while car manufacturers are seen as the most likely to do so. The same percentage of respondents agrees with airlines and rail companies having a plan to reduce their carbon emissions, more respondents think that airlines do not have a plan to do so.

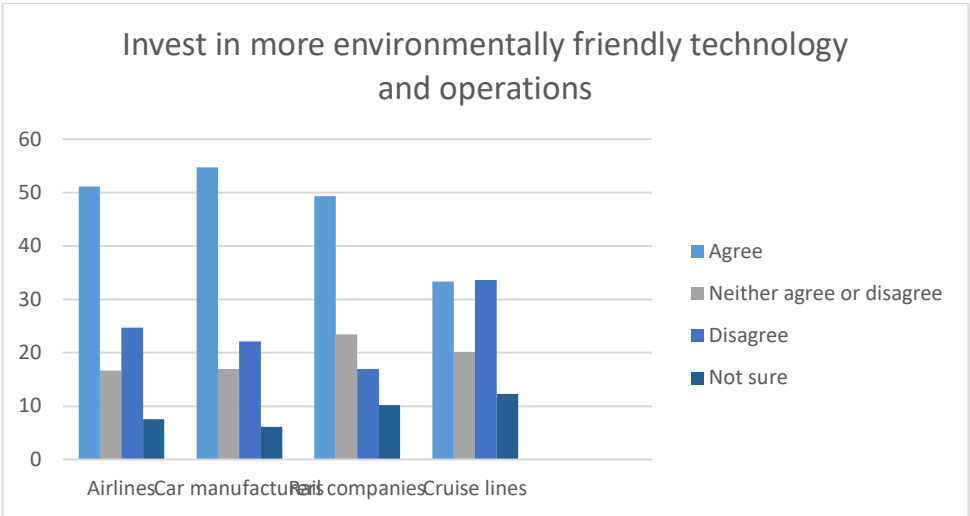


Figure 3 – Responses to how likely each industry is to invest in environmentally friendly technologies and operations

The industry considered the most likely to make investments is environmentally friendly technologies and operations are the car manufacturers, with 54,72% of the respondents trusting in them investing in environmentally friendly technologies, but aviation and rail companies are not far behind with 51,1% of the respondents agreeing with trusting airlines to make investments and 49,37% trusting rail companies.

The comparison of transport modes paints a picture of who are considered the good guys in transport – car and rail companies with aviation not too far behind, while cruise lines seem to be considered falling behind in environmental issues.

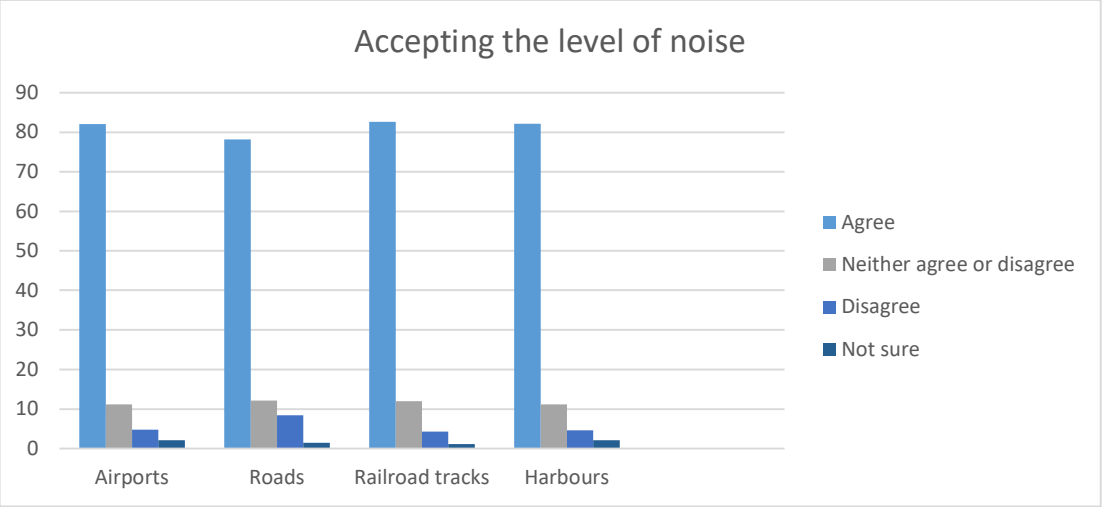


Figure 4 - Responses in a question discussing which transport noise should be accepted

The responses to the question about different transport methods and how much people choosing to live near them need to accept the noise they make all seem to be in agreement about the noise being something that needs to be accepted. One respondent mentioned further in the survey that accepting the noise of traffic depends on whether the road was there already when the person settled to live near it, or if the road was built after the people had built their homes.

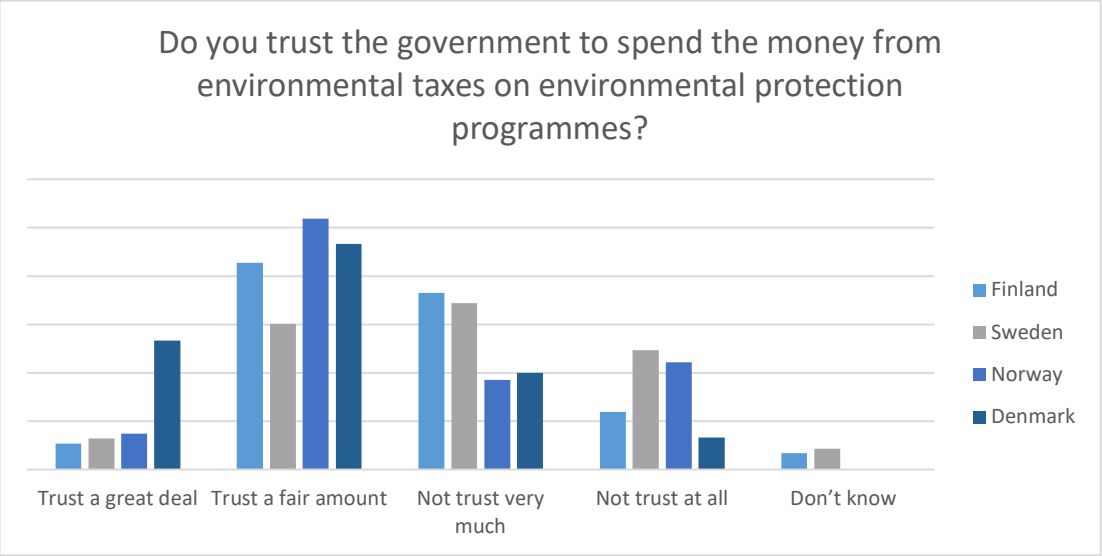


Figure 5 - Responses to a question about whether the respondent trusts their government to direct money from environmental taxes to environmental causes

Overall, the Danish respondents seem to have more trust in the government to direct the money from environmental taxes to the protection of the environment, while respondents from Norway and Sweden do not trust their government to direct the tax money towards environmental causes. A survey conducted by OECD revealed that the people in Nordic countries tend to trust their governments quite a lot: all four countries were in the top-15 of a worldwide study, with Norway scoring the most points with 66% of the people trusting the government. The Finnish and Swedish governments were both trusted by 49% of the people, and the Danish government was trusted by 45% of the population. (World Economic Forum, 2017)

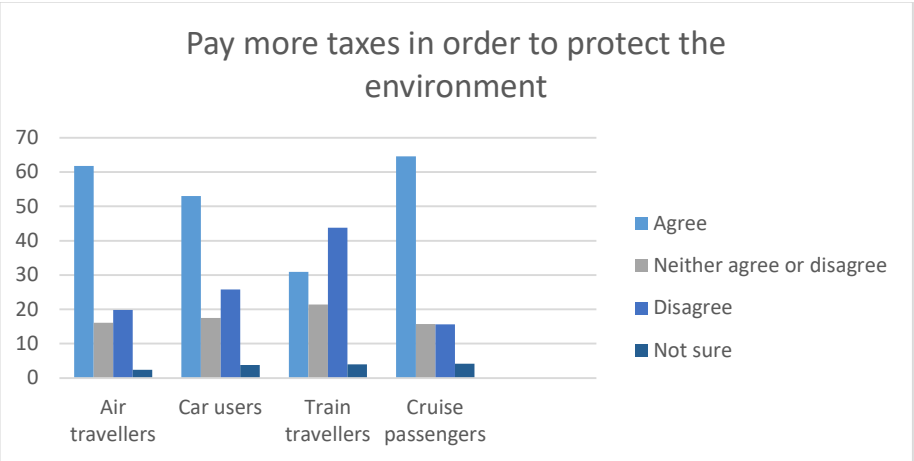


Figure 6 - Responses to the question of each transport method and whether the users should pay more taxes in order to protect the environment

When asked if it is right for passengers using different methods of transport to pay more taxes in order to protect the environment, the train passengers paying more taxes is something the respondents disagree with the most, with 43,17% stating they disagree with train passengers paying more taxes, while having the cruise passengers pay more taxes is most agreed upon with 64,62% of the respondents agreeing with the statement. 61,79% of the respondents agreed with air passengers paying more taxes.

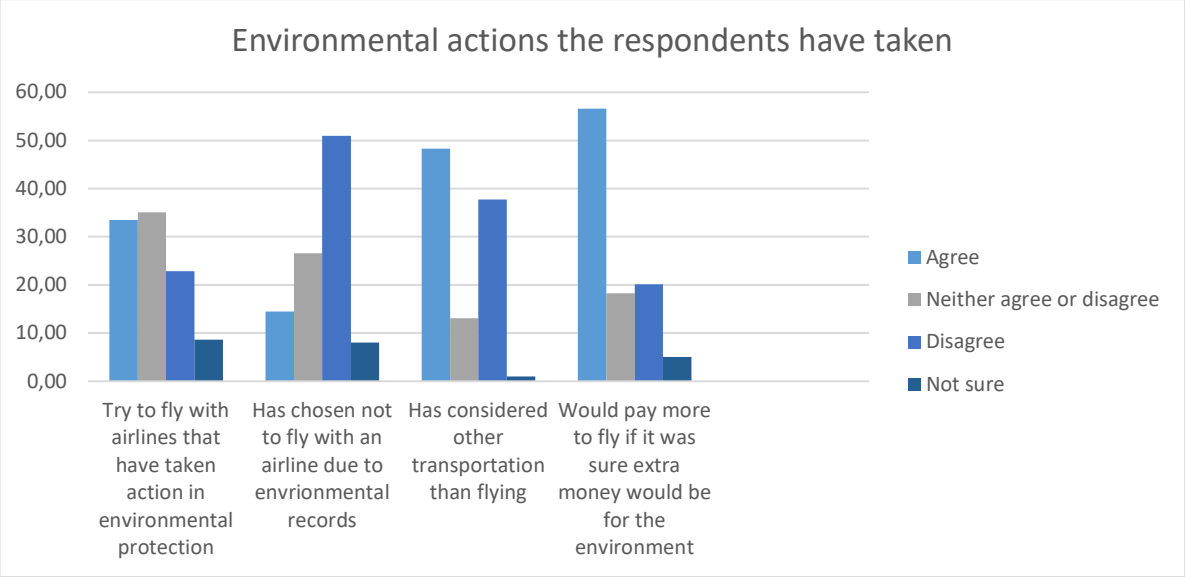


Figure 7 - Responses to statements asking about environmental actions the respondents have taken

Over 56% of the respondents state that they would be willing to pay more to fly if they knew the extra money is directed towards environmental causes.

Out of the biggest airlines in the Nordic countries, SAS offsets the emissions of its frequent flyer programme members (Skandinavian Traveller, 2019), and Norwegian Airlines offers its customers the opportunity to participate in environmental programmes as a way to offset their flights (Norwegian, 2019). Finnair launched their *Push for Change* initiative which offered the customers a similar possibility than Norwegian did, but it has since been shut down by the Finnish authorities (News Now Finland, 2020).

In the free text field, a respondent stated that while they have not chosen to not fly with an airline due to their environmental record, they have chosen not to fly with an airline due to its safety record.

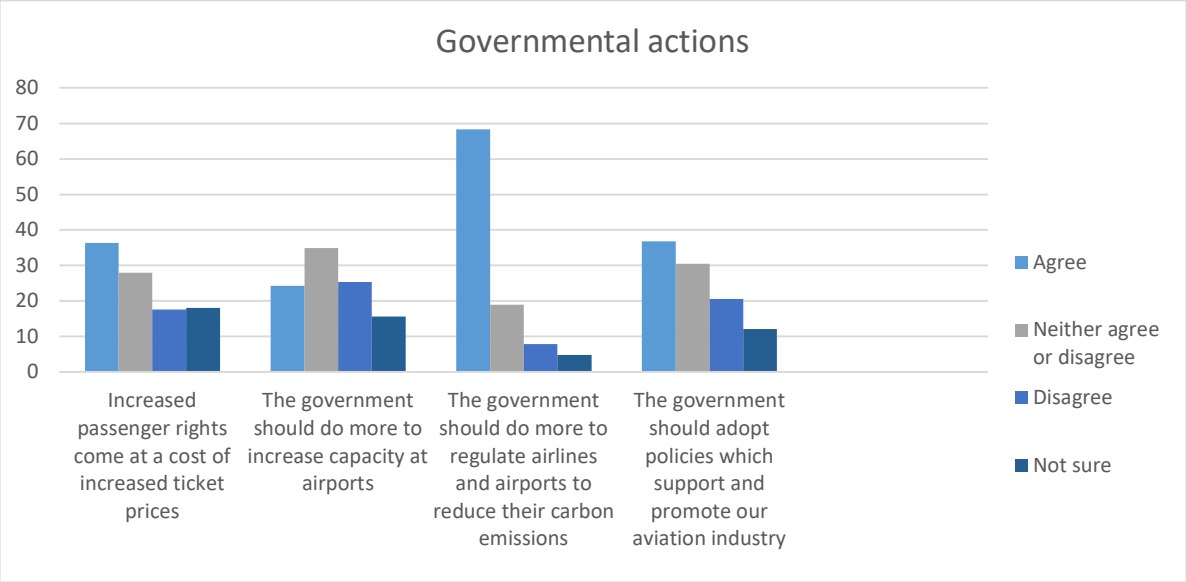


Figure 8 - Responses to questions regarding actions the government could take

What stands out the most when asking about actions the government should take regarding aviation and the environment, 68,4% respondents are in favour of the government regulating airlines and airports to reduce carbon emissions. The free text field in the end of the survey offered the respondents to express their opinions on the matter, and the responses range from wishing for more taxation, to instead of increasing taxation asking for increasing taxation on shorter trips or to not increasing taxes but dismantling benefits for aviation.

A respondent in the free text field mentions that they would wish for electrical airplanes being used in short-distance domestic travel.

Regarding the governmental actions, the respondents are mentioning a need for multinational solutions, instead of just national ones.

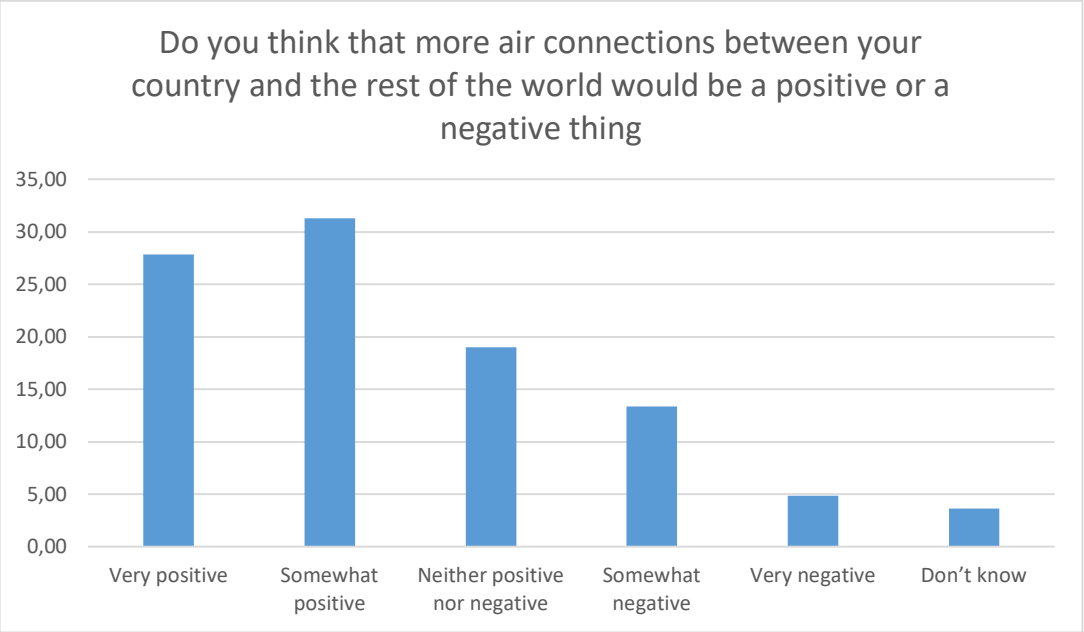


Figure 9 - Responses to question about whether more air connections would be a positive or a negative thing

Overall, the respondents have a positive reaction towards increasing air connections between their home countries and the rest of the world, with 59,12% stating they see increased air connections as very or somewhat positive.

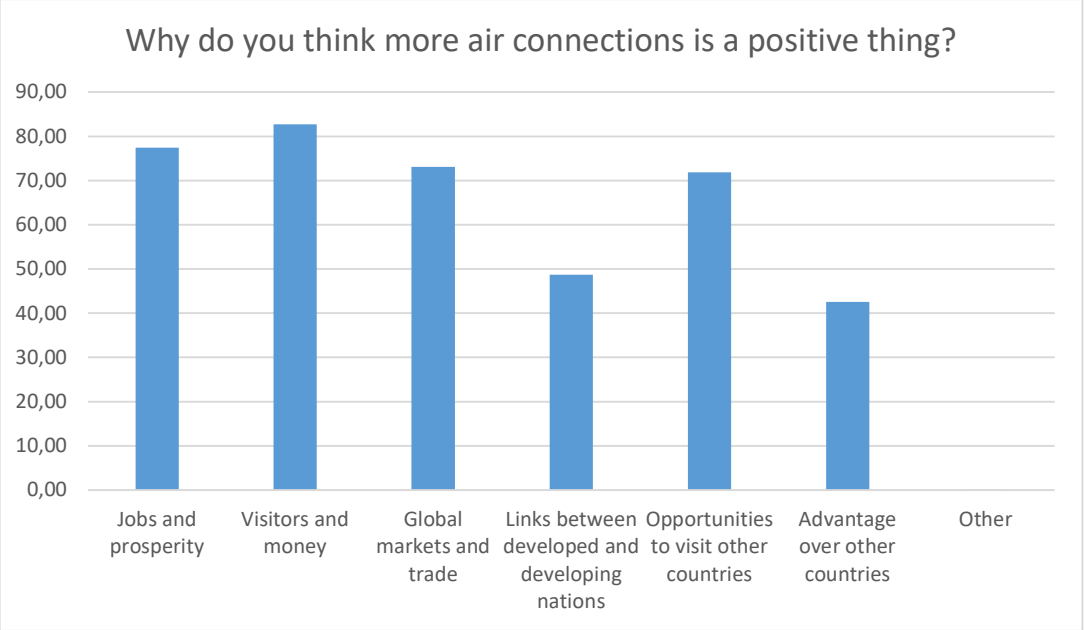


Figure 10 - Responses to why more air connections are a positive thing

Visitors and money are considered the biggest reason for increased air connections being a positive thing. The *other*-option gave the respondents a chance to write down their

views, and the reasonings for air connections being positive include education, fast transport of pharmaceuticals, quicker access to specialized medical care, access to other parts of the country and encouraging new technology. The respondents also wanted to mention that the geographical location of Finland makes it difficult to reach the rest of Europe by other means than flying. The respondents also wish for more direct flights, with the reasoning of them being more environmentally friendly.

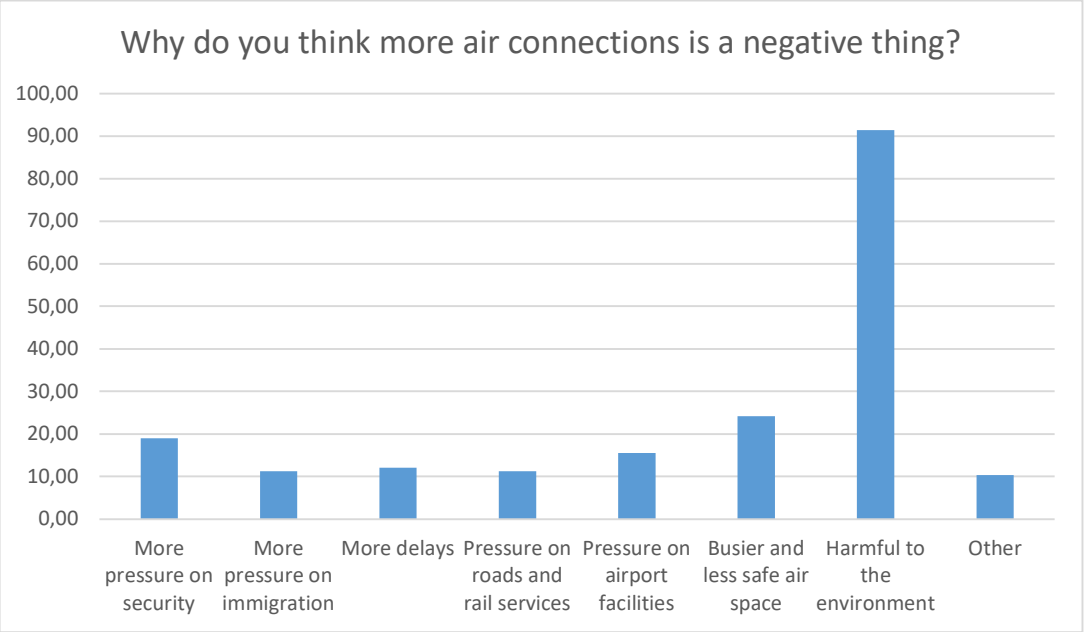


Figure 11 - Responses to why more air connections are a negative thing

When discussing the reasons for a more negative approach towards growing increased air connections, environmental factors raise the most concern.

Additional points on the open-ended response were made about over tourism in some areas, especially by Chinese tourists, more connections being harmful for the ingenious Sapmi people living in the northern parts of Norway, Sweden and Finland, more connections lowering the number of passengers in each plane and less people using on-land modes of travel if air connections are increased. The respondents are also worried about more air connections harming airline business. A respondent expressed that they are annoyed by the noise problems and doesn't find it right that other people suffer from malnutrition while others fly around for fun.

The comments left in the free-text field are both positive and negative towards aviation. The main themes appear to be whether flying in in fact bad or not and comments regarding the flight tax, and taxing aviation in general.

The respondents giving their opinion in flying not being as bad as the media makes it out to be are pointing out that the amount of Co2 emissions caused by aviation is very low, around 2%, and are also saying that the aviation industry is working to lower their emissions, and that the real environmental hazard is the clothing industry, and people not being mindful of where their electricity comes from, what they eat and how they consume.

The respondents more critical towards aviation are criticising the industry for not doing enough to lower the emissions. There are also demands to find better solutions for aviation, and just to end flying completely.

The financial approach taken by the respondents appears to be either about being for or against the flight tax, or wanting to comment on the taxation of aviation on a more general level, where the criticism is directed towards how jet fuel isn't taxed. In general, it is pointed out that adding a tax will not save the environment, and that other solutions are required instead. Electric airplanes and biofuels are considered options for the current planes. The general consensus also seems to be that rather than taxing individual passengers depending on their country of origin, an EU wide solution is asked for, preferably one targeting the companies rather than passengers.

In addition to environmental questions, the respondents were asked about diversity and gender in aviation, and their own interest in working in the aviation industry.

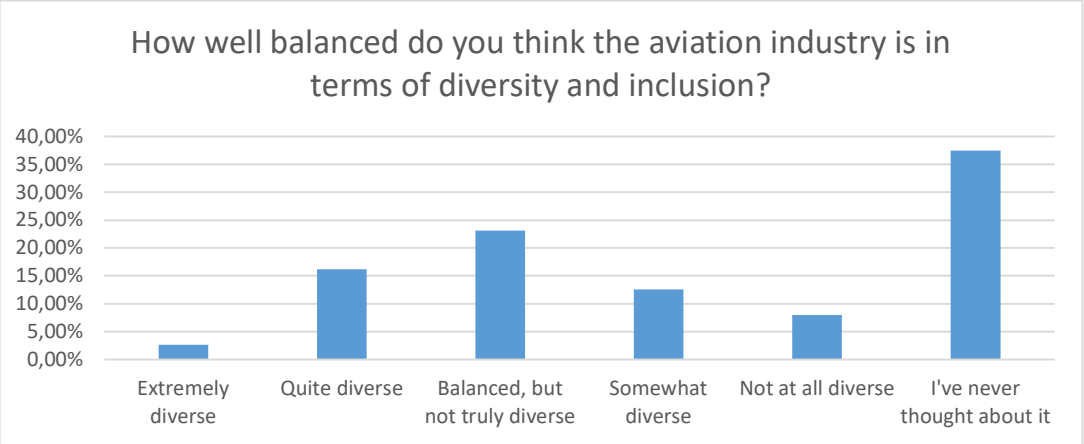


Figure 12 - Responses to how well balanced aviation is considered in terms of inclusivity and diversity

The question about diversity in aviation brings up the fact that it is not something people really think about, with 37,42% of the respondents stating they have never thought about

diversity in aviation. When looking at the other responses, aviation is mostly considered *Balanced, but not truly diverse*, with 23,11% of the respondents selecting that as their answer.

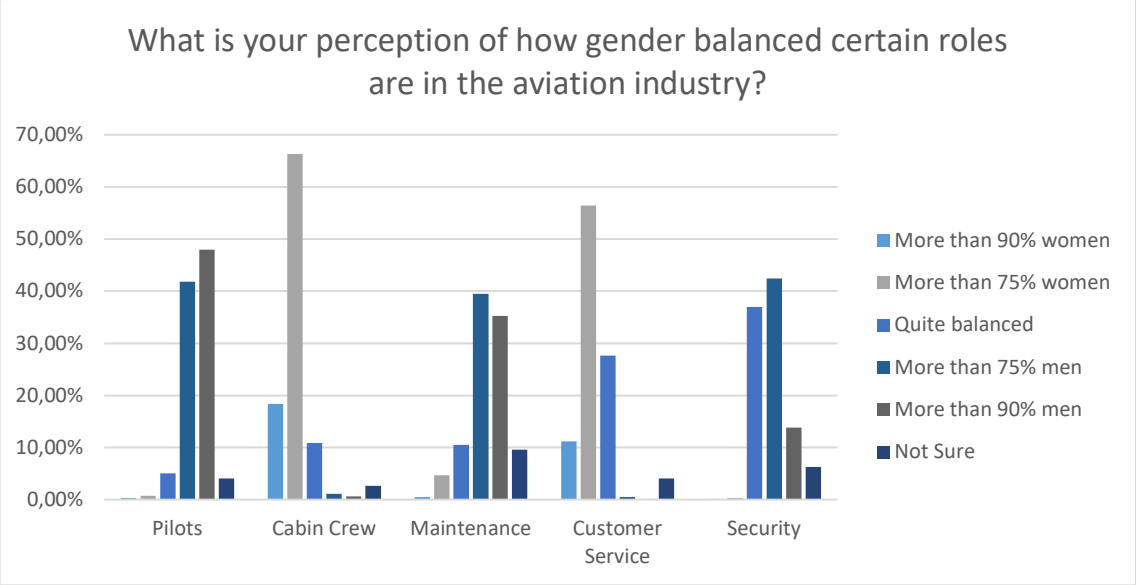


Figure 13 - Responses to how the respondents view the gender roles for certain jobs in aviation

The question about different jobs in aviation and the gender balance in them, clearly shows that women are mainly seen working the customer-facing jobs, such as cabin crew and customer service, while men are seen working with machinery in jobs like pilots and mechanics.

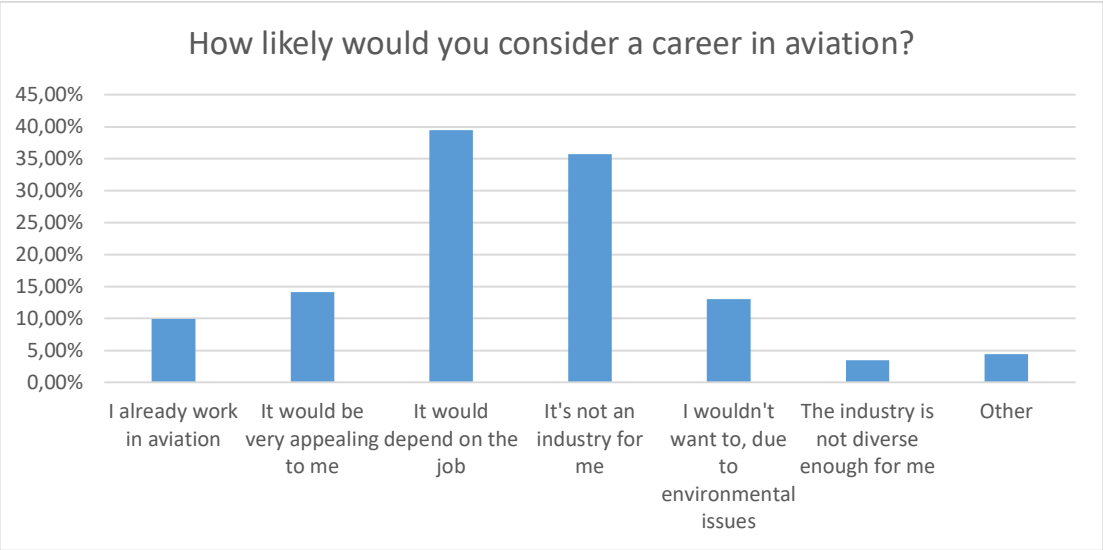


Figure 14 - Responses to how likely the respondents would consider a job in aviation

In terms of working in aviation, 39,47% of the respondents say it would depend on the job if they would want to work in aviation, and 35,69% say they do not feel like aviation is an industry for them. The question allowed the respondent to choose multiple answers and an open-ended answer for filling in their own text.

The respondents considered aviation an appealing industry because they feel it offers opportunities for global networking, chances to travel, a high level of professionalism and a multicultural atmosphere. Some respondents are also interested in the pay and international experiences and working as cabin crew or pilots.

Respondents who did not consider aviation an appealing industry explained themselves by stating they already have careers in other fields and are not interested in changing careers for aviation. Others also wrote they are not interested because of the environmental issues associated with aviation, or because they are not interested in airports or customer service. The jobs are seen as stressful, both because of the customers and the responsibility for the safety of the passengers. Other respondents also say they have medical conditions that prevent them from working in aviation, or that they do not meet the physical standards presented for pilots, as they are too short or have too bad an eyesight. Other reasonings include a fear of heights and flying causing cancer, or the sexism in the aviation industry.

7.2 Interview results

The respondents state that the first thing they think about when they think about aviation is the environmental impact, climate change and big corporations, but also how it makes the world smaller and is a fast mode of transport.

The status of aviation today is dividing opinions, the interviewees are stating that flying is a luxury only the rich can afford, but it’s also seen as an everyday thing that’s available for more people than ever before. At the same time flying is connected to climate change, and airlines advertising their environmental actions are accused of “greenwashing”. At the same time environmental compensations are viewed as a way to reduce the guilt of air travel.

Flying is seen both as a sign of wealth, and something available for everyone, and as a way to travel quickly to the northern parts of the country. It’s also viewed as something

people don’t really think about, except for environmental activists who are against it, and businesspeople flying a lot for work-related reasons.

The current discussion about flying is seen as a difficult topic, since the conversation is seemingly non-existent. Reducing flying is seen as a solution, alongside increasing ticket prices in favour of finding more environmentally friendly solution. The former solution brings out the issue of the general public being accustomed to the current situation of flying being easily available and affordable, and do not want to give up that privilege. In addition, more responsibility should be placed on people who fly a lot, and people flying private jets, and not as much on people travelling in economy class once a year.

The rise in environmental consciousness is considered a reason for the current discussion revolving around aviation, as aviation is considered a big source of pollution. Aviation is also considered a luxury product, and thus something that’s easy to live without, or at least easy to greatly reduce.

In comparison to other modes of transport, aviation is considered the worst in terms of environmental impact, but it’s also recognised that this might not be true on all distances, and that sometimes flying is the only feasible option for travelling. When the environmental impact is not taken into account, flying is seen as the best option for even domestic travel. More environmentally friendly travel solutions also require more money and time and are thus not available for everyone.

The respondents’ personal preferences for different modes of transport are either walking or biking for short distances, and buses and trains on longer distances. One respondent reported preferring a flight across the Atlantic, as flying is a faster and more affordable option than crossing the ocean by boat. Trains are seen as a more comfortable option than buses.

As for the future of aviation, it is agreed that there’s a need to develop and start using greener options, and aviation as a whole should adapt to the increase in environmental values, by reducing – and preferably stopping – its growth. With business meetings being held online, the future of aviation is seen in transporting goods more than people.

To improve the image of aviation from a sustainability perspective, the industry should become more sustainable. The progress made for lessening the environmental impact should be clearly shown, as well as the actual impact of aviation for the environment. Independent studies to examine the impact should be conducted, and the results presented.

Instead of just collecting environmental compensations, the airlines should be open about how the money has been used.

When discussing the gender balance of aviation, it is viewed as men having all the exciting positions, such as pilots and mechanics, while women are more a decorative item, working customer-facing jobs like flight attendants.

Having a gender-based quota for different positions is not seen as the answer to the gender divide, as there is a fear of the quota leading to under-qualified staff in the cabin. Working as a cabin crew is deemed a high-pressure job that not everyone can do, and it is implied men are not that well suited for that.

7.3 Focus group interview results

The respondents all state that their passion for aviation and an interest in the field is what brought them to study aviation in the first place. One respondent also stated they wished to become either a pilot or a cabin crew member, but they were too short for either of those jobs, so they settled on studying aviation business.

All respondents also say they fly a lot, but only one respondent says they feel guilty about their flying in regards of environmental issues, as they fly purely for leisure and tourism. Other respondents state they do not feel guilty, as flying is for them the only reasonable way to visit their families at the Mediterranean. This also makes them not feel guilty about flights with a purpose of tourism, as reaching their destination by other means of transport is not possible.

The need for visiting places only reachable by flying comes from the need and want to visit more foreign cultures, and destinations such as Stockholm and Tallinn, which are reached easy by boat, are considered to be too similar to the culture of Finland. When faced with the decision between flying and other modes of transport, flying is favoured when it offers a better schedule even on flights within Europe, despite the environmental factors.

In general, the respondents agree on five hours being the maximum distance they are willing to use their personal car, a bus or a train instead of flying to their destination, especially on trips within Finland. This still depends on other factors, like the amount of lug-

gage and the company they are travelling with. Taking the plane is considered a better option when travelling with family, but the bus is in the respondent's experience a better option for a sports team.

The interviewees state that a 10% increase in flight ticket prices in form of an added flight tax would not change their flying habits, and they would rather give up other purchases in order to keep flying like they are used to. The interviewees see flying as essential, both for personal reasons when they fly to visit their family, and on a larger scale of people still wanting to travel to see new places and travel to see the sun, especially from Northern Europe.

The respondents all agree that aviation as a business will keep on growing, even with a possible tax added to the ticket prices. There is a strong belief that the tax would hurt the local economy as the tax would only affect how much people consume on other things than flying. However, the respondents also state that the topic of the tax is not something they discuss with their friends and families. It is also important to note that the interview was conducted before the COVID-19 pandemic, and that the effects of the pandemic may have changed the way the respondents would answer the questions.

When asked about the traditional gender roles in aviation, one of the respondents quickly points out that their company employs more women than men in total, although their board of directors consists of more men than women - an improvement from the board of directors being only men. The respondent also points out that in another company, men are not hired for the position of a cabin crew member.

The respondents don't feel like there is much of an issue with the gender balance of jobs in Finland, unlike in countries like Japan and China, where the local culture is more "macho". The respondent points out that even a country like Saudi-Arabia has female pilots, but China and Japan do not.

A female respondent had stated she had wished to become a pilot, but due to the lack of representation her mind was shifted to becoming a flight attendant instead. Likewise, one of the male respondents had wished to become a flight attendant, but as he had not seen male flight attendants, he decided he would like to be a pilot instead.

The respondents' reasoning for women rather becoming flight attendants, other than lack of representation, is that women are not as interested in technical fields than men. Another explanation is that there is still a misconception that flying the plane requires physical strength, and it is turning women away from the job.

When discussing other jobs in aviation, the respondents say the qualifications matter more than gender, but women are considered not to be as ambitious as men when building their careers. The respondents see that to build a successful career and reaching the highest positions, the worker is required to make a decision between their career and having a family - women are seen to abandon higher job positions in favour of having a family, as their men also are thought to have good careers.

The respondents also state that women prefer the safety of lower level jobs. According to one respondent women also communicate different from men because of their DNA, and the communication between men is more straightforward than communication where a woman is involved.

When asking the group about their wishes to become airline CEO's, participants who say they would reach out for those positions also state they are not looking to build families, while the wish to have a family is seen as a hindrance for reaching a high position in a company by the respondents who wish to have families.

The group was also asked about the public image of aviation, and how they would improve it. The respondents state that they would focus on making it known how fuel efficient and environmentally friendly newer planes are. One of the respondents says they had seen this kind of information on a video, but only in a video aimed for an audience who already has an interest in planes, rather than a wider audience. A similar notion was made about the social media pages of airlines - they share information about the changes they make to become greener, but those advances go unnoticed as the information only reaches an audience with an interest in the topic.

To engage more people in the discussion, the respondents would fund more research on biofuel, and build campaigns around the environmental advances the industry and companies are making. They would also make it a point to attend climate conferences as an airline, and engage in conversation with people. They also say that sustainability should become a part of the "core business" of the airline and should be brought up whenever the airline is presented.

The respondents highlight the importance of open communication when bringing up the environmental aspects of aviation, as well as basing all claims on factual evidence. They also feel that the benefits of aviation are not communicated enough, as people don't know how life would be if planes wouldn't take off.

8 Deliverables

As a deliverable for the project, the commissioner has requested an executive summary of the research, focusing on the survey and interview results. This will be delivered to the commissioner. The summary presented to the commissioner will be based on the following chapters.

8.1 Environmental issues

While multinational emissions initiatives already exist, it is not sure how knowledgeable the greater public is of them. The information is freely available, but it is not reaching people who do not actively search for it.

The results do not show much of a difference between countries when comparing Finnish and Scandinavian responses, many questions yield the same result regardless of the country of the respondents.

There is a difference in the genders of the respondents – the majority of Finnish respondents are women, while the majority of respondents from other countries are men. This is likely explained by examining the platforms the survey was shared on. The other background questions follow a similar pattern, with the Scandinavian respondents reporting more flights in a year, with more of them being for business. Again, this is likely due to the survey being shared on a more casual platforms in Finland, while non-Finnish respondents have been from more “professional” medias, such as LinkedIn and directly contacting organisations.

When asking about increasing the price of the flight ticket, the responses are similar, with non-Finns being slightly more accepting towards the idea.

Comparing different modes of transport doesn’t really paint aviation as the bad guy, the worst offender seems to be cruiselines, with them being seen as the ones least likely to have a plan to reduce emissions or investing in environmentally friendly technologies – this also reflects in cruise passengers being seen as the ones who should be paying more taxes in order to protect the environment.

The same comparison of transport modes also paints a clear picture of who the good guys are – car and rail companies. The respondents agree that car companies are the most

likely to have a plan to reduce emissions and invest in more environmentally friendly technologies, while rail companies' efforts are the least disagreed with. Rail passengers are also the ones who are the least considered to be the ones to pay more taxes for environmental protection.

Most respondents regardless of their country of origin share the view that people living near any source of traffic-related noise should accept the noise the traffic brings, especially people living near train tracks.

Overall, Finnish people seem to have more trust in the government to direct the money from environmental taxes to the protection of the environment, while respondents from other Nordics are more sceptical towards their governments *(is this explained by people in some Nordic country having little trust in their government in general?)*. In addition, when over 61% of the Finnish respondents say they'd be more willing to pay more to fly if the money was directed to environmental causes, only 39% of the Scandinavian respondents share that view *(is this reflected in the use of Co2 compensation?)*. Overall, the Finnish respondents seem to give the impression of making more environmentally conscious decisions when flying in comparison to their Scandinavian counterparts.

The Scandinavian passengers are more in favour of increasing airport capacity and adopting policies to support and promote the aviation industry. In general, increasing passenger numbers are viewed more as a very positive thing in the Scandinavian countries rather than in Finland, where the response is more careful. The reasons for positivity follow a similar pattern, with Finnish respondents being slightly more interested in jobs and visitors, and Scandinavian respondents looking for global trade and links to developing nations. Other points being raised are the benefits of aviation to education, the convenience of flying in comparison to travelling on land, also for medical reasons, and the location of Finland which makes it difficult to access other countries in other ways than flying. There are also wishes for more direct flights, with the reasoning of them being more environmentally friendly.

In regards of choosing an alternative method of travelling to flying, train travel is marketed as a greener option for flying in Europe, but it is also recognised that in the Nordic countries, especially Norway, Sweden and Finland, train travel takes a lot more time and is often much more expensive than flying on longer distances.

A survey respondent from Norway compares the journey from the city of Bergen to the city of Værnes, which is an around 600 km distance, by stating that the flight takes 50 minutes and costs 500 NOK, while the train takes 18 hours and costs 1 500 NOK.

In Finland, travelling from the Southern parts, especially the capital Helsinki, to the Northern parts of the country by train is sometimes not even possible, as the northernmost railway station in Kolari is still 60 kilometres more south than the second most northern airport in Kittilä, and 221 kilometres south from the most northern airport in Ivalo. On the other hand, a respondent in the free text field mentions they prefer the train when travelling from Helsinki to Oulu, as they find it more comfortable and feel that they have to wait less, but they also mention flight tickets being cheaper sometimes, when buying last minute.

When discussing the reasons for a more negative approach towards growing increased air connections, environmental factors raise the most concern, with Finnish respondents also worrying about safety and infrastructure at airports and other transport modes. Additional points were made about over tourism in some areas, especially by Chinese tourists, more connections being harmful for the ingenious Sapmi people living in the northern parts of the country, more connections lowering the number of passengers in each plane and less people using on-land modes of travel if air connections are increased.

The comments left in the free-text field are both positive and negative towards aviation, and the themes are similar regardless of the country of the respondent. The main themes appear to be whether flying in in fact bad or not and comments regarding the flight tax, and taxing aviation in general.

The respondents giving their opinion in flying not being as bad as the media makes it out to be are pointing out that the amount of Co2 emissions caused by aviation is very low, around 2%, and are also saying that the aviation industry is working to lower their emissions, and that the real environmental hazard is the clothing industry, and people not being mindful of where their electricity comes from, what they eat and how they consume.

The respondents more critical towards aviation are criticising the industry for not doing enough to lower the emissions. There are also demands to find better solutions for aviation, and just to end flying completely.

The financial approach taken by the respondents appears to be either about being for or against the flight tax, or wanting to comment on the taxation of aviation on a more general level, where the criticism is directed towards how jet fuel isn't taxed. In general, it is pointed out that adding a tax will not save the environment, and that other solutions are required instead. Electric airplanes and biofuels are considered options for the current planes. The general consensus also seems to be that rather than taxing individual passengers depending on their country of origin, an EU wide solution is asked for, preferably one targeting the companies rather than passengers.

Information about the environmental protection aviation does is not really available, unless specifically searched for.

8.2 Gender balance

In general, when discussing jobs in aviation, the respondents mainly think about the customer service jobs at airports, and other things specific to aviation such a pilots and cabin crew.

The question about diversity in aviation brings up the fact that it's not something people really think about. Over 36% of the Finnish respondents and 41% of the Scandinavian respondents say diversity is not something they have thought about in aviation However, the ones who have thought about it, view aviation as a diverse field.

When examining the results for the gender balance in different areas, the divide of men being pilots and women being cabin crew is still strong, with maintenance being viewed as a more male-dominated field, and customer service more female-fronted. Security is deemed quite balanced in terms of gender divide.

In terms of working in aviation, the responses follow the same pattern regardless of the country of the respondent, but for each person saying it would depend on the job if they'd want to work in aviation, there is another person saying aviation is not an industry for them. Environmental issues are also a reason for people not wanting to work in aviation, along with age and health issues preventing employment. Things such as being able to travel and having a multicultural working environment are reasons for people to pursue a career in aviation.

In general, when discussing jobs in aviation, the respondents mainly think about the customer-facing jobs, and other things specific to aviation such a pilots and cabin crew. The main issue in these positions alongside of not meeting the health and eyesight requirements, are the working hours. People also report having a fear of flying, which prevents working these jobs.

9 Discussion

When considering the reliability of this study, the number of respondents in the survey must be addressed. The original plan was to reach 1000 respondents in each country the survey was shared in, but the final number of responses was 636 in total. Of those 636, 501 respondents were Finns, 93 were Swedes, 27 were Norwegian and 15 were Danes. Following that, the number of interviews conducted did not reach the target, which was set at four interviews per country, either.

Some of the data gathered in the survey can still be used and add value, such as the responses written in the free-text field where the respondents were given a chance to add anything they wish to the topics presented in the survey. The responses of people living in Finland can also be singled out and used to compare the Finnish responses to the responses collected in the previous study from other countries, considering the smaller population of Finland in comparison to the population of the countries examined earlier.

The interviews also present valuable information on the public opinion towards aviation, as well as the focus group interview conducted with future aviation professionals studying at Haaga-Helia.

The low number of responses is linked to the limitations in sharing the survey. It was challenging finding a platform where people could be made aware of the survey in the first place, and then getting them to take the survey. Paying survey-takers was not an option for this survey as there was no budget associated with it, and getting the survey spread via official channels was difficult as different organisations only spread surveys relating to their field of expertise and which they deem important. The survey of this thesis did not fall into those categories.

Conducting interviews proved difficult as well, since people were not responding well to emails and finding suitable times for the interview was not easy with the ones who took the time to answer the emails. Eventually, COVID-19 also made it difficult to organise further interviews.

If I were to repeat this research, I would reconsider the number of respondents needed for the survey and make the survey shorter. With a shorter survey, collecting the responses may have been easier, as now the statistics show that the survey has been opened 2653 times, but only roughly a fourth of the respondents completed the survey.

Another thing I would do differently is the interviews. The thesis was originally intended to be done by two people, and with a pair the workload would have been manageable, with the other person focusing on the survey and the other on the interviews. If I were to repeat the process, I would either do only the survey, or only the interviews, not both.

In the end, the research presented here can be used for its intended purpose, and sheds light on how the public in Northern Europe views the aviation industry.

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Appendices

Appendix 1. Survey questions and numerical results

1. Please select your country

Number of respondents: 636

	n	Percent
Finland	501	78,77%
Sweden	93	14,62%
Norway	27	4,25%
Denmark	15	2,36%

2. Please select your gender

Number of respondents: 636

	n	Percent
Male	233	36,64%
Female	372	58,49%
Other	14	2,2%
Prefer not to say	17	2,67%

3. Please select your age group

Number of respondents: 636

	n	Percent
15-17 years	23	3,61%
18-34 years	304	47,8%
35-55 years	250	39,31%
55 years or older	59	9,28%

4. Please select the number of children you have

Number of respondents: 636

	n	Percent
None	399	62,73%
1	62	9,75%

2	119	18,71%
3	41	6,45%
4	7	1,1%
5 or more	8	1,26%

5. On average, how many flights do you fly in a year approximately?

Number of respondents: 636

	n	Percent
0-10	503	79,09%
11-20	80	12,58%
21-50	40	6,29%
50-100	9	1,42%
101-200	2	0,31%
more than 200	2	0,31%

6. Approximately, how many per cent of these flights are for business?

Number of respondents: 636

	n	Percent
0%	371	58,33%
10%	58	9,12%
20%	23	3,62%
30%	17	2,67%
40%	9	1,42%
50%	60	9,43%
60%	10	1,57%
70%	20	3,15%
80%	32	5,03%
90%	20	3,14%
100%	16	2,52%

7. On a scale from 0 to 10, how negatively would a 10% increase in airline ticket prices affect your flying?

Number of respondents: 636

	n	Percent
0 - not at all	193	30,35%
1	54	8,49%
2	72	11,32%
3	66	10,38%
4	56	8,8%
5	71	11,16%
6	41	6,45%
7	27	4,25%
8	25	3,93%
9	10	1,57%
10 - extremely negatively	21	3,3%

8. To what extent do you agree or disagree with each of the following statements about travel and the environment?

Number of respondents: 636

	Agree	Neither agree nor disagree	Disagree	Not Sure
I believe that airlines have a plan to reduce carbon emissions	34,12%	13,21%	37,26%	15,41%
I believe that car companies have a plan to reduce carbon emissions	38,84%	15,88%	33,8%	11,48%
I believe that rail companies have a plan to reduce carbon emissions	34,12%	21,07%	29,24%	15,57%
I believe that cruiselines have a plan to reduce carbon emissions	20,91%	15,41%	48,27%	15,41%

9. To what extent do you agree or disagree with each of the following statements about travel and the environment?

Number of respondents: 636

	Agree	Neither agree nor disagree	Disagree	Not Sure
I trust airlines to invest in more environmentally-friendly technology and operations	51,1%	16,67%	24,68%	7,55%
I trust car companies to invest in more environmentally-friendly technology and operations	54,72%	16,98%	22,17%	6,13%
I trust rail companies to invest in more environmentally-friendly technology and operations	49,37%	23,43%	16,98%	10,22%
I trust cruiselines to invest in more environmentally-friendly technology and operations	33,33%	20,13%	33,65%	12,89%

10. To what extent do you agree or disagree with each of the following statements about travel and the environment?

Number of respondents: 636

	Agree	Neither agree nor disagree	Disagree	Not Sure
People who choose to live near airports have to accept a level of aircraft noise	82,08%	11,16%	4,72%	2,04%
People who choose to live near main roads have to accept a level of noise that traffic brings	78,14%	12,11%	8,33%	1,42%
People who choose to live near train tracks have to accept a level of noise train traffic brings	82,7%	11,95%	4,25%	1,1%
People who choose to live near harbours have to accept a level of noise that the traffic brings	82,23%	11,16%	4,56%	2,05%

11. Do you trust the government to spend the money from environmental taxes on environmental protection programmes?

The following questions are about environmental taxes. Environmental taxes, also known as green taxes, are taxes designed to discourage polluting behaviour and encourage people or businesses to operate in more environmentally friendly ways

Number of respondents: 636

	n	Percent
Trust a great deal	39	6,13%
Trust a fair amount	263	41,35%
Not trust very much	223	35,07%
Not trust at all	90	14,15%
Don't know	21	3,3%

12. To what extent do you agree or disagree with each of the following statements?

Number of respondents: 636

	Agree	Neither agree nor disagree	Disagree	Not Sure
It is right for passengers to pay more tax on air tickets in order to protect the environment	61,79%	16,04%	19,81%	2,36%
It is right for car users to pay more road tax in order to protect the environment	52,99%	17,45%	25,79%	3,77%
It is right for train users to pay more tax on train tickets in order to protect the environment	30,98%	21,38%	43,71%	3,93%
It is right for cruise passengers to pay more tax on cruise tickets in order to protect the environment	64,62%	15,72%	15,57%	4,09%

13. To what extent do you agree or disagree with each of the following statements?

Number of respondents: 636

	Agree	Neither agree nor disagree	Disagree	Not Sure
I try to fly with airlines which I know have taken action to protect the environment	33,49%	35,06%	22,8%	8,65%
I have chosen not to fly with a particular airline because of its record on the environment	14,47%	26,57%	50,94%	8,02%
I have considered other transport than flying, or not flying at all, because of environmental concerns	48,27%	13,05%	37,74%	0,94%
I would pay more to fly if I could be sure the extra money was spent on environmental protection	56,6%	18,24%	20,13%	5,03%

14. To what extent do you agree or disagree with each of the following statements about air travel?

Number of respondents: 636

	Agree	Neither agree nor disagree	Disagree	Not Sure
Increased passenger rights come at a cost of increased ticket prices	36,32%	27,99%	17,61%	18,08%
The government should do more to increase capacity at airports	24,21%	34,91%	25,31%	15,57%
The government should do more to regulate airlines and airports to reduce their carbon emissions	68,4%	18,87%	7,86%	4,87%
The government should adopt policies which support and promote our aviation industry	36,79%	30,5%	20,6%	12,11%

15. Overall, do you think that more air connections between your country and the rest of the world would be a positive or a negative thing?

Number of respondents: 636

	Percent
Very positive	27,83%
Somewhat positive	31,29%
Neither positive nor negative	19,03%
Somewhat negative	13,36%
Very negative	4,87%
Don't know	3,62%

16. Why do you think more air connections is a positive thing? Please select all that apply.

Number of respondents: 376, selected answers: 1511

	Percent
More air connections create jobs and prosperity	77,39%
More air connections bring visitors and money	82,71%
More air connections give access to global markets and trade	73,14%
More air connections build links between developed and developing nations	48,67%
More air connections give people opportunities to visit other countries	71,81%
More air connections would give us a competitive advantage over other countries	42,55%
Other	5,59%

Answers given into free text field

Option names	Text
Other	The world becomes more educated
Other	medicinal cargo is easier to deliver in case of short lived products e.g. radiopharmaceuticals and cytotoxic drugs

Other	Learning
Other	Learning & schooling, family ties
Other	When travelling one does not have to take connecting flight somewhere else if there are proper connections available from A to B.
Other	It would save me from 14 hour long train rides just to get special medical care.
Other	A straight connection is better than a layover - but only if the route is popular enough so that the plane won't have to fly half full.
Other	The country is in such a remote location, air traffic is necessary for economics
Other	We can have a better environmental impact due to aviation regulation.
Other	More direct flights, so flying less
Other	More air connections encourage new technology
Other	Not quite sure if it works like this, but if there were more straight connections to countries instead of changing planes while travelling would be nice, so that you still have a respectable airline company you're trusting
Other	Due to geological connection it's more economical & ecological than longer paths.
Other	More DIRECT connections would reduce the need to use connecting flights (which creates more emissions than flying directly)
Other	over all positive
Other	The geolocation of Fin differs from other Nordic countries so unless we build a tunnel to Europe, air traffic serves us best in all abovementioned targets
Other	Gives us innovation to evelope our cities and countryside
Other	More non-stop flights reduce pollution
Other	ables carrying necessary items (medicine, air purifying systems...) in cargo
Other	Easier access to different parts of other countries.

17. Why do you think more air connections is a negative thing? Please select all that apply.

Number of respondents: 116, selected answers: 226

	n	Percent
More air connections would create more pressure on security	22	18,97%
More air connections would put more pressure on immigration	13	11,21%

More air connections would cause more delays	14	12,07%
More air connections would put pressure on roads and rail services	13	11,21%
More air connections would put pressure on airport facilities	18	15,52%
More air connections would make our air space busier and less safe	28	24,14%
More air connections would be harmful to the environment	106	91,38%
Other	12	10,34%

Answers given into free text field

Option names	Text
Other	More air connections would be harmful for the indigenous people of Sapmi
Other	More Co2
Other	The answer options were not possible to see In full form. More pollution is my answer
Other	In my opinion we don't need more air connections. Finland's such a small country and not very useable as a landing spot for passing flights either.
Other	takes away travellers travelling via land (bus, trains)
Other	Options do not show on mobile
Other	Would cause lower usage rate in planes
Other	More air connections would be harmful to airline business
Other	I can't see options on my phone
Other	Can't see options with Android. Negative as causespollution
Other	Over tourism in some areas of Finland-especially from China.
Other	As long as there is malnutrition how come it is right that we fly around fir fun? Noise problems annoy me

18. Overall, how well balanced do you think the aviation industry is in terms of diversity and inclusion?

In addition to environmental concerns, we would also be interested in how you view the aviation industry in terms of diversity and inclusivity.

Number of respondents: 636

	Percent
Extremely diverse	2,67%
Quite diverse	16,2%
Balanced, but not truly diverse	23,11%

Somewhat diverse	12,58%
Not at all diverse	8,02%
I've never thought about it	37,42%

19. What is your perception of how gender balanced certain roles are in the aviation industry?

Number of respondents: 636

	More than 90% women	More than 75% women	Quite balanced	More than 75% men	More than 90% men	Not Sure
Pilots	0,31%	0,79%	5,03%	41,82%	47,96%	4,09%
Cabin Crew	18,4%	66,35%	10,85%	1,1%	0,63%	2,67%
Maintenance	0,47%	4,72%	10,53%	39,47%	35,22%	9,59%
Customer Service	11,16%	56,45%	27,67%	0,47%	0,16%	4,09%
Security	0,16%	0,31%	36,95%	42,45%	13,84%	6,29%

20. How likely would you consider a career in aviation? Please select all that apply

Number of respondents: 636, selected answers: 764

	n	Percent
I already work in aviation	63	9,91%
It would be very appealing to me	90	14,15%
It would depend on the job	251	39,47%
It's not an industry for me	227	35,69%
I wouldn't want to, due to environmental issues	83	13,05%
The industry is not diverse enough for me	22	3,46%
Other	28	4,4%

Answers given into free text field

Option names	Text
Other	It is complicated

Other	I’m too old to change carrier
Other	I'm toi old
Other	Retired already...
Other	applied, but due health not eligible
Other	Retired
Other	I work in aviation indirectly through tourism
Other	retired
Other	I would love to work in aviation if I would meet the health requirements.
Other	Would require so much new training that career change is not appealing to me, even though there might be interesting jobs
Other	Not interested
Other	The lack of diversity would motivate me to work in aviation
Other	I already have a career I'm happy with (Engineer).
Other	I'm too old for aviation :)
Other	5%
Other	claustrophobic and fear of heights
Other	Aviation student, so hopefully in a year
Other	Too old
Other	I used to work in aviation
Other	too old for that
Other	I'm architect
Other	I have previously worked in the industry

Appendix 2. Interview questions

Background information of the interviewee:
Gender?
Age?

What are the first things coming to your mind when thinking about aviation?

How do you see the status of aviation today?

What role does aviation have in people's lives in your opinion?
Why?

What do you think of the current discussion about aviation and environmental impact?

Why is aviation such a hot topic at the moment?
Why?

How does aviation compare to other modes of transport in its environmental impact in your mind?
Why?

What are your preferred methods of transport for different trips? Why?

What is the future of aviation from environmental perspective?

What is the need for aviation in the future?

What should aviation industry do to improve its image from sustainability perspective?
Why?

How is the gender balance in aviation like?

Is the gender balance in aviation something that needs to be changed? Why?

If there’s a need for changing the gender balance in aviation, what could be done about it?