Millennials' awareness and attitudes towards flying

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Abstract

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Sustainably has started to concern an increasing amount of customers. The critical way of thinking affects buying habits and reach all the way even to leisure travelling by air. As the personal carbon footprint has started to interest as well others than environmentally-conscious consumers, people are trying to find alternative ways to mitigate emissions or even compensate them.

The thesis is commissioned by "The steps towards responsible tourism" -project that aims to develop an education program. The purpose of the thesis is to get more information about whether Millennials are aware of the current global environmental and climate issues caused by flying and whether they take any actions to reduce their own carbon footprint. In addition to those, the thesis aims to find out what constrains and motivates sustainable travelling actions. The thesis is conducted as a research-oriented type, utilizing a quantitative questionnaire to gather the information from the target group, the travelling Finnish Millennials. The quantitative questionnaire is attached as appendix 1.

The theoretical framework consists of definitions of the terms, environmental issues in aviation and Millennials' flying habits and their role as consumers. Also, the aspects of the responsible consumption and its barriers and motivations are briefly introduced.

The findings of the thesis revealed how aware Millennials are about the climate impacts of aviation depending on their age and gender. Most of them neither had the knowledge about the globally caused emissions of flying nor knew how long the carbon dioxide emissions last in the atmosphere. Although, female Millennials aged between 22-27 years old were found to be the most aware and interested in working for more sustainable air travelling habits. The most indifferent were young men and 31-33 years old Millennials.

Attitudes towards flying and key factors driving for the purchase of the flight tickets were found out. Typically, Millennials travel between zero to three times a year. In general, most of the Millennials are worried about aviation's climate impacts. However, the attitude-behaviour gap here is significant as many do not think the impacts of their own flying habits. Most of the Millennials were ready to pay for flying tax although only a few had compensated their flights. Also, some barriers and motivators to choose a more sustainable travelling method were investigated. Sustainable travelling was not considered affordable but seen as equally appealing. Moreover, the term "sustainable travelling" seemed to be vague for many. Outside forces do not have significant influence to choose more sustainable travelling. Only media was found to impact at some level.

The outcome gives valuable insights into the current state of Millennials' awareness and attitudes towards flying. This can be used by the commissioned project in the program contributing more responsibility in the travel and tourism business in Finland.

Keywords
Aviation, attitude-behaviour gap, climate impacts, Millennials, sustainability

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1   Introduction

International tourism has been growing for seven years in a row, giving a significant contribution to the worldwide economy (UNWTO 2019, 1). According to ATAG (2018a), the aviation and tourism industry are a direct and indirect employer for 65.5 million people worldwide. Flying has made the transportation of commodities and people fast even for long distances, allowing to explore new destinations and cultures easier. This globalization has enabled stronger commercial and social interaction. (Niemistö, Soimakallio, Nissinen & Salo 2019, 13.) However, sustainability in the hospitality and tourism industry, especially in the airline industry is a hot potato.

Due to the inexpensive nature of airplane tickets, tax-free fuel and VAT-free prices on international flights, flying is a usual way of travelling (SYKE 2019a). Millennials, a generation born between 1982-2000 (Howe & Strauss 2000), are currently the most frequent travelers (Pendergast 2009, 11). Millennials represent a significant economic impact in tourism globally (Cavagnaro, Staffieri & Postma 2018, 32), therefore their preferences should be carefully considered. ATAG (2017, 2) has estimated air transportation to move 3.8 billion passengers annually. Tourism is vulnerable to climate change and environmental issues, and at the same time contributing to it. As some cultural and natural heritage destinations' competitiveness is dependable on tourism, the impacts of climate change will affect the attractiveness of the destination and lessen the economic opportunities (UNWTO s.a.). Carbon emissions from the airline industry need to be controlled to slow down global warming. The impact of air transportation is currently 2-3 % (EASA 2019, 86; SYKE 2019a). Even though some airline companies like SAS from Sweden has woken up and taken actions by redusing their air transportation due to national "flying shame", it is expected that in 15 years the current air travelling will be doubled globally (Hoikkala & Magnusson 2019; Tiede 2019, 11).

Individual consumers have started to pay more attention to their carbon footprint. Sustainable purchase behavior is not only considered in the flying habits since 52 % of global travelers say that they are more likely to choose a destination based on its social or environmental impact (Booking.com 2015). Furthermore, Millennials have a growing knowledge of environmental issues and can affect what kind of companies they decide to support with their purchasing power. This is a straight indicator for companies to consider more corporate social responsible actions in their business strategies.

The Intergovernmental Panel on Climate Change (IPCC) has stated than human activities have caused approximately 1.0°C of global warming above pre-industrial levels, and the impacts of that on natural and human systems have already been observed on a large

scale. These impacts include extreme temperatures, heavy precipitation, increased drought, sea-level rise, loss of biodiversity and ecosystems. (IPCC 2018.) Researchers together with IPCC have calculated that by 2050 the human activity carbon emissions, including air travel, can be a maximum of 6 milliard tonnes if global warming is aimed to keep below 1.5°C. That temperature has been estimated to keep the hazardous climate changes at bay. (Niemistö & al. 2019, 47.)

1.1 Thesis objectives and research question

The information regarding environmental issues are better and better known by everybody but the taken actions still seem to be rather low. According to a barometer conducted among the young, almost 70 % of the participants said they are worried about climate change (Terävä 2018). Therefore, the objective of the research is to investigate, what is the awareness level of Finnish Millennials about the environmental impacts of aviation industry and does it affect their flying habits and attitudes. Besides, the research aims to find out what could increase the sustainable actions among the Millennials when they consider flying.

Environmentally-friendly tourism and travel have started to interest consumers in increased amounts and the companies in the tourism sector have started to take more actions to attract customers and build a better, "greener" brand image. Due to this, the purpose of the thesis is to find out the motivations and barriers behind environmentally conscious travel behavior. Consequently, this can help airline companies to figure out actions to improve their environmental sustainability and thus keep attracting Millennials in the future.

The main research question is:

- How aware Millennials are about the environmental impacts of their flying habits?

The sub-questions are:

- Does the awareness of the impacts lead to more sustainably friendly actions when considering travelling by air?
- What are the motivations behind environmentally conscious air travelling behavior?
- What are the barriers behind environmentally conscious air travelling behavior?

The thesis is a research-oriented and to obtain answers for the research questions. A quantitative online survey is conducted to gather information from the travelling Finnish Millennials. The survey aims to research how aware Millennials are about the environmental issues caused by the aviation industry, and does the awareness enhance the sustainable attitudes

and actions on their flying habits. The quantitative survey is the most suitable method to collect the information since the target is to get information from a large group of people.

1.2 Thesis commissioner

The thesis is commissioned by "The steps towards responsible tourism" -project that aims to develop education program. The finalized thesis can be utilized in the future training means or study material in the educational model. In addition, the thesis aims to give valuable insights to the daily discussions regarding how tourism industry has affected on climate change and how climate change will effect on tourism industry. Program objects to contribute more responsibility in travel and tourism business in Finland. In addition to develop responsibility, the program wants to proactively work with the challenges occurred due to the growth of travel and tourism business, such as over-tourism, climate change and socio-cultural issues. The target groups of the program are the entrepreneurs, executives, managers and employees working in the tourism industry. The project is coordinated by JAMK University of Applied Sciences (UAS) with help of Haaga-Helia UAS, XAMK UAS, University of Oulu, and Multidimensional Tourism Institute/University of Lapland. (JAMK.)

1.3 Narrowing down the topic

The thesis topic is narrowed down on sustainability issues of aviation, mainly due to increased critics it has faced besides all the other sectors within tourism and travel industry. To be precise, the theoretical framework focuses on the environmental impacts and carbon emissions caused by the flying action rather than other issues e.g. noise problems and water pollution, as it has gathered the most harsh comments.

Millennials are chosen as the target audience for the research since they are the generation driving the travel industry and most likely to spend money on traveling (Varriacchio, Kosciulek & Stickles 2019). The thesis will cover the characteristics both of international and Finnish Millennials, however the questionnaire will be gathering information only about Finnish Millennials. This fact is chosen to ensure more allocated and coherent results. In addition, the thesis is focused on leisure travelling over business travelling, since that type of travelling is based on less self-will on most cases.

1.4 Thesis structure

The thesis structure follows a chronological order, starting first with the introductions, where objectives and research questions are presented. Literature review takes a big portion, moving to research methods and the quantitative method itself. Results were analysed based on the questionnaire findings, followed up with a discussion and conclusions.

The theoretical framework is separated into two larger sections: climate issues of aviation and characteristics of Millennials. Climate issues focuses on the carbon dioxide emissions and the development of the engines and flying controlling which have enabled reductions in the emissions. The literature regarding Millennials exposed who they are, how do they behave, what drives for their buying and travelling habits. Here, theory about international and Finnish Millennials are both included. Finally, barriers and motivators about sustainable travelling is discussed with attitude-behaviour gap.

In the chapter about research methods, both qualitative and quantitative, are explained and more about how to conduct a research is introduced. As quantitative method was chosen for the purposes of this thesis, it has been given more in-depth examination. The chapter includes the implementation, sending and analysing process, the results and a brief summary about them, coming up to the discussion. Final conclusion about the thesis and research process are drawn, giving suggestions for future studies, as well considering the reliability and validity of the research.

2 Climate impacts of aviation

Aviation industry has faced criticism during the recent years mostly due to the negative environmental impacts: air pollution near airports, water pollution due to de-icying, spread of invasive species or emergent diseases. The biggest concern of the pollution issues is the de-icying of aircrafts and runaways, followed by fuel spills. (Kolmes 2018b, 260.) However, the concern over carbon dioxide emission issues have taken over the global news, making it the biggest cause of worry from the consumers' and shareholders' point of view.

The literature regarding sustainable tourism have already been discussed since 1970, and new articles and books are released frequently. However, the term "sustainable tourism" has changed and evolved over time. In the past, the term only considered the negative impacts of tourism and the forms of eco-nature-based tourism. Furthermore, the balance between economic, social and environmental goals were not considered. (Ruhanen, Moyle & Moyle 2019.) However, 46 % of travelers state "sustainable travel" meaning eco-friendly or green accommodation for them (Booking.com 2017).

The recent, global acknowledgements for the need of sustainable developments include the aviation industry's agreement in 2008, in which are set three main goals: growing fleet fuel-efficiency of 1.5 % in annually until 2020, capping net carbon emissions through carbon neutral growth starting from 2020 and halving carbon emissions by 2050 (ATAG 2016, 7). On top of these the first universal climate deal i.e. Paris Agreement in 2016, and the UN's Sustainable Development Goals in 2015, where environmental, economic and social aspect are aimed to be balanced are trying to work for more sustainable businesses (Ruhanen, Moyle & Moyle 2019).

Sustainable aviation is referred as a coherent coalition of airlines, airports, aerospace manufacturers and air navigation service providers, with a goal to reduce noise and carbon dioxide emissions, improve air quality and secure the benefits to society that aviation enables (Jefferson 2018). Sustainable transportation should contribute to increasing the social-economic welfare without excessively using natural resources, damaging nature and putting people's health in danger (Janić 2017). However, the current global travelling habits and the lack of proper regulation of sustainable practises within the aviation industry has worsen the problem. As a solution, IPCC and IATA has suggested that improved and centralized air traffic control in fewer entities, straightening the air routes, and avoidance of delays on take offs and landings would reduce the carbon dioxide gas emission associated with commercial air operations. Improved air traffic control could reduce the emissions by 6-12 %, and operational improvement e.g. optimizing speed, reducing additional weigh, improving

load factors, reducing nonessential fuel onboard, limiting the use of auxiliary power unit and reducing taxiing would reduce emission 2-6 %. Reduction of 25 % in the emissions and economic impacts could be achieved with flight trajectory changes to optimize flight path (Kolmes 2018a, 243-244.)

In terms of defining corporate social responsibility, the earliest findings are dated in early 1970's. Davis (1973) described it as "the firm's consideration of, and response to, issues beyond narrow economical, technical, and legal requirements of the firm". From that it has evolved to "a management concept where companies have integrated social and environmental issues in their business activities and interactions with their stakeholders". (UNIDO 2019.) In addition, many multinational corporations, such as Nike and General Electric have defined CSR in their own way and have explained what it means for their businesses (Crane, Matten & Spence 2014). In the aviation field, some companies have a long history of CSR reporting. For example, Finnair (2017, 126) has reported according to GRI Guidelines about their CSR performance since 2008, and British Airlines (2008) their version as well since 2008. Nevertheless, the supply and demand theory of CSR has suggested that companies should only supply the type of CSR that consumers and other stakeholders demand in order to maximize profits (Kuokkanen & Sun 2018, 1).

Regardless of many definitions, United Nations Industrial Development Organization (UNIDO) also has summed up the key issues which covers the areas of CSR activity: "environmental management, eco-efficiency, responsible sourcing, stakeholder engagement, labour standards and working conditions, employee and community relations, social equity, gender balance, human rights, good governance, and anti-corruption measures" (UNIDO 2019). According to Anderson, Dahlquist, Gaver (2018, 16-17) the following four characteristics have been linked mostly with the term of CSR: environmental CSR (i.e. using recycled materials in the products and packaging), philanthropic CSR (i.e. donating profits to charities or NGOs), ethical CSR (i.e. commitment to ethical business practises) and economic CSR (i.e. commitment to fair labour practises and treatment). Also consumers have started to be more critical towards companies and due to the increased awareness of CSR they prefer the ones practising transparent CSR. According to Merriam-Webster awareness is defined as "the quality or state of being aware: knowledge and understanding that something is happening or exists."

According to ATAG (2017, 2), the amount of air passengers will grow by 5 % each year and emissions by 3 %. In Europe, EASA (2019, 17) has estimated the amount of passengers grew by 50 % during years 2005-2017, equalling 890 millions of passengers on commercial flights. In this thesis, the focus point is on the environmental CSR of the aviation industry.

When considering the environmental aspect of CSR in aviation some thoughts about green-washing can occur. However, many airline companies have started to integrate more about CSR aspects into their business models and presenting the results on their sustainability reports, thus showing the real actions they have taken to improve their carbon footprint.

2.1 Aviation Fuels

The technical sides of an aircraft has faced a lot of changes and improvements during the decades but the use of fossil fuels has remained the same (EASA 2019, 41). However, some improvements in the aircrafts' fuel-efficiency and fuels have been executed, and the aviation industry has been able to surpass the set 1,5 % annual fuel efficiency goal to 2,4 %. (Kolmes 2018a, 242; ATAG 2016, 8.) As Niemistö & al. (2019, 35) states, new fleet are 15-20 % more efficient in the use of fuel. For example, Boeing 787 Dreamliner, launched in 2011, uses 20 % less fuel than a comparable sized aircraft (Boeing 2019; Tiede 2019, 11).

Some companies have tried to tackle the fuel problem by inventing alternative, sustainable aviation fuels (SAF). These types of fuels are defined as any fuels with potential to produce less CO^2 emissions on a life-cycle basis compared to kerosene (ATAG 2017, 4; Niemistö & al. 2019, 36). Life cycle refers to steps such as equipment needed to grow the crop, transport the raw goods and refining the fuel (ATAG 2017, 4). These fuels are produced from renewable resources, which also reduces the emissions by 60-80 % compared to fossil fuels (ATAG 2017, 4; Kolmes 2018a, 246). Alternative fuels are usually sourced from re-newable organic material, for example hydrogenated fats and plant oils or recycled waste. The term "sustainable fuel" is preferred over "biofuels" in the aviation industry, as it would be unsustainable to use edible crops, palm oil or other raw materials that require deforesta-tion (ATAG 2017, 6; Niemistö & al. 2019, 36). In order to use these fuels, SAF must behave like fossil fuel during the combustion process. SAF can be blended with fossil fuels depend-ing of the production of the fuel, however the maximum blending ratio is 50:50. There are currently six SAF production pathways. (EASA 2019, 41; Niemistö & al. 2019, 36; Trafi 2019, 54.) The newest findings had proposed the use of renewable cellulose fuel, which advantage is its energy content that allows the aircraft to fly longer and carry bigger cargo. (Tiede 2019, 11). Also, according to EASA (2019, 8) the use of zero-emission alternative "electrofuels" has been discussed.

The main problem of all sustainable fuels still lays on the expensiveness of the sustainable raw materials and production, and as biokerosene is 3-5 times more expensive. In addition, other main obstacle is a low production capacity, as 33 % of operating costs of an airline company is spent on fuel (ATAG 2018; Keränen 2018; Niemistö & al. 2019, 3). The expec-tation is that by 2025 renewable fuels will cover only 2 % of total need of fuel. However, the

European Commission has set forth specific measurements and sub-quotas to advocate innovation and introduce more developed sustainable fuels. In addition, they have set incentives to use these fuels. In the framework of the European Advanced Biofuels Flight path, the goal is to reach a consumption of 2 million tonnes of biofuels by 2020, which counts for a 10 % share in the transportation sector. (SYKE 2019a; Trafi 2019, 24.) Committee on Aviation Environmental Protection (CAEP) has ambitiously evaluated that international aviation fuel demand could be able to be fulfilled by using sustainable aviation fuels by 2050 (Abeyratne 2017, 52).

To increase the use of renewable fuels more promptly, it is proposed that after 2020 it would be an obligation for fuel suppliers to sell a share of renewable and low-emission fuels, and increase it gradually. This would mean at least 1.5 % increasement in 2021 to at least 6.8 % increment by 2030. (Trafi 2019, 24.) Moreover, the experts have stated that adding a tax on fossil fuels would motivate airline companies to invest in greener technology and switching on alternative fuels (Niemistö & al. 2019, 45).

2.2   Carbon dioxide emission

Kerosene, which is used as the fuel in the aircraft, has been globally tax free since 1944 agreement (Lahti 2019; Niemistö & al. 2019, 42). Criticism has pondered whether it should be taxed as any other fuel. The biggest section, 70 % of the aircraft's emission is carbon dioxide, 30 % water vapor, and less than a percent consists of nitrogen oxides, sulfur oxides, non-combustible and partially burnt hydrocarbons, carbon monoxide and particular matter. Figure 1 illustrates these emissions in kilograms from a point of view of a one hour flight. The reactions and impacts of different compounds are still unknown. (Niemistö & al. 2019, 22; EASA 2019, 22). The problem with CO_2 is that it accumulates in the atmosphere and remains there hundreds to thousands of years (EASA 2019, 87).
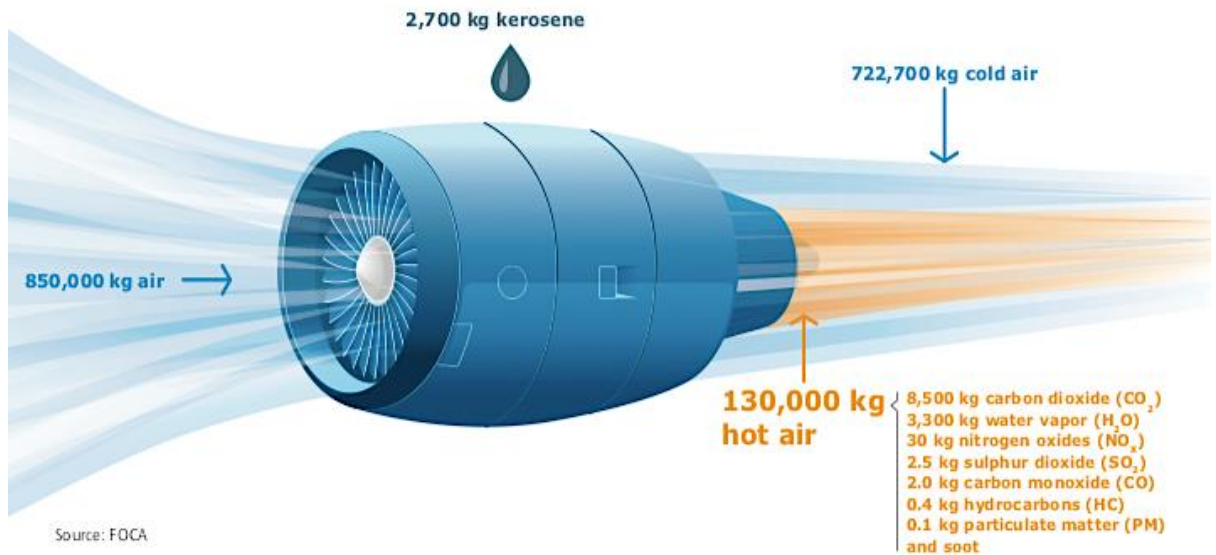
Figure 1. Emissions from a typical two-engine jet aircraft during 1-hour flight with 150 passengers (EASA 2019)

In order to stabilize global warming at 1.5°C, IPCC has estimates that global net CO^2 emissions would have to decline 45 % from 2010 levels by 2030, and reach net zero roughly by 2050 (EASA 2019, 86). Tourism is responsible for around 5 % of global emissions (UNWTO 2008a, 13), whereas aviation causes 2-3 % as mentioned earlier. The global emissions of aviation are estimated to be 0.9 billion tonnes of carbon dioxide in a year. All types of emissions are about to double in the future (see figure 2), if the aviation technology and the used fuels do not take an enormous leap into improvement. To put this in comparison, Germany causes as much emissions as the aviation industry in a year, and Finland somewhat lower with 55.5 million tonnes of carbon dioxide equivalent (CO^2e), which is a united used for carbon footprint. (Lahti 2019.)
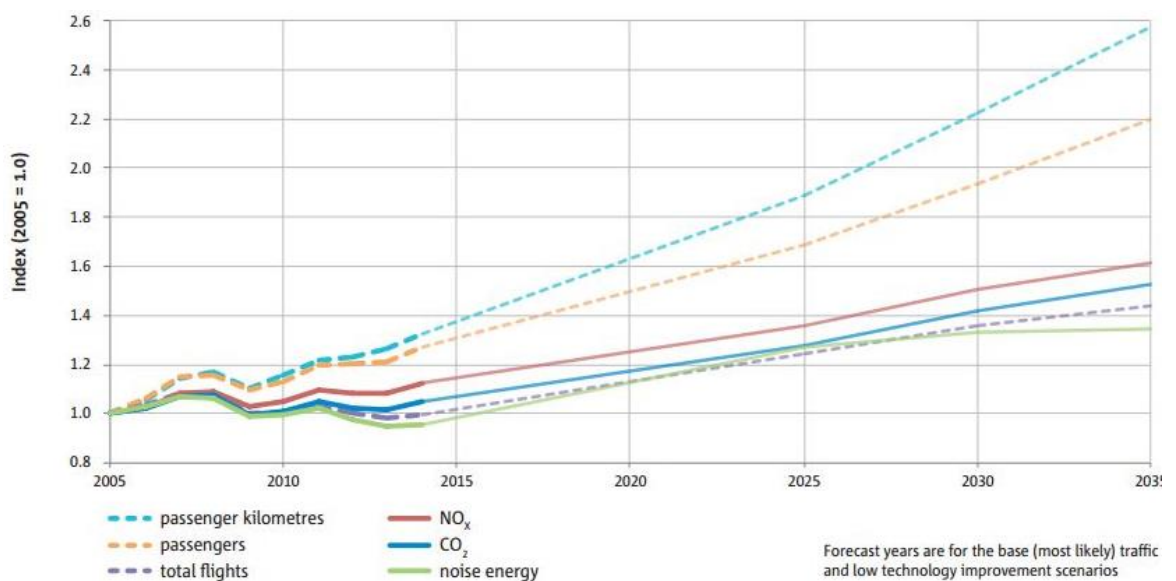
Figure 2. Forecast in noise, CO^2, NOx, passenger numbers and flight during 2005-2035 (Aviation Environment Federation 2016)

The carbon emission problem is not only limited to the burning the fuel in combustion engine, as carbon dioxide is emitted at each stage in a distribution chain (see figure 3). This makes a life cycle of a fossil fuel much more polluting. As mentioned earlier about SAF, it could be able to help in reach of carbon-neutral goals. Carbon dioxide absorbed by plants during the growth period is approximately equivalent to the amount of CO^2 emitted when the fuel is burned in a combustion engine. In addition SAF production is not limited only to geographical locations where oil can be drilled, making it more accessible worldwide. Moreover, the raw materials suitable for SAF can be grown in areas that are unviable for food crops, generating additional jobs and economic benefits, especially in the developing countries. (ATAG 2017, 4-5, 7.)
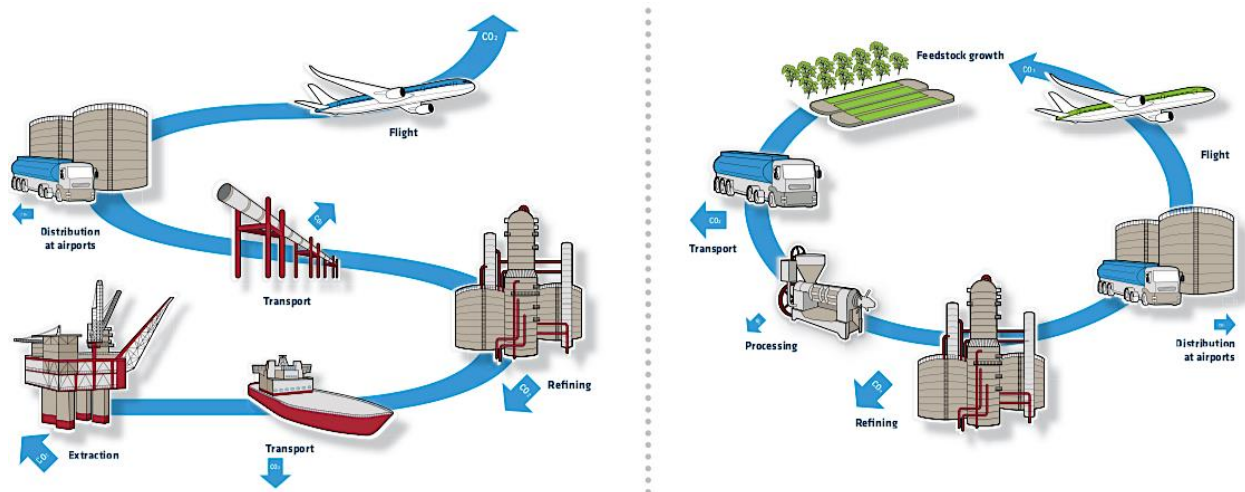
Figure 3. Carbon lifecycle diagram of fossil fuels and SAF (ATAG 2017)

Even though the emissions have increased enormously during the past years, the EU has set climate and energy targets for 2030 and 2050 using the year 1990 as the base for the comparison. For example, the 2020 targets are to cut 20 % of greenhouse gas emissions, increasing energy from renewable sources by 20 % and improving energy efficiency by 20 %. (EASA 2019, 26.)

2.3 Emission calculation and compensation

In the report of ATAG (2018b, 6) is stated that 57 % of international tourists prefer to travel by air (see figure 4). However, individuals are switching to eco-friendly products and more environmentally conscious behavior in order to reduce their personal carbon footprint (Chaudhary & Bisai 2018). Greenhouse gases, primarily carbon dioxide emissions, are the biggest influencer for climate change (Kolmes 2018a, 242). Like (Kolmes 2018a, 233) states even if a person takes environmentally-friendly choices in their everyday life and

living, the causes of flying will have a huge impact on their carbon footprint, since aviation industry still uses fossil fuels.
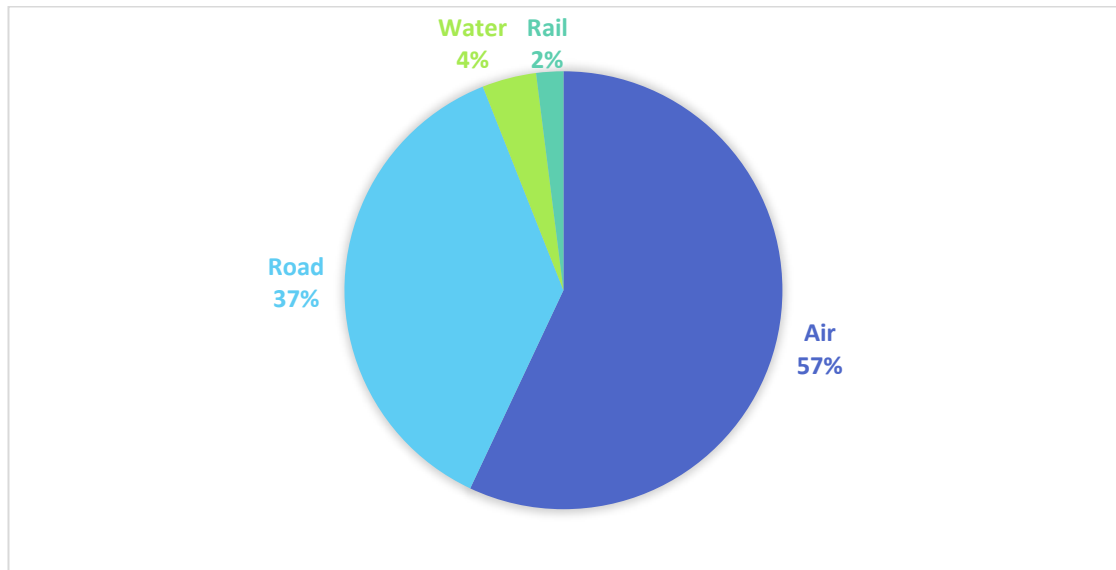

Figure 4. Mode of transportation for international travelers (adapter from UNWTO 2018)

There are two types of functions that address aviation emissions. EASA (2019, 75) has defined them as following: "Emission trading systems (ETSs) generally work towards economy-wide emission reduction targets, while offsetting schemes also compensate for emissions by reductions in other sectors but without the associated cap." A consumer has choices to effect on the emissions caused by flying: changing the destination or travelling method, choosing not to travel, or to compensate for the effects of flying (Niemistö & al. 2019, 3). New businesses have emerged and made possible for travelers to offset their emissions. Calculators are provided by the International Civil Aviation Organization (ICAO), airline companies, and different organizations and communities through their website (Niemistö & al 2019, 25). IATA (2015, 7) has announced a carbon offsetting program, formed of 30 airlines including members such as Kenya Airways, TAP, Sri Lankan Airlines, Thai Airways, South African Airlines and Mango Airlines. This still presents a rather small number of airlines as worldwide there are over 260 airline companies of which 240 are in co-operation with IATA. (Kolmes 2018a, 235, 242.)

The offsetting calculators works as follows: first the emissions of the route are calculated and then offsetting options are suggested. These options usually include activities that reduce the atmospheric greenhouse gas levels, such as reforestation and land usage projects especially in the developing countries, renewable energy production such as wind power, methane emission abatement or energy efficiency projects. (Kolmes 2018a, 243; Niemistö & al. 2019, 26.)

The flights inside EU has been required to take part in emission trading program CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) run by ICAO, since 2012. Internationally airline companies have agreed to limit carbon emissions by 2020, to a level not exceeding the average emissions rate of 2019-2020. If the emissions go above the set level, they need to be compensated by purchasing removal units from non-aviation sector. However, domestic flights are left out of this agreement. In addition to the emission trading program, CORSIA will launch a voluntary compensating program in 2021. 76 members are volunteering on this, which represents 76 % of the international activity in the aviation field. Experts have proposed an ideology that companies would compensate their employers business trips, and rather consider video meetings and evaluating the real necessity of the trips abroad. (EASA 2019, 9, 49; Niemistö & al. 2019, 42; SYKE 2019a.)

Figure 5 has an example of how some of the carbon emission calculator and offsetting programs work. Finnair has been chosen due to the fact that it is most likely to be among the airline companies that Finnish Millennials choose when travelling. Atmosfair, ICAO and MyClimate are chosen based on their popularity in other reports such as SYKE's reports of air transportation emissions. Flights on the figure 5 are selected to be Economy class seats with no stops. The distance information is based on Finnair's website.

The calculator	Finnair		ICAO		MyClimate		Atmosfair	
Information about the calculator	Only CO2 emission. Radiative Forcing Index (RFI) is mentioned but not included in the calculation. The site includes detailed information how the emissions are calculated. The calculations are based on the actual cargo, passenger and fuel consumption data in the previous financial year. The data is updated four times a year.		Emission calculations includes the combustions emission. The site has also detailed report how the emissions are calsulated.		Calculated emissions include combustion, refining process and transportation. The combustion effects in atmosfair has been taken into account by doubling CO2 emissions. The site has detailed report how the emissions are calculated. The offset options are from certified programs including for example Gold Standard and CDM.		Calculates CO2 emissions and effects of combustion by-product in the upper atmosphere. A cost per a tonne of carbon dioxide is set for 23€. The offset options are from certified programs including for example Gold Standard and CDM.	
Destinations	Emissions	Compensation	Emissions	Compensation	Emissions	Compensation	Emissions	Compensation
Oulu-Helsinki-Oulu (515km one way)	132kg CO2	1 €	137kg CO2	N/A	303kg CO2	7 €	264kg CO2	10 €
Helsinki-Málaga-Helsinki (3356km one way)	450kg CO2	2 €	491.7kg CO2	N/A	1100kg CO2	27 €	1240kg CO2	29 €
Helsinki-Bangkok-Helsinki (7911km one way)	884kg CO2	6 €	591.2 kg CO2	N/A	2600 kg CO2	61 €	4049kg CO2	94 €

Figure 5. Carbon emission calculators (adapter from SYKE 2019)

Norwegian could have been selected due to its popularity among Millennials, however they did not provide any information regarding this even though Atmosfair's calculator showed its own estimations for Norwegians flights. According to SKYTRAX (2019), AirAsia and EasyJet are the most favored low-cost airlines internationally. Therefore, these two could have been selected for the comparison, however, due to the blooming tourism industry in East Asia, and due to the ideology of sustainable consumption being only embraced by affluent, AirAsia does not provide such a service (Minter 2019). EasyJet has previously provided Carbon Offsetting Program called ECO but the calculator or other information regarding the program was nowhere to be found on their website anymore (Caswell 2007).

2.4 Critics of the offsetting programs

Most calculators take only the CO^2 emissions into consideration but other also regard kerosene refining, transport and emission trading, as well as other greenhouse gas emissions. The emission calculations differ by each calculator that are caused by different background information such as distances, aircraft type, amounts in fuel consumption, weight of luggage, passengers and cargo, or determining the occupancy. Most calculators also utilize comparative database when counting the emissions of the aircraft or engine rather than actual information of the consumption and emissions of the aircraft model. Despite using the factual data, calculators cannot be always right as there are variables that cannot be foreseen, such as the weather and traffic might change the routes and distances, as well as the weight of the aircraft varies by the amount of passengers and cargo. (Niemistö & al. 2019, 25-26.)

The ethicality of the offset trading has been discussed, as it amounts to a form of environmental indulgences, permission to continue emitting excessive quantities of environmentally damaging greenhouse without guilt (Kolmes 2018a, 248; Niemistö & al. 2019, 26). ICAO's program has been criticized stating it does not lead to emission reductions but shift the emission responsibility from one sector to another (Abeyratne 2017, 58). Also, criticism has targeted on how effectively these offsetting programs have been executed, as according to Ökö-Institution's report (2016), 85 % of the Clean Development Mechanism compensation programs approved by the UN have not yielded into realistic emission reductions. However, Gold Standard, another certification program, is much tighter on their criterion and WWF encourages people to use their compensation program. The average cost of CO^2e differs by the program: in CDM programs 1,40€, and in Gold Standard programs 4,10€. (Niemistö & al. 2019, 26.) Overall, as the provider of the offsetting program has all rights to choose the prices due to lack of regulation, the range of cost vary from 9 cents to 61 euros per tonne of CO^2e (Lahti 2019).

Other critics regarding the compensation concerns the forestation projects. Many of the offsetting providers run projects in developing countries where the observation for long-term is unsecure. These planted areas might end up logged or destroyed by a forest fire. In addition, some researchers have claimed the planting and forestation to compensate for only a fraction of all emissions. Finding effective solutions for carbon sequestration remains to be still under investigation. (Lahti 2019.)

2.5 Current standards and regulations of aviation emission

ICAO consist of 192 member countries, and they are required to monitor and report the emissions from international flights during 2019-2035 despite whether they belong to the CORSIA program or not. However, after 2027 the system is obligatory for all members, regardless of a few exceptions. (Niemistö & al. 2019, 42.)

The current aircrafts and their engines do need to fulfil some international regulations. The environmental protection committee CAEP, run by ICAO, has set standards for noise and smoke, hydrocarbon, carbon monoxide and nitrogen oxide emissions. The first noise standard was set on 1971, the first regulation concerning emission in 1981, and carbon emission standard in 2017 which will be fully lawful by 2023. Regulation regarding non-volatile PM will be applicable in the start of 2020. (EASA 2019, 29; Niemistö et al. 2019, 34.) New regulations have set standards for airplane CO^2 emissions and fuel-efficiency to apply new aircraft types from 2020 and types that are in-production in 2023. In addition, new aircraft types are not allowed to be produced if they do not follow these limits. The European Aviation Safety Agency with CAEP have provided extensive technical and analytical support in order to reach these goals. (Niemistö & al. 2019, 34; Trafi 2019, 22.) 60 % of the busiest EU28+EFTA (Iceland, Norway, Liechtenstein and Switzerland) countries have fixed an environmental charge in order to incentivise the use of quieter or lower emission aircraft. Some of the charges are used to fund local mitigation measures. ICAO has set guidelines on these charges to focus on local noise/or air quality (NOx) impacts rather than CO^2 related climate change impacts. (EASA 2019, 66.) Nevertheless of the efforts of ICAO, it has been criticized due to engine regulation that includes other emission except carbon dioxide. Carbon dioxide has been identified as the biggest man-made contributor to global warming. (Kolmes 2018a, 242.)

Despite the problems of SAF discussed earlier, The Renewable Energy Directive (RED) in EU has achieved an agreement to regulate fuel supply in the future. The agreement requires fuel suppliers for transportation to ensure at least 14 % of energy to be renewable sourced by 2030. Moreover, the EU ETS provides incentive for airlines using SAF that is following

RED's sustainable criteria. The use of SAF reduces inevitably the emissions resulting reductions of ETS allowances needed to purchase. ICAO has requested its members to put in place coordinated policy actions to speed up development, deployment and use of SAF. (EASA 2019, 48.)

2.6 Air transportation and carbon dioxide emission in Finland

Flying is the most preferred form of international travelling (60%) among Finnish, compared taken travels by ship or ferry (30 %) or by car (8 %). On the other hand, for domestic travelling flying was the least preferred form by only 1 %, whereas car was chosen by 78 %, a train by 11 % and a bus by 9 %. 72 % of all domestic and international flights are made for leisure purposes. (Niemistö & al. 2019, 19.)

Aviation sector in Finland produce 3.2 % of the country's total gross domestic product. In Finland, Finnair Oyj and Nordic Regional Airlines (Norra) with Norwegian are operating almost all domestic flights and 70 % of all international flights. Domestic flights have declined during the past years but international flights have increased, making 80 % of traffic to be international. Of these international flights 72 % are leisure travelling and 28 % business trips. Domestic civil aviation makes up 1.5 % of the total CO_2 emissions of the transportation sector. (SYKE 2019b; Trafi 2018, 6-8.)

Each new aircraft generation have more fuel-efficient engines. Upholding a modern fleet is the most important key feature an airline company can do for environmental preservation. The average age for a commercial flight is about 11 years worldwide, however Finnair's fleet is around 9 years old. Finnair also started to use biofuels in their flights in 2011. (Trafi 2019, 53.) These are only examples what Finnair has done for their CSR, as discussed in the beginning, they have a long history of succeeding at GRI standards.

Finnish people are the most travelling nation in EU. Whereas an average European travels 4.2 times a year, a Finn travels 8.3 times a year. Dramatic decrease in air travelling have been seen in neighbor country Sweden, where "flying shame" has resulted 23 % of the population to abstain the air travelling (Hoikkala & Magnusson 2019). However, in Finland flying has only increased, as Finnish took 6.6 million flights in 2018, compared to 5.3 million flights in 2013 (Tammi 2019). For Finns, one of the main reasons for frequent travelling are the cold winter season, high income level and low unemployment rate which allows to travel to countries with lower standard of living (Onali & Mäkelä 2019; Niemistö & al 2019, 15.) Despite the tax-free nature of kerosene, taxation is allowed on domestic flights in EU. Some countries have enabled this, as well Finland, where passenger transportation is taxed with VAT 10 %. According to a survey conducted by Helsingin Sanomat, the biggest newspaper

in Finland, 53 % agree and 37 % disagree with the idea of setting a tax for flight tickets. The effects on business travelling and economy caused by the taxation worries the trade operators. Due to remote location of Finland, flying is seen as an essential and taxation is considered as a risk. (Niemistö & al. 2019, 43-44.)

Finnair has conducted research as well about the Finnish customer preferences. 73 % of the participants were not supportive about adding the tax if the profit is not directly used on projects that reduce the environmental impacts. However, 39 % agreed that emissions of the air traffic needs to be reduced even if the flight ticket prices will go up. Finnair also asked how the environmental burden of air traffic should be decreased. 55 % of the participants voted for the use of biofuels, 28 % for carbon sinks, 11 % for flight tax and 6 % for emission trading. Finally, was asked what is the biggest criteria driving for the purchase action of a flight ticket. Over than half, by 55 %, responded the drive be the price, 16 % for the flow of traffic, 16 % for schedule, 6 % for the responsibility of the business operator, and 8 % other reasons. (Finnair 2018.) In start of 2019, Finnair had started to offer for its customers a possibility to offset through a purchase of desired amount of biofuel or support carbon sink development projects with the amount of their choice. (Niemistö & al. 2019, 46.)

2.7 Achievements in the aviation industry

Regardless all the numbers of growing emissions and other environmental impacts of aviation, some concrete actions have been made to mitigate emissions. Fleet in nowadays are 80 % more fuel-efficient than the first aircraft introduced in 1950s (ATAG 2017, 2). EU Emission Trading System (ETS) with 500 aircraft operators have managed to save 100 million tonnes of intra-European aviation CO^2 emissions during the years 2012-2018. The EU ETS is the first and the biggest system internationally limiting greenhouse gas emissions, covering about half of the EU's CO^2 emissions. The alliance includes 28 EU countries and Iceland, Liechtenstein, and Norway, and around 12,000 energy production and industrial plant companies in these 31 countries. (Niemistö & al. 2019, 40; Trafi 2018, 11, 41.) It is also suggested by Kolmes (2018a, 241) that ETS will have the greatest impact on the reduction of greenhouse gas emissions by 2050 as the program can be implemented quickly and emphasizing the fast action needed in CO^2 mitigation.

Use of SAF has increased and currently seven airports, for example Oslo Airport, have it regularly available as a fuel blend (ICAO 2019; Trafi 2019, 26). By June 2019, there have been more than 180,000 commercial flight using SAF. The emissions per passenger-kilometre has decreased thanks to technical improvements in fuel-efficiency and air traffic management. (IATA 2019a). EASA (2019, 29) has pointed out the significant reduction in noise level since the introduction of Airbus A350 and Boeing 787.

Due to the increasement of climate conscious people in Sweden, as mentioned earlier, all Swedavia's (airport operator in Sweden) airports have increased the use of SAF. On top of this, all those airports are required produce zero fossil CO_2 emissions from their own operations by 2020. (Hoikkala & Magnusson 2019.) Even more ambitious effort has been seen in Cochin International Airport in India, where the entire airport started to run by solar energy in 2013. Expected savings are 300,000 tons of CO_2 emissions by 2040. Cochin is not the only one as the entire Baltra Airport in Galapagos Islands is powered by the sun and wind energy. Moreover, 80 % of the materials used in the rebuilding were recycled from the earlier infrastructure. (Pemberton 2015.) In 2015, Mariscal Sucre Airport in Ecuador joined for carbon neutrality program ACA (Airport Carbon Accreditation). During the following four years, they have been able to cut down 41 % of their CO_2 emissions (ATAG 2019). Some airlines have also started to make a change by encouraging people to fly less, like KLM Royal Dutch Airlines has done (Minter 2019).

One of the greatest achievements seems to be the launch of Free Route Airspace, that allows the users to plan a route between any defined entry and exit point, depending on the airspace availability. Since the introduction in 2014, 2.6 million tonnes of CO_2 emissions have been saved, equaling 0.5 % of total aviation carbon dioxide emissions. (EASA 2019, 51, 56.) Another technology related achievement is from 2014 when Air France started to utilize TaxiBot systems that can be carried out by a pilot, towing aircraft to their gate without the main engines running (Kolmes 2018a, 244).

3   Characteristics of Millennials

Millennial is a person, who is born between 1982-2000 (Howe & Strauss 2000). WYSE (2014, 5) has defined the term as people born in the early 1980s to the early 2000s, whereas Expedia (2016, 2) say between 1982 and 1999, and Global Data (2019, 4) almost similarly between 1981 and 1999, and Lee & Kotler (2016) between 1980 and 2000. In the journal of Huang and Petrick (2010, 28), and journal of Smola and Sutton (2002) both have fixed the age group between 1977 and 1994. Sometimes Millennials are separated to two groups as young millennials 23–30 years old, and old millennials 31–38 years old (Carty 2019), or Millennials born 1981-1996 followed by Post-Millennials after the year 1997 (Sefarino 2018). Millennials are referred as well to as "Generation Y", "Echo Baby Boomers" and "Net Generation" in literature regarding the topic (Moscardo & Benckendorff 2009, 19). Although, there is no general consensus for the age range and definition varies depending on the author and the time, giving the author the flexibility to choose the preferred years. Therefore, this thesis will be following the years 1982-2000 set by Howe & Strauss (2000). Nevertheless the disparity in the ages, there are still common findings. Many researches have shown, that Millennials have different values, characteristics and behaviour compared with the Generation X, people born 1961-1980, for example delaying marriage compared to earlier generation. (Moscardo & Benckendorff 2009, 19.) More of the characteristics and values are be discussed in the chapter.

Millennials are described as self-centred, tech-savvy and environmental-conscious, spending more than Generation X and displaying low levels of brand loyalty but in other hand are influenced by peer reviewing (Gurău 2012; Pendergast 2009, 6). Millennials are assumpting themselves being very special and smart (Huang and Petrick 2010, 30). Due to selfish, individualist and sometimes even narcissist behavior, Millennials have gotten epithet "Generation Me" (Naderi & Steenburg 2018, 282). They demand for unforgettable experiences and activities over material goods, which is usually referred as experience economy (Fromm 2018). According to Howe (in Pendergast 2009, 9), there are also seven core traits that describe Millennials' the best: special, sheltered, confident, team-oriented, conventional, pressured and achieving. In addition, in the research of Ng and McGinnis Johnson (2015, 123-126) Millennials have found to have higher levels of post-secondary education compared to previous generations. Wolburg and Pokrywczynski (in Huang & Petrick 2010, 30) agree on statement about Millennials being the best educated generation, also being the most culturally diverse making them tolerant and open-minded towards different lifestyles. Nevertheless, Ng and McGinnis Johnson (2015, 123-126) findings suggest that despite the high levels of self-esteem and self-evaluation, Millennials tend to have low levels of self-competence.

Moscardo & Benckendorff (2009, 20-21) have put together some contradictories that the characteristics of Millennials have faced, e.g. a claim that Millennials are committed to balance work and life but others claim Millennials to be ambitious to sacrifice the balance over a career goals. Millennials are said to respect authority but on the other hand questioning of authority and trying to break social rules. They have also stated that Millennials are strongly individualistic in their values but regard themselves social and group focused. (Moscardo & Benckendorff 2009, 20-21.)

The diminished geographical boundaries have occurred through the technology facilities, enabling Millennials to be a part of the global digital community. This has resulted Millennials to be referred as digital natives. Characteristics for a digital natives are that they operate at twitch speed instead of conventional speed, employing at random access instead of step-by-step, processing at parallel level instead of linear processing, preferring graphics over text, play-orientation instead of work, and always connected instead of stand-alone (Pendergast 2009, 6). In addition, as the information can be shared and accessed through the internet, growing one's knowledge no longer confined only to professionals with years of education in the field, like it has been with previous generations. The characteristic related with the Millennials and technology advantage is that this generation has the need for rapid access to information. Also, Millennials are used to frequent change and technological progress. (Pendergast 2009, 7-8.)

Pendegast (2009, 8) also points that Millennials are credit-dependent and finance rely on parents much later in life compared to previous generations, in addition to Salt (in Pendergast 2009, 8) having achieved a nickname "helicopter kids" for hovering about the family home. Millennials are uncertain spenders with short term wants and temptations to spend whereas Baby Boomers are considered much more conservative spenders with a mindset of paying upfront. Even during a globally unsecure financial periods, Millennials will prioritize travelling abroad over owning property and domestic travel. On top of that, they are willing to spend a large proportion of their income on travel. (TravelMole in Pendergast 2009, 14; UNWTO 2008b, 6.)

There are three times more Millennials than its predecessor Generation-X. Millennials have been estimated to be as large and influential as Baby Boomers. Therefore, it is valuable to know how to advertise on this target group since they are very demanding and hard to reach through advertising. (Huang & Petrick 2010, 29.) Millennials expect personalised and customised connection with the brands they identify with. Emails do not work as effectively as SMS or mobile apps, also content media is powerful. In addition, in all those messages

should be reflected their interests and emphasise their individualism. (Expedia 2016, 38; Fromm 2019.) Products and brands should match their personality and lifestyle to attract Millennials, as it is a way to communicate their values (Moreno, Lafuente, Avila & Moreno 2017, 138). There are as well some cultural differences, for example, Millennials in Asia have higher expectations of service quality than rest of the Millennials around the globe. In addition, Asian Millennial consumers expect rapid service in visually appealing surroundings with well-groomed staff. (Kueh & Voon 2007.)

3.1 CSR attitudes of Millennials

Social, cultural and economic aspects set the ground for green consumerism by shaping the way consumers think and utilize eco-friendly products (Chaudhary & Bisai 2018.) The consumers of the digital are claimed to be individualistic, unpredictable, expressive and highly competent in their consuming habits (Wilska 2002, 195). According to a research of Anderson, Dahlquist & Gaver (2018, 19-22), Millennials regard corporate social responsibility (CSR), more important than price, quality, country of origin, brand image, ordering method or return policy, when making a purchase decision. Environmentally friendly brands are seen more attractive among Millennials (Naderi & Steenburg 2018, 281). Furthermore, they are willing to pay premium price for company that represent positive CSR. The research also suggest that the philanthropy typology of CSR behaviour is most favoured by Millennials as they expect companies to include CSR into their strategic plans and demonstrate external social values to contribute into the community. (Anderson, Dahlquist & Gaver 2018, 14, 19-22; Naderi & Steenburg 2018, 282.)

Millennials value CSR oriented firms more than Baby Boomers and Generation X. From Millennials 91 % would switch to a brand associated with a CSR, 71 % would pay more for CSR products and 66 % use social media to engage around CSR. (Anderson, Dahlquist & Gaver 2018, 14, 19-22.) In addition, the young are more likely to prefer products with environmental certification (Sitra 2019, 79). Like mentioned in the upcoming section "Barriers and motivations for sustainable travel behaviour", price places an obstacle for the purchase intention, and according to Chaudhary and Bisai (2018), this is especially true among the young. However, environmentally concerned people are price insensitive and it does not play a significant role on the purchase intention of sustainable products (Chaudhary and Bisai 2018).

Attitude toward green purchase behaviour is linked to green purchase intention. Attitude is a positive or negative feeling about some person, object or issue. Attitudes drive our motivations, such as relationship-based outlooks including approval, acceptance, devotion, disdain, dislike, intolerance, rejection, respect, scorn, scepticism and trustworthiness. (Boone

2018, 28; Petty & Cacioppo 1996, 27.) Boone (2018, 28) has simplified in the figure 6 how the attitudes drive for behavior and thus affect the outcomes of the relationship.

ATTITUDES
about self and other

BEHAVIOURS
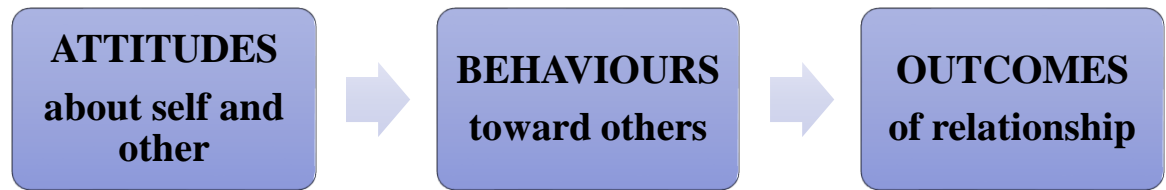toward others

OUTCOMES
of relationship

Figure 6. Attitude relationships (adapted from Boone 2018)

Naderi & Steenburg (2018, 280) state the green consumption to be influenced by values, norms and habits. Link between green purchase behavior and purchase intention do not only include products as such organic food but also services i.e. green hotels and tourism. The concern of environment was found to influence attitude, subjective norms and perceived behaviour control and indirectly influence on purchase intention of an individual. Researchers have also found that environmentally concerned people might affect others green purchase intention through social pressure as family, relatives, peers and friends. (Chaudhary & Bisai 2018.) This statement is seen as well in the research of Sitra (2019, 50-52) where 44 % of the young said to work actively to improve the adaption of environmentally friendly choices within friends and family. However, much smaller percentage take actions in school, work or hobby environment to ensure sustainable development (Sitra 2019, 50-52).

According to Naderi & Steenburg (2018, 282), Millennials are more likely to attribute human activity with global warming. Nevertheless and regardless of the worry of many Millennials, fatalism and denialism are more common among the young than in the any other age groups. Fatalism refers here with an attitude to think that it is too late to stop climate change, and denialism to denying the existence of climate change or the relation caused by human activity. (Kohl 2018.) Bennet and Williams (2011, 39) suggest to focusing on trying to change people's behaviour rather than burdening them with information and trying to get them to care. In the survey conducted by Yle (Hallamaa 2018), 4 % of the young regards climate change as a slight problem and other 4 % do not regard it as a problem at all. Also, in survey of Sitra (2019, 58) the young belonged to the group who least thought that their own actions could influence and halt climate change. In a research conducted among US Millennials, only 33 % recycled compared to 51 % of older generations. They were also less likely to use reusable water bottle, minimize the water usage, unplug electronics or turn off unnecessary power. (Naderi & Steenburg 2018, 282.)

3.2 Millennials as consumers

Alch (in Huang & Petrick 2010, 30) has researched Millennials to spent most of their money on clothing, entertainment and food. On the other hand, in the article of Moreno & al. (2017, 141) those have been stated to be clothing, shoes, jewelry, sports equipment, entertainment, health and beauty, and food. The factors that affects most on Millennials consumer behaviour are attitude, perception, motivation, feelings, values, and lifestyle (Moreno & al. 2017, 141). Some clear habit and consuming changes have occurred among the young Finnish people. In the article of Terävä (2018), increased awareness toward environmental issues has caused more young to go vegetarian, fewer obtaining a driver's license and therefore favouring walking, cycling or public transportation. Environmental effects of private car use will as well affect their decision whether to purchase a car in the future or sell existing one. (Kohl 2018; Terävä 2018.) Also, 40 % have chosen to fly less when travelling and 44 % say to take the environmental impacts into consideration while travelling. Over 56 years old are the second most concerned of the environmental impacts by 33 %. Moreover, the young are the biggest group who has compensated the environmental impacts of flying. (Sitra 2019, 41, 87-88.) Overall, stated in the research of Autio and Wilska (2003, 5), green purchase behaviour is no longer seen as out of mainstream habits but more a norm in a Finnish society.

The young Finnish people have especially shaped up their meat consumption. At least 18 % among 17-24 years old have given up on it, compared to other age groups where the average lies on 8%. In the age group of 23-35 years old Finnish, 30 % are willing to pay more for a product or service that presents and drives for sustainability. Among the older age groups, the willingness varies from 14-21 %. Only the one age group younger (18-22 years old), performed better with 40 % of willingness for paying extra. Also, the young are more likely to buy sustainable electricity over other groups. (Kohl 2018; Sitra 2019, 82; Terävä 2018.) According to Autio and Wilska (2003, 6), as a consumer, the young people want to achieve a position where they can make eco-friendly and environmentally friendly solutions. However, an expert has noted that since environmental-friendly consuming is a trend, some people purchase sustainable brands only to achieve a certain idolised status, concern of self-image and need for admiration. (Naderi & Steenburg 2018, 288; Terävä 2018.)

According to Finnish youth barometer, 78 % of the participants said that they would make environmentally conscious choices even though others would not. However, only 42 % say they have already made choices to decrease their environmental impact. (Myllyniemi 2016,

81-82; Naderi & Steenburg 2018, 282.) The environmental actions are as well radically divided between genders. Especially young men are less likely to recycle or let environmental matters to effect on their energy consumption or purchasing behaviour. They are less willing to pay extra for sustainable products or services, or compromise with their standard of living. They are, in general, less interested in the environmental effects of their consuming habits and they consider compromising for environment as a restriction of their freedom. (Autio & Wilska 2003, 8; Myllyniemi 2016, 81-82.) Bennet and Williams (2011, 54) suggest that "feminization" of the green movement holds men back.

On contradictory, in the research of Autio and Wilska (2003, 5) the statement was opposite, claiming that the young are willing to compromise their standard of living as well as consuming habits. This is followed by a statement that even though the young claim about their environmental optimist consuming habits they still are chained to materialism and do not see the conflict between them. To most of them the green consuming habits are shown in one practical situation, such as recycling, consumer boycotts or vegetarian diet, or stays merely on the level of environmentally friendly attitudes. Usually, the term responsible consuming is only linked with recycling. (Autio and Wilska 2003, 6.) As there are claims whether the Millennials are greener in their attitudes than actual behaviours, it is still proposed that Millennials are more willing to purchase sustainable products due to ecological knowledge, social influence, lifestyle, transfer of environmental attitudes from parents to children. (Naderi & Steenburg 2018, 281.)

3.3 Travelling habits

Millennials travel more often, explore more destination, spend more on travel and book more trips online. They are hungry for experience and information, are intrepid travellers, and get more out of their travel. (Pendergast 2009, 11.) 70 % of Millennials take at least one trip a year (Reitknecht, 2019) but most travel two to five times (Global Data 2019, 4). According to ATAG (2016, 70-71) online travel planning has enabled for Millennials to be the first generation to mix budget and luxury experiences thorough their journey. They also benefit from bleisure travel, a combination of leisure travel while on business, as mobile devices allow people to work regardless of their location. UNWTO has researched that those going for far bleisure trip, feel to benefit more from their trip than those who do not travel as far away. UNWTO has defined "youth" to cover age group between 15-26 but widely stretching it up to 35 years old. (UNWTO 2008b xii, 1.)

80 % of Millennials prefer to travel abroad over domestic destinations (Global Data 2019). According to UNWTO (2008b), reason for 70 % of the trips travelled by young people are goal-oriented such as desire to explore or possibility to work or study abroad. Majority also

state as their motivation to be wanting to experience other cultures, increase their knowledge and experience the everyday life of the chosen destination. (UNWTO 2008b; WYSE 2014, 6.) Also so-called "funemployment" occurs when the young use their redundancy money or savings to take longer trip, usually a gap year or gaining work experience abroad, when the economy has gone down (UNWTO 2016, 12). Millennials want to experience the destination as "authentic" and "real life" like locals by going where the locals go and do what the locals do (Expedia 2016, 4; Fromm 2018; WYSE 2014,6). This is seen as well with their choice of accommodation, as they prefer to stay at Airbnb (Fromm 2018).

Millennials prefer tailored and specialized trips according to their interest, whether it be photography, cycling, paddle boarding or trekking, to name a few (Fromm 2017). To be precise, all kinds of adventure and active holidays are popular among Millennials (Global Data 2019, 6). Overall, Millennials want the tour operators and travel agents to understand their needs and suggest trips and destinations to match the specialized activity with an authentic and memorable experience (Fromm 2017). Moreover, 80 % of these travellers agree that the trip has changed their overall lifestyle at some level, and most say they were travelling in a more responsible manner and thinking more about concerning issues such as social justice and poverty. The travelers also say to feel more globally connected after returning from a trip. As a result of the travel experience, young said to become more open-minded, flexible, confident and tolerant. (UNWTO 2008b.)

Travelling plans has little or no effect by economic problems, political unrest or epidemics. For example, a survey conducted in 2014 Ebola outbreak indicated that such as global health scare did barely impact on Millennials travelling plans. (UNWTO 2016, 11.) However, on the report of Expedia (2016, 14), Millennials say to worry about their safety while travelling abroad, even more than other generations. This accompanies Reitknecht (2019), stating that 56 % of solo Millennial travellers votes safety as their biggest concern, followed by costs. As looking from the perspective of other safety issues, Millennials are not concerned about their data privacy, as long as they perceive benefit in exchange for their data. These include benefits such as recommendations, advice/tips, or personalised services. (Expedia 2016, 36-37.)

Millennials do not plan or book their trips in advance as they are more likely do it at the spur of the moment, going away for a weekend or few days but repeat it multiple times a year (Expedia 2016, 26; Fromm 2018). 25 % of Millennials have booked their trip less than a week before the departure (Reitknecht, 2019). On the other hand, in the report of WYSE (2015, 6) said that half of the Millennials book their flights three months before the departure. Millennials still considers the cost of flight ticket as one of the main drives for travelling.

When transportation cost of a destination is expensive, they are more likely to hesitate. (Fromm 2018). In addition to this, 46 % of young travellers are choosing locations outside major gateways and more rural areas (UNWTO 2008b, xii). Millennials use average 3.7 sources i.e. friends, family, travel agents, reviews and other, when planning, choosing and booking a holiday. Other generations use average of 3 sources. (Expedia 2016, 13.) According to Abeytrane (2017, 201) 85 % of Millennials check multiple sites to see the offers before booking, moreover, up to 46 % do it through their smartphone or tablet.

Millennials actively read reviews and vice versa write and post about their own travel and service experiences (Moreno & al. 2017, 142; WYSE 2014, 8). One of the most visited destinations among Millennials were the United States, Australia and the United Kingdoms (WYSE 2014, 8). In addition, young are more likely to return in places they have earlier visited (UNWTO 2016, 11). Compared to other generations, Millennials are more likely to travel with others than partner or children. They prefer travelling with someone as 43 % say that holiday alone is an intimidating thought. (Expedia 2016, 3, 15.) According to Lee (2017), 31 % prefer to travel solo, followed by travelling with a partner with 29 %.

3.4 Expenditure while travelling

In the destination, 50 % of the Millennials are more likely to spend above 1000€ during their trip, average of 1591€ (see figure 7), whereas international tourists in general usually spend 950€. This is mostly due to the fact that young travellers are taking longer trips ending up spending up to two thirds more on average. (UNWTO 2014, 11; WYSE 2014, 8.) Approximately 60 % of the travel budget is spent at the destination (UNWTO 2016, 12). Even though mentioned earlier that Millennials are credit-dependent and finance rely on parents much later in life, under a quarter of taken trips were financed by friends and family (UNWTO 2014, 11). UNWTO (2014, 10) research, estimated Millennials spend to be over 362 billion euros in 2020. Young travelers spend more often directly with local businesses than other generations. (UNWTO 2008b, 6.)
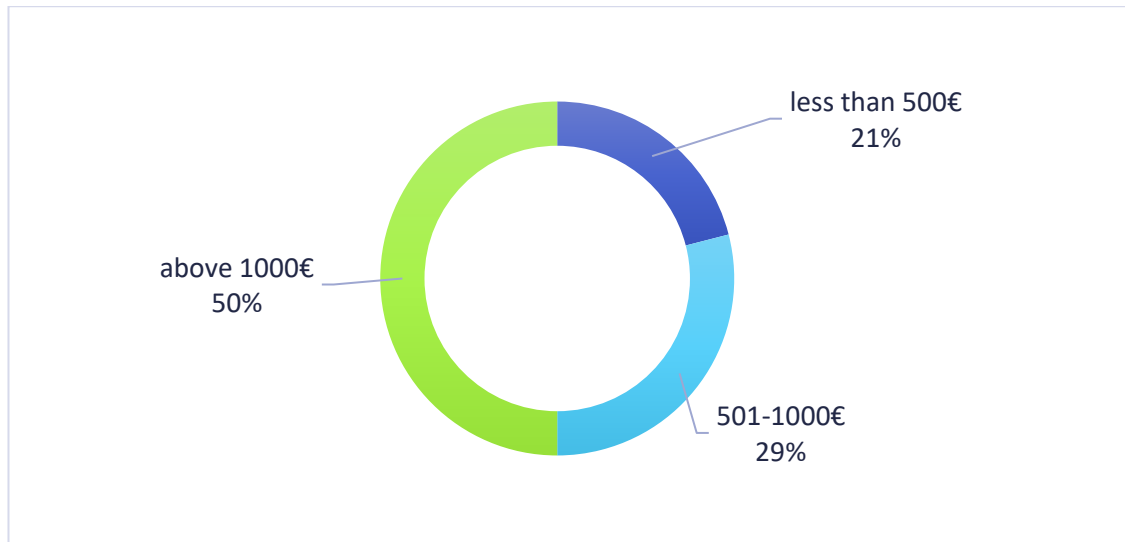
Figure 7. Young people's average spend amount among a trip (adapted from WYSE 2014)

UNWTO (2008b, 1) has considered youth travel as a big market and due to its constantly growing nature, making opportunities to evolve new market niches: backpacking, student travel, work experience, travel experience and language learning. In the findings of Richards (2015, 1), there are similar traveller types: the traveller, the tourist, the volunteer, the language student, the exchange student and the intern. Youth travel is said to account for around 23 % of over one billion international tourist arrivals. They also build up new identity during trips as only 23 % view themselves as "tourists". (UNWTO 2008b xiii, 3, 8; UNWTO 2016, 16.) In addition, 70 % of Millennials say that travel shape who they are as a person. The possibility of travelling is considered more important than buying a home or paying off debts. (Reitknecht 2019.)

Close contacts such as family, friends and social network contacts, fellow consumers i.e. reviewers, bloggers, forum posters influence a bit less on Millennials decision making than industry experts, meaning travel agents, travel providers and expert opinion websites (Expedia 2016, 18-19). Social media affects 42 % of Millennials travelling desire as they see friends and influencers to post about their travelling destinations (Expedia 2016, 10; Fromm 2018; WYSE 2014, 8) and 87 % say to look travel inspiration from social media (Global Data 2019, 5). For digi-native Millennials, the active use of social media is an important part during the trip. Sharing and sometimes even flaunting on social media channels is a fundamental part of the entire travel experience. 32 % of non-Millennials compared to 56 % of Millennials have posted a photo or video of the trip on social media (Expedia 2016, 2, 8). However, others have argued that even 97 % of Millennials post during the trip (Abeyratne 2017, 201). Millennials also regard other people commenting on those photos highly important. This is mostly due to the importance of peers. (Expedia 2016, 2, 8.)

3.5 Barriers and motivations for sustainable travel behaviour

Attitudes have been studied a lot in the context of ethical consumer behaviour. However, there has been doubts whether attitudes can be used as a valid predictor of an individual's intention behaviour. They do not always apply into actions, known as the attitude behaviour gap (Papaoikonomou, Ryan & Ginieis 2010, 77-78.), or in this case, the green cap (Bennett & Williams 2011). While numerous of studies have indicated that consumers prefer to buy products from socially responsible corporations, the market share has shown much limited results (Papaoikonomou & al 2010, 77-78). Also, in the analysis of many researchers concluded that the gap does exist for ethical consumption (Hassan, Shiu & Shaw, 2014; Juvan & Dolnicar 2014, 2). Cowe and Williams (in Papaoikonomou & al. 2010, 78) have stated the phenomenon as 30:3 syndrome, in which 30 % claim to purchase products from ethical firms but just 3 % actually purchase those. Having a positive "green" attitude does not usually result in environmentally sustainable tourism behavior (Juvan & Dolnicar 2014, 2; Prillwitz and Barr 2011). Therefore, the theory of planned behavior between travelling and climate change has been criticized as it is too complex (Juvan & Dolnicar 2014, 3). The lack of availability of ethically produced alternatives forces the customer to buy what market offers. Moreover, consumers are not ready to compromise over quality even if a product was ethically sourced (Papaoikonomou & al. 2010, 81-82).

There are so-called traditional purchasing criteria: price, quality and availability. Price, availability and customer expectations have been identified as the most significant obstacles for purchasing sustainable products and services, as those kinds of products are usually more expensive and less competitive than conventional products. Up to 94 % say price to influence on their purchase behaviour. (Chaudhary & Bisai 2018; Niemistö & al. 2019, 3; Papaoikonomou & al. 2010, 80; UNWTO 2008b, xiv.) Also, like mentioned above in the survey of Finnair, price seems to be the most important factor for a traveller. However, according to Booking.com (2019), 55 % of global travellers state to be more determined to make sustainable choice while travelling compared to a year ago.

Some consumers state that lack of information, such as labelling and incomplete information, is holding them back from buying ethical products. On the other hand, they say when companies provide too much information, they feel overwhelmed. It is also suggested that regardless of unethical business practises, brand loyalty overrides the purchasing decision. There is also so-called "practise of selective ethics", meaning that individual customers support different objectives such as animal welfare, environmental welfare or social welfare. Therefore, they concentrate on different issues and spent their money on ethical ob-

jectives related with their interests. One obstacle of not choosing to purchase ethical products is that the consumer feels their effort having only a small impact. (Papaoikonomou & al. 2010, 79-81). In the research of Booking.com (2019), travellers say they would be more encouraged to select sustainable choices if booking sites offered an "eco-friendly" or "sustainable" filter. To continue with Niemistö & al. (2019, 46) more visible certification of environmental efforts could help consumers to choose airline with lower carbon footprint. In addition, many consumers are unable to recognize the low carbon emission flights (Niemistö & al. 2019, 46). Luckily, at least some information is available as The International Council on Clean Transportation (ICCT) has published guide in which US domestic airlines have been ranked according their fuel efficiency (Kolmes 2018a, 236).

Among the young, ecological lifestyle is considered to be trendy but due to limited amount of income many say to be obligated to more unsustainable lifestyle than they wished (Terävä 2018). High prices of ethical alternatives and limited budget arouses a dilemma. When the option is a trade-off between traditional purchasing criteria and ethics, customers compromise on ethicality (Papaoikonomou & al. 2010, 80, 84). Also, sustainable choices are associated with inconvenience, lower performance and higher cost (Naderi & Steenburg 2018, 281).

In the survey of Booking.com (2019) the main obstacles for sustainable travel are: seeing travelling as a special time thus excluding the sustainability thoughts (31 %), not knowing how to make travel more sustainable (37 %), the other options over sustainable options are more appealing (34 %), sustainable travel is too expensive (36%), agenda constrains the sustainable choices (34 %), sustainable destinations are less appealing (34 %) and lack of understanding how to make travel more sustainably (50 %). There are very similar findings in the research of Juvan & Dolnicar (2014, 2, 12, 15) in addition some consumers try to equivocate by offsetting, credit of smaller footprint from everyday life back home, being too busy to change behaviour, blame other people, displace or deny responsibility, downward comparison to make one look better, denial of control, neglect the impact of personal behaviour, trust on technological solutions, and arguing for job creation in the industry. However, most consumers (97.8 %) with high levels of "sustainable intelligence" e.g. commitment, attitude, knowledge and/or behaviour regarding sustainability, are more willing to pay for sustainable tourism destination than other tourists. The ones being ready to pay more set the limit to be a maximum of additional 10 % above the cost of travel. (Pulido-Fernández & López-Sánchez 2016.) On the other hand, in the research of Niemistö & al. (2019, 46) was stated that even the environmentally conscious consumers were not ready to reduce the amount of flying. A clear attitude-behaviour gap exists between vacation behaviour and

the potential environmental impacts, even with people engaging in organised environmental protection. (Juvan & Dolnicar 2014, 10.)

The pro-environmentalist behaviour is usually driven by selfless altruisms where a person has an inherent care about the environment. Another reasons for more sustainable behaviour is consumer frugality, a careful use of available resources and effort to avoid waste, in this case for example saving money with green products such as using LED light bulbs. Some consumers are driven by future orientation, where a consumer anticipate the consequences and therefore plan before taking any actions, especially as pro-environmental behaviour has rather long-term than short-term effects. (Naderi & Steenburh 2018, 283-284.) "Super greens" labelled by Bennet & Williams (2011, 28) are motivated by altruistic and future-oriented ideologies, dedicating a lot of their effort on sustainable lifestyle. They are twice as likely to feel guilt over unsustainable behaviour over others (Bennet & Williams 2011, 36).

Last factor to drive for sustainable action is risk averseness, which is considered rather high among Millennials. They consider safety and security as an essential, and the individuals who perceive risk averseness in their surrounding and environment are more likely to implement green behaviours. Out of these motivators, consumer frugality and future orientation are the biggest drivers for Millennials consumers. (Naderi & Steenburh 2018, 283-284.) Kohl (2018) consider that the way climate change is discussed and presented in different channels effect on behaviour. The constant worst-case scenarios and negativity over the current state of the globe feeds the fatalist attitudes. Instead of trying to change attitudes with restricting practises, encouraging people with new options could have a greater impact. (Kohl 2018.)

4   Research Method

Following section will contain information about the research methods, qualitative and quantitative. The chapter will discuss about the chosen method, quantitative questionnaire, and the reasons for choosing it. The text opens how the survey was implemented, sent to the participants, and how the results were analysed.

There are two kinds of empirical research methods: quantitative and qualitative. There is also a mixed method, a type where both quantitative and qualitative research methods are used. The most distinct difference is that in qualitative research the results are presented using words rather than numerical form, which is used in quantitative research. (Creswell 2014, 32; Heikkilä 2014; Taanila 2019a, 2.) However, the difference cannot be labelled this unequivocally as Hirsjärvi, Remes & Sajavaara will explain later. Nevertheless, some commonly agreed differences include following. In qualitative research, the aim is to explore and understand individuals or groups ascribe to a social or human problem. The research setting involves emerging questions and procedures. In quantitative research, the theories are tested by examining the relationship among variables. Mixed methods research integrate two forms of data thus the combination provides a more complete understanding of a research problem than either approach alone. (Creswell 2014, 32.) Whereas quantitative research answers on the questions "what", "where" or "how much", "how often", does qualitative research answer on "why", "how" or "what kind of". (Creswell 2014, 32; Heikkilä 2014.)

It is important to understand the differences between the research methods as the data collection and its analysing in these methods differ (Taanila 2019a, 2). The quantitative research helps to map answers on existing situations but is lacking on the reasons behind them (Heikkilä 2014). The qualitative research method helps to understand the research subject and the factors behind the behaviour and motives (Heikkilä 2014), and provides a more in-depth exploration of the topic (Harwell 2014, 148). Therefore, objectivity, replicability and generalizability are not aimed goals like in quantitative (Harwell 2014, 149).

Like said above, the differences between quantitative and qualitative methods are not too black and white. They complete each other rather than compete. For example, the quantitative part of the research can forego qualitative part. Utilizing a quantitative survey method first can help to lay the groundwork for coming up with meaningful comparison groups for qualitative interviews. Measuring at all stages include both qualitative and quantitative research methods. (Hirsjärvi & al. 2007, 132-133.)

When planning a research, there must always be a purpose behind it. The purpose is usually defined either as exploratory, explanatory, descriptive, or predictive (Hirsjärvi & al. 2007, 132-133). The details of these are explained more thoroughly in the table 1. A research can include more than one purpose, or it can change during the course of the research (Hirsjärvi & al. 2007, 132-133; Sue & Ritter 2012, 1).

Table 1. The purpose of the research (adapted from Hirsjärvi & al 2007)

The purpose	Research question	Strategy
Exploratory • Find out what is happening • Find new perspectives or phenomena • Explain little known phenomena • Develop a hypothesis	• What is happening in the process? • What are the central themes, models, and classifications? • How do the typologies relate to each other?	Usually qualitative Field study Case study
Explanatory • Find an explanation to a situation or problem, usually in the form of causal relationships • Identify probable cause-effect relationships	• Which incidents, beliefs, attitudes and actions have affected in these phenomena? • How are these factors interacting with each other?	Either qualitative or quantitative Field study Historical methods
Descriptive • Presents close description of people, events, or situations • Documents the most central and interesting features of the phenomena	• What are the most visible behavior systems, incidents, beliefs and processes in these phenomena?	Either qualitative or quantitative Field study Survey
Predictive • Predicts events or human interactions that can be resulted from a phenomena	• What are the results occurring from these phenomen? • To whom the effects are extending?	Experimental strategy

Sue & Ritter (2012, 1) supports this table stating that the purpose of the research is essential to define before formulating the goals and objectives of the research. Moreover, these kind of research are usually classified to examine social studies (Sue & Ritter 2012, 1) that examines the themes of, for example, understanding of culture, the relationships between people, places and environments, and individual development and identity (National Council for the Social Studies).

4.1   Quantitative method

Quantitative questionnaire is used in this thesis to gather the information. Quantitative research helps to answer question that handles numerical amounts and percentages. The research is typically collected through forms, surveys, structured interviews, phone interviews, systematic observation, and experimental studies. The research method can be used to observe interdependencies between objects or changes in the phenomenon. (Heikkilä 2014.) Quantitative method emphasises the cause-effect relationship. The method utilises

conclusions from previous researches, previous theory, definition of the main concepts, presenting a hypothesis, data collection that is suitable for presenting in numerical means, selecting the specific target group, presenting the variables in a statistically meaningful format, and drawing conclusions based on the statistics for example describe the results with percentage tables and comparing the results based on the statistics. (Hirsjärvi & al. 2007, 135-136.) The briefer form is often presented to follow the research problem, a model, hypothesis, implementation, results and theory, which can be led back to the research problem as well as the model (Hirsjärvi & al. 2007, 141). Usually the aim with the research is to create a theory (Hirsjärvi & al. 2007, 136).

As mentioned, surveys are a common way to execute a quantitative research. A survey is a data collecting method from people about who they are (such as education background or finances), how do they think about certain topics (their motivations and beliefs) and what they do (behavior and actions) according to Balnaves and Caputi (2001, 76). A usual way to conduct a survey is in the form of a questionnaire that a person in a target group fills out or interview them in person or by phone (Balnaves and Caputi 2001, 76), utilizing a standardized data collection (Hirsjärvi & al 2007, 188). According to Hirsjärvi & al (2007, 188), standardized data collection means a way in which the questions are asked in the exact same way from all participants.

Research question should be well defined and concrete enough in order to utilize the collected data (Heikkilä 2014; Taanila 2019a, 3). Typical measuring ways in quantitative research are ready-made alternative scales, such as excellent, good, sufficient, weak; Likert scale which is 3-7 step response scale, varying from agreeing completely to disagreeing completely; sematic differential which is 7-step response scale with opposite adjectives such as effective – ineffective; organising the options i.e. putting in order depending of, for example, superiority, attractiveness, functionality; and, open-ended questions. (Hirsjärvi & al. 2007, 193-196; Taanila 2019a, 23-24.) Some argue that open-ended questions are important to be included as they give the participant the opportunity to freely answer about their own thoughts, whereas in multiple choice answers there is no flexibility given. On the other hand, open-ended questions are hard to analyse as the answers can vary and their reliability is questionable. (Hirsjärvi & al. 2007, 196.)

When planning the questionnaire, it is essential to get familiar with theoretical literature, set research questions, choose the research frame, draft indicators and design the sampling. When designing the questionnaire, all questions should be reflected from the theoretical framework. In each question, following must be considered:

- How the collected data from that questions helps to answer the research questions?
- Do I get a valid answer for what I'm trying to achieve?
- Can I get same data more efficiently or more reliably with different kind of question? (Taanila 2019a, 3, 21.)

Quantitative questionnaire is a suitable research method for this thesis, as the goal is to get understanding about Millennials' awareness, attitudes, opinions and habits about sustainable air travelling from a large number of participants. The research is utilizing explanatory and descriptive methods as they discuss the phenomena around believes, causal relationships, and behaviours (Hirsjärvi & al. 2007 134-135). However, the questions related with opinions, attitudes, beliefs and behaviours are especially vulnerable on reliability and validity problems. The participant might not be aware of their own feelings or have not thought about them before encountering the question. The opinion might vary depending of the mood, environment and time. Also, the participant might answer regarding what is socially acceptable and or the expectations of the survey maker. (Taanila 2019a, 23-24.) To avoid this, the questions are carefully planned with the aim of getting information about how aware travelling Millennials are about the environmental effects of flying and whether the information has a relation to their travelling habits and actions.

The survey also hopes to get answers what would need to be done in order to get Millennials interested in their carbon footprint. The aim of the survey is to get answers for the research questions of the thesis. In order to construct valid and purpose-built survey, the questions are structured from and based on the theoretical framework. In order to answers research questions, a quantitative questionnaire needs large amount of numerical representative material. According to Heikkilä (2014), the amount of the needed respondents depends of the aim of the research. One hundred respondents are considered enough sample if the target group is narrow and the results are considered at the general level. 200-300 is enough for a research that is targeted for a study to examine variables between different groups. 500-1000 is reasonable amount for surveys at national level. (Heikkilä 2014.)

Using qualitative methods, e.g. interviews, would not give satisfactory or present reliable results of the whole Millennial generation for the topic. Therefore, the questionnaire is regarded as the most time-efficient way to get information (Hirsjärvi & al. 2007, 190) from a large group of Finnish Millennial population. In addition, the timetable regarding the questionnaire (Hirsjärvi & al. 2007, 190) and the accessibility of the target people is easiest with the questionnaire.

4.2   Planning the questionnaire and the implementation

The questions are based on the theoretical framework concerning environmental sustainability issues of aviation and the travelling and consuming habits of Millennials. The survey is conducted in Finnish as the target group of the thesis is the travelling Finnish Millennials. The aim is to get information about their awareness, attitudes and travelling habits by air. In addition, the survey aims to get answers, whether the awareness is linked with their behaviour. As the environmental issues are on the news daily, this research gives information about whether Millennials are affected by this information. Other important sectors that the questionnaire is aiming to find is their knowledge related the environmental impacts of flying, and what features are important when considering a trip by air. The questions should provide a holistic picture that answers on to the research questions.

The questionnaire (see appendix 1) is planned to take five minutes, including 17 questions. The needed time to answer to the survey is informed in the beginning, therefore a participant can be acknowledged of how long the survey takes. The structure of the survey consists of different types of question, structured and open-ended questions, in order to get a holistic and coherent answers from the participants. All questions are mandatory regardless of a couple specifying open-ended questions. The questions are following a chronical order. (Heikkilä 2014)

The survey begins with a demographic questions, and then is followed by a longer set on multiple choice questions, as suggested order by Heikkilä (2014). Only one thing is asked per each question, and the questions are formed to be simple, short and clear. Terms such as "compensation" are defined to avoid confusion. (Heikkilä 2014; Taanila 2019a, 25.) Vague wording such as "often", "always" and "usually" is avoided as people tend to have different interpretation of them (Taanila 2019a, 25).

Most of multiple choice questions related with Millennials attitudes follow a 5-point Likert scale. Likert-scale questions has an aim to measure like-minded or importance of certain topics. The other type of multiple choice questions are asking to choose all applicable choices. The questions with same topic are grouped together. These questions aim to measure how important or valuable the participant feels about the asked topic. To hear about the participants' own opinions, the questionnaire included a set of open-ended comments when the participant had opted the choice "other". (Heikkilä 2014)

Originally, the questionnaire was planned to be conducted in English and welcome all Millennials living in Finland to answer on it. Even though the theoretical framework also discussed about Millennials in domestic and international level, in order to get a reasonable extract to present one specific group of Millennials, only Finnish people were chosen. The target groups are both female and male, from Millennial age group born between 1982-2000. The questionnaire itself was created through an online survey platform Webropol. The objective was to get at least 150 responses to the survey as any smaller than 100 responses cannot be generalized when thinking about the objective of the thesis, like stated earlier by Heikkilä (2014). There were many test rounds carried out before the final version, as the questionnaire needed some corrections on grammar or typing errors, and change on some questions or choices to be more comprehensible. The researcher got help from one person who were known to be good at Finnish grammar and one who had knowledge of using Webropol.

The questionnaire was shared on social media platforms i.e. Facebook and Snapchat on the first day (17.09.2019), and on Instagram story on the following day (18.09.2019) as a reminder. These platforms were chosen as many Millennials use those channels daily, giving it the most potential visibility. As well, some participants were reached through WhatsApp and the post was shared by other people on Facebook and Instagram. Moreover, the message about the questionnaire was spread by word of mouth. The planned time was set to be under 14 days as after a couple of days the post won't be showing on the Facebook feed and the Instagram the story is valid for 24 hours. However, the additional days were planned to keep in case of reminding about it again on social media or sharing the questionnaire through word-of-mouth with Millennials, who are not active on social media, or do not interact with the researcher normally. A reminder about the questionnaire was sent on the last day of the sample collection.

The initial plan was to get 150 respondents over the period of 17.-29.09.2019 but in case if it seemed that the questionnaire would not be reaching enough audience on its own, a Plan B was prepared beforehand. The Plan B, a gift card would have been raffled to incentivize the target group for more active participation.

4.3   Analysing process of the results

Analysing, interpreting and drawing conclusions of the collected data is an essential part of any kind of research (Hirsjärvi & al. 2007, 216). If the quantitative survey is planned carefully, the collected data can be easily analysed. The analyzing process with quantitative data can be conducted by using Excel and SPSS. The findings are usually presented in the form of figures and tables. (Heikkilä 2014.)

Some weaknesses related with quantitative questionnaire can be identified. Making a good questionnaire takes time and requires a variety of knowledge and skills from the researcher. It cannot be assured that the participants have considered the questionnaire with serious manner, for example, whether they have carefully chosen the most applicable choices or being honest with their answers. The comprehensive of the questionnaire cannot be known, and the misunderstanding are hard to estimate. This weakness was tried to be avoided with mentioned theory above, including eliminating vague wording and asking only one thing per each question. Also, it cannot be assured how much knowledge participants have of the topic beforehand. (Hirsjärvi & al 2007, 190.)

Before starting the analysing process, some preparation steps are needed. These include checking the data in case of clear mistakes or missing data, completion of data with interviews in case of vague data, and arranging the material to be ready to be analysed. (Hirsjärvi & al 2007, 217.) In the case of the questionnaire of this thesis, there should not be any problems with incomplete data as a participants were not able to submit the form if all mandatory parts were not filled in, however some miscomprehension might have occurred when considering the wording of the questions.

The analysing work of research usually starts when data has been fully collected and arranged. This is especially common with quantitative method where structured forms and scales are used (Hirsjärvi & al 2007, 218), which was the case with the thesis questionnaire. The data can be analysed in a variety of ways but the most common is either explaining or understanding. The explaining method utilizes statistical analysing and drawing conclusion. The understanding method utilizes qualitative analyse and drawing conclusions. The most suitable analysing method is the one that brings the answers for the research question. (Hirsjärvi & al 2007, 219.)   After analysing the results, the research is not complete yet before they have been explained and interpreted, meaning discussion of the results and coming up with conclusions. (Hirsjärvi & al 2007, 224.)

5   Results

In this section, the results from the online questionnaire are explained and analysed. The quantitative questionnaire was gathered as numerical data and then transferred to Excel to create figures. The questionnaire was open for the period of 17.-29.09.2019, although the first 100 respondents were reached after the first three days. Overall, the questionnaire gathered 140 answers. The questionnaire aimed at giving results for the research questions.

5.1   Demographics and travelling habits

Among the 140 participants, 87 % were female, 12 % were male and 1 % preferred not to answer. All other age groups except 34-37 did gather answers. Over half (56 %) of the participants were 22-24 years old, followed by 18-21 years old with 24 %. The three smallest group were 25-27 years old with 11 %, 28-30 years old with 6 % and 31-33 with 3 %. The participant was by 91% chance a female from the age group of 22-24.

Questionnaire aimed to gather information about how much Millennials had travelled within a year (see figure 8). Here 76 % had flew at least once a year, however, the biggest single section by 24 % said that they had not taken any trips by an airplane within a year. This was closely followed by respondents who had flown two times a year with 21 %. After this 19 % of the participants said they have taken one trip, 14 % had taken three trips, 11 % six times or more, 7 % had taken four times, leaving five times with 4 % as the last one. Almost half of the age groups of 18-20 and 31-33 had not to travelled at all, whereas 28-30 years old travelled by air the most by three times a year. Millennial men travel less than women, as 44 % of the participants had not flown within a year. The biggest participant group, women aged 22-24, had travelled either 1 or 2 times in a year.
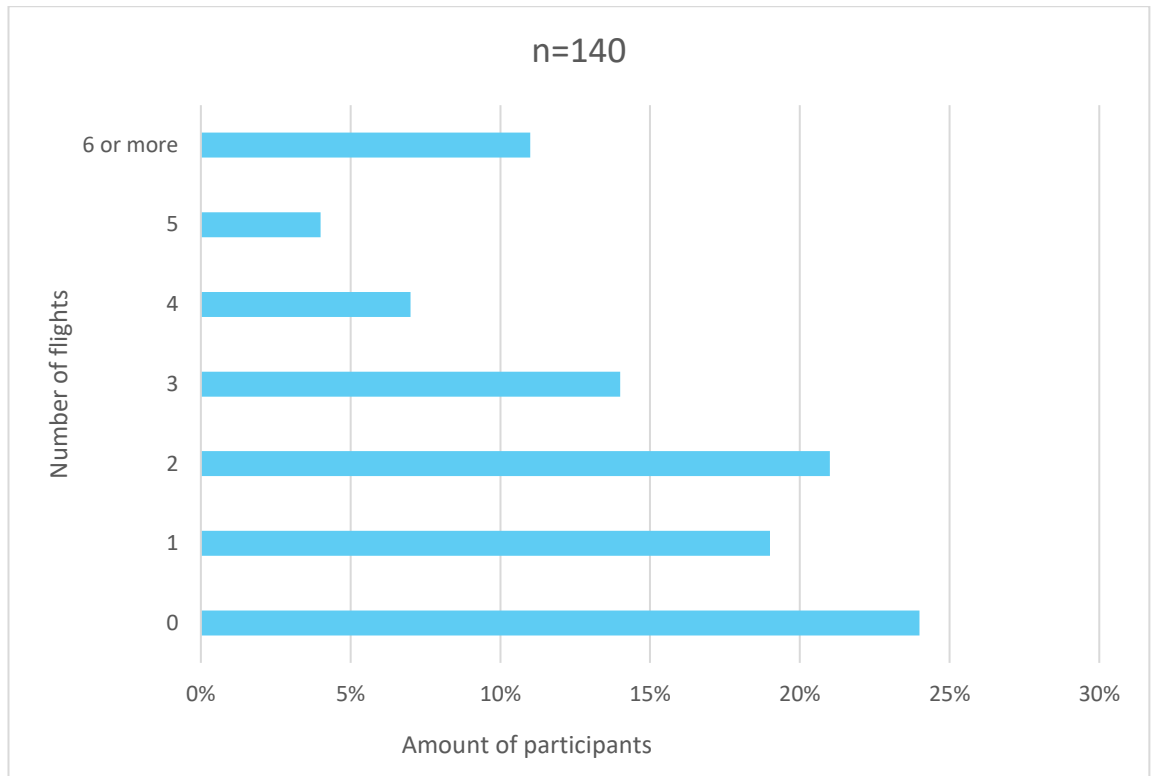
Figure 8. Chart of Millennials' air travelling within a year

The questionnaire asked the participants to evaluate how worried they were about the climate impact of aviation. A big part of the participants said they were very worried (44 %) or extremely worried (31 %). Smaller groups by 16 % said to be only a slightly worried and 9 % of the participants were neither a lot nor a little. Only 1 % said they were not worried at all. The only age group that showed indifference towards the climate effects were the ages between 18-21, of whom 6 % told not to be worried at all. The biggest worriers by almost 90 % were 25-27 and 28-30 years old. As the theoretical framework suggested significant attitude and behavior differences between genders, where these analyzed as well. As seen in the figure 9, women were far more worried as 78 % said to be either worried or extremely worried, whereas only 50 % men told to be worried.
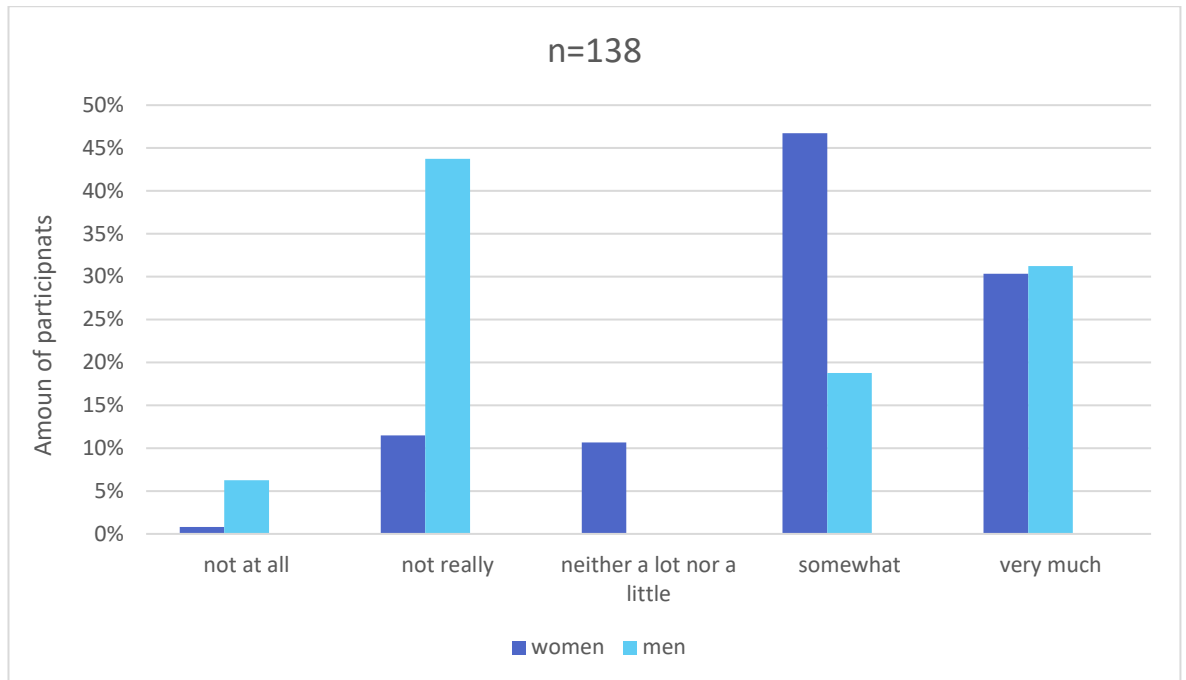
Figure 9. Gender differences about the worry of the climate impact of aviation

After this the participants were asked to choose how often they think about the climate impacts of their own air travelling, which refers to the research question does the awareness lead to more sustainable friendly actions when considering travelling by air. The biggest group by 33 % said they only consider it sometimes. Equal number of participants by 24 %, said either to consider it often and seldom. 15 % of the participants said to think it always, 4 % said to never consider and 1 % were uncertain. However, regardless of the worry of the aviation's climate effect between the group of 28-30 years old Millennials, none of them told to be always thinking about the climate effects of their own flying habits. Between age groups of 22-24 and 25-27 years old, nearly half of the participants told to think about it either often or always. Gender differences were again seen as female Millennials think more about their own actions as 3 out of 4 (75%) of women answered to think about it at some level, whereas half of the men participants answered with the same option.

To get information whether there's a correlation with the awareness leading into action two questions were reflected. The question about being worried about aviation's climate impact was reflected with how often the participant thought their own flying habits. Almost all (98 %), who had selected to be worried about aviation's climate impact had also selected to think often or always their own flying habits.

The participants were asked whether they have switched to another type of transportation due to the climate impacts of flying. Over half (57 %) of the participants answered with "no", 22 % answered with "yes" and 21 % said taken no trips by airplane within a year.

5.2 Results to like-minded and agreement of being influenced to select sustainable travelling

The questionnaire asked like-minded or agreements in a Likert-scale on a few questions. One of these asked, it was hoped to get information on how much certain claims affected to choose more environmentally-friendly type of travelling. These claims were the knowledge about the climate impacts of flying, social influence, lifestyle, habit transferred from parents, and media. Like seen in figure 10, media was impacted the most and parents the least. However, more about the results are explained in depth in the following text.
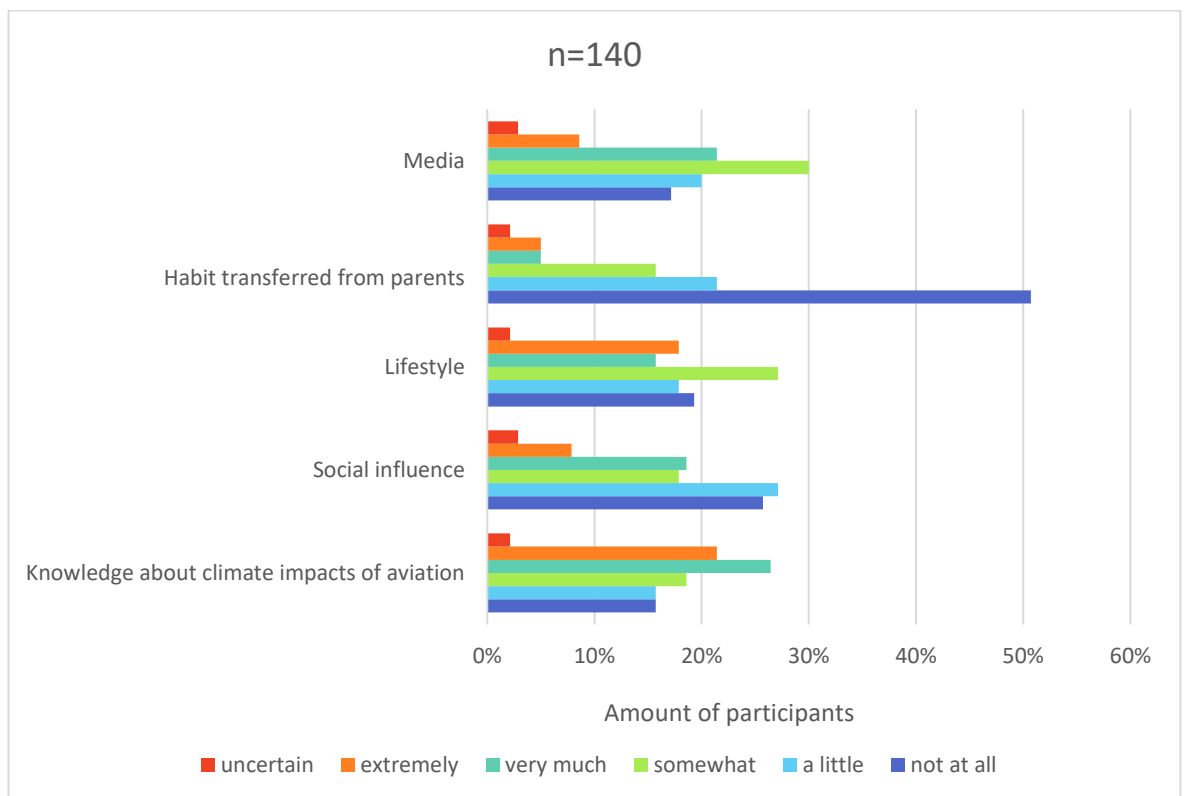

Figure 10. Factors influencing to choose more sustainable type of travelling

There was a lot of dispersion in the "knowledge about climate impacts" as 26 % were affected very much, 21 % were affected extremely, 19 % somewhat affected, 16 % were both only a little affected and not at all. 2 % of the participants were uncertain. The least impacted were in the age group of 31-33 as half of them chose that option, followed by 18-21 years old by 39 %. The most impacted were 25-27 and 28-30 years old with over than 80% of the participants in both groups. Between genders, women were almost 20% more influenced, as 69% told to be influenced at least at some level, on contradictory to men of which 50% told to be influenced at least at some level.

Social influence did not seem to affect a lot, as 27 % said it only affected a little, 26 % said it did not affect at all, 19 % said it affects very much, 18 % said it affected somewhat, 8 % said it affected extremely and 3 % were uncertain. The least affected groups were the age extremities 18-21 and 31-33 years old. Men showed to be less impacted as 81 % of the participants said social influence to have little or no impact at all, when women answered the same choices by 49 %.

Lifestyle affected somewhat of the participants by 27 %, however the next voted answer was not at all with 19 %. Only a little and extremely affected shared the same results with 18 %, very much affected with 16 %, lastly 2 % who were uncertain. The age group of 25-27 years old were most affected among others as 88% from that group were affected at some level. Women were more likely to be influenced as 64 % agreed it at some level, whereas men said to be influenced by 38 %.

Habit transferred from parents had the most radical differences. A bit over half (51 %) of the participants stated it did not affect at all, 21 % said it affected only a little, 16 % said it somewhat affected, 5 % for both very much and extremely and 2 % were uncertain. The age group 31-33 were the least affected as all the participants in this group said there were only a little or not at all affected by their parents, however the most affected group was aged between 28-30.

Last option, media has disparity on the answers. 30 % said it affected somewhat. Two opposites had very similar voting as only a little got 20 % and very much got 21 % of the answers. Almost same amount was reached with the option "not at all" by 17 %. Only 9 % were affected extremely and 3 % were uncertain. Media was affecting the least for the oldest group of 31-33 years old and the most by the youngest, 18-21 years old. Gender difference here was significant as 50 % of male respondents told not to be affected at all, whereas only 13 % of females answered with the same option.

5.3 Results about the awareness of aviation's climate impacts and offsetting

The main research question aimed to find out how aware Millennials are about the environmental impacts of their flying habits. Therefore, the knowledge and awareness about climate impacts of aviation were asked in a few questions. The participants were asked to choose from a multiple choice question, how many years do the carbon dioxide emissions last in the atmosphere. Almost half (46 %) of the participants answered with the choice "for hundreds of years", followed by "for tens of years" with 32 %, "for thousands of years" with 18%, and "for years" with 4 %. The correct answers for the question was that carbon dioxide emission last in the atmosphere for thousands of years.

Another question that was trying to figure out Millennials awareness by asking how much aviation causes emission at global level. More than half of the participants by 55 % answered with 25-26 %, followed by 27 % answering with 3-4 % and lastly almost one fifth (18%) of the participants answered with 32-33 %. The correct answer for the question was that aviation causes emissions globally by 3-4 %. The biggest group to get it right by were the 31-33 years old Millennials, as 3 out of 4 answered correctly.

One question first stated that the fuel used in the airplanes is tax free. Then it asked the participants choose from six different choices, how much they were willing to pay for the tax if the gathered money from it was directly used in projects that reduces the negative climate impacts caused by flying. Seen in figure 11, 39 % of the participants were willing to pay for 11-20 €, 24 % for 6-10 €, closely followed with 22 % for 21-50 €, 6 % for more than 50 €, 5 % for under 5 € and 4% for not being ready to pay. The most willing to pay over 50 € were Millennials aged between 28-30 years old. The biggest group for not ready to pay anything where the oldest group, 31-33, with one fourth answer rate. Men were far more likely to choose option "I'd not be ready to pay" as one fifth (20%) of them voted for that, compared to 2 % of female participants. Between the choices starting from 6 €, women had higher response rate in all options. The question was also reflected to ones who had selected to either to think often or always their own flying habits. None of them had chosen "I'd not be ready to pay".
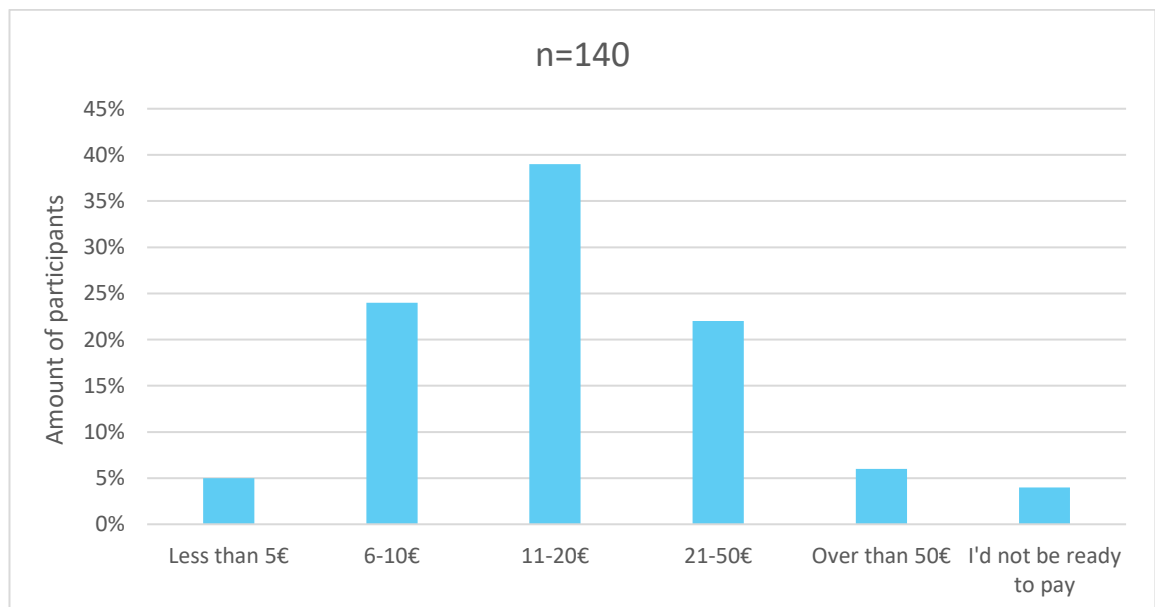

Figure 11. Readiness for paying flying tax varied between 0 € to 50 €

The knowledge about the airline companies' effort to take more responsibility was inquired by asking if the participant knew that air travelling can be compensated in return for money. The options could be selected from a five-point Likert scale. 32 % of the participants strongly agreed with the statement. However, the next biggest group by 22 % said they disagreed, followed by 20 % who agreed. 18 % of the participants neither agreed nor disagreed, leaving disagree with 8% of the answers. More than half of the youngest Millennials, 18-21, had not heard about offsetting programs, whereas 68 % of 25-27 years old had heard of it.

The questions were extended with a follow up question, in which the participants were to choose from set of choices where they possibly had seen airline companies to advertise their compensating programs. The participant could select all applicable choices and it included an open-ended choice which will be discussed later in this section. Over half of the participants by 56 % had not seen any kind of advertising, but 33 % had seen it on the website the airline company. 14 % of the participants chose open-ended option "other, where". 7 % had seen advertisements on travel brochure, and 5 % on magazines. On the open comments, the biggest group had seen them either through television, social media or other types of media. Some answers also pointed out outdoor advertising, ads while booking or ads in the airplane, and through a friend.

This was followed up to inquire whether the participant had compensated their flying, answering research questions whether the awareness leads to actions. 74 % stated they had never compensated them and followed by 11 % of the participants who had 6 % had rarely compensated their flying closely followed by 4 % who had often done it. 4 % had sometimes compensated and only 1 % said to do it always. Among these a 22-24-year-old Millennial had most likely compensated their flying emission, however there was a small diligent group of 25-27 years old Millennials, of whom 6 % had always compensated. Compared to other Millennials, there was no other group who had always compensated their flight.

Those who had compensated their flights were asked to share from a set of choices and "other, what" the airline they used for offsetting. 74 % of those who had compensated their flying emissions, had done it with Finnair. Around one fifth (21 %) of the participants chose the option "other, what". The three answers there included Cathay Pacific, Norwegian and "I do not remember". However, Norwegian does not provide any offsetting program. 16 % of the participants who had flight with SAS had used their offsetting program. Qatar, Lufthansa, KLM and British Airways all had each gathered 5 % of the participants.

5.4 Results about importance of factors when buying flying tickets

The questionnaire had a set off background questions to find out what are the biggest drivers for buying a flight ticket. The participants were asked to select how important they regard some statements when selecting the flights. These included price, direct flight, schedule, responsibility of the airline and "other". As seen from figure 12, price was no doubt the most important, compared the responsibility of an airline, which had the least votes.
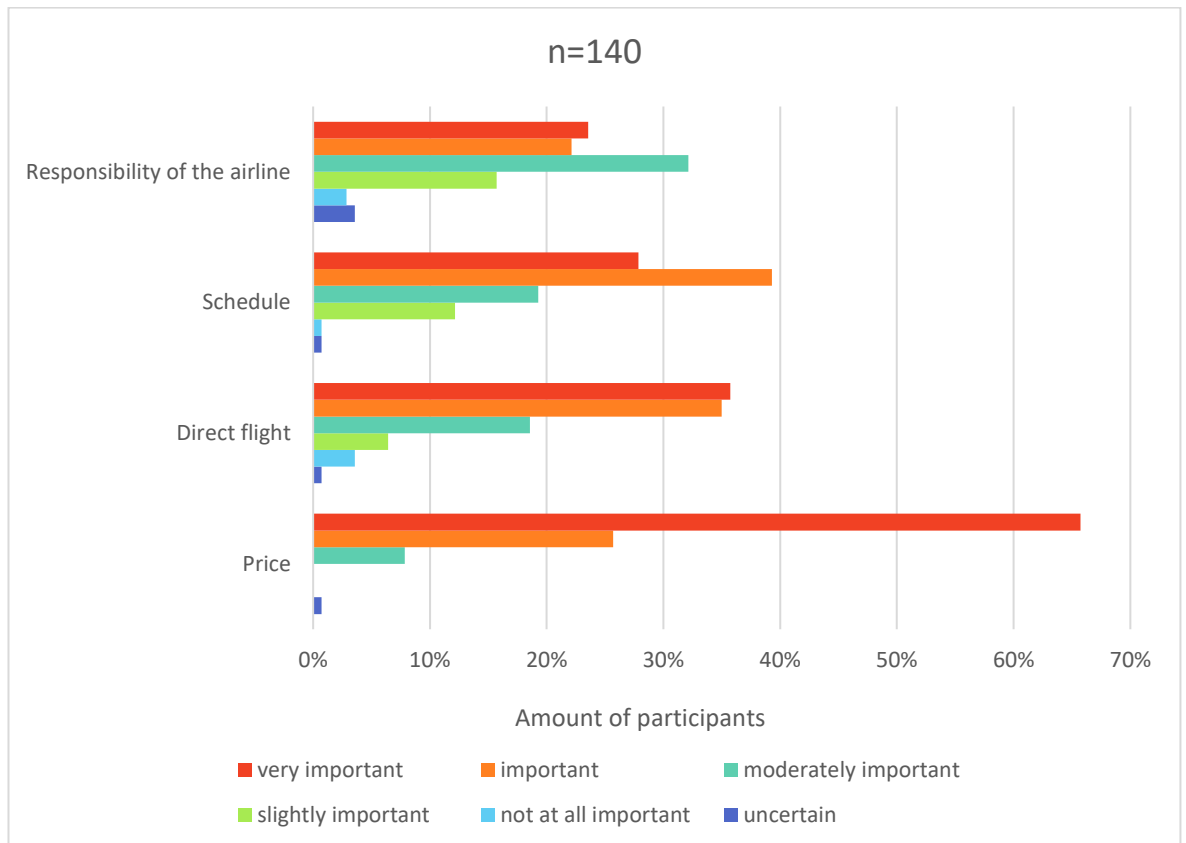

Figure 12. Price was found to stand out from other factors when choosing a flight ticket

First concerned about the price of which 66 % said to be very important, followed by 26 % who tend to keep it important. Only 8 % said it to be moderately important and 1 % were uncertain. None of the participants selected "slightly important" nor "not important at all". Price was the most important factor for 28-30 years old.

Next statement was a direct flight. Again, the biggest group with 36 % chose it as very important, closely followed by important with 35 %. 19 % of the participant state it as moderately important, 6 % state as slightly important, 4 % state as not important at all and 1 % were uncertain. This feature was the most important for 31-33 years old.

Third statements were about the schedule. 39 % said it to be important followed by 28 % of very important. 19 % answered it to be moderately important, 12 % consider it slightly important. Not important at all and uncertain each gathered 1 %.

Lastly was asked about the responsibility of an airline company. Almost one fourth (24 %) considered it very important, closely followed by important with 22 %. The biggest group of 32 % said it as moderately important, whereas 15 % said slightly important, 4 % were uncertain and 3 % not important at all. Among the age groups, more than half (56 %) of 25-27 years old seemed to consider responsibility either important or very important. This question was reflected with the ones who told to be worried about aviation's climate impact. However, less than half (47 %) who had said to be worried about aviation's climate impact had chosen responsibility of an airline either important or very important.

The participants were asked to add any additional options what they regarded as important while considering to buying flight tickets. Many pointed out that they would rather choose a familiar company or domestic company, Finnair. Other factor that got many answers was regarding safety, reliability and reputation of the airline company. Other things mentioned included the easiness of the reservation, service, price-quality ratio, and experiences from family and friends.

5.5   Results about the barriers and motivators behind environmentally conscious air travelling behavior

One of the sub-question of the thesis was to find out the what motivations and barriers Millennials have for environmentally conscious air travelling. Therefore, the participants were asked to answer about their like-minded on a set of statements on a five-point Likert scale. In those questions the attitude-behavior gap was also investigated by comparing the worry about the climate impacts of aviation with the statements that can constrain from choosing more sustainable option. The statements were: "I know how to make my travelling more climate-friendly", "I recognize climate-friendly choices but other choices seem more appealing", "I can afford to pay for sustainable travelling" and "My agenda agenda constrains the climate-friendly choices". Seen in figure 13, people agree to know how to make their travelling more climate-friendly, on the other had they mostly disagree with being able to afford sustainable travelling.
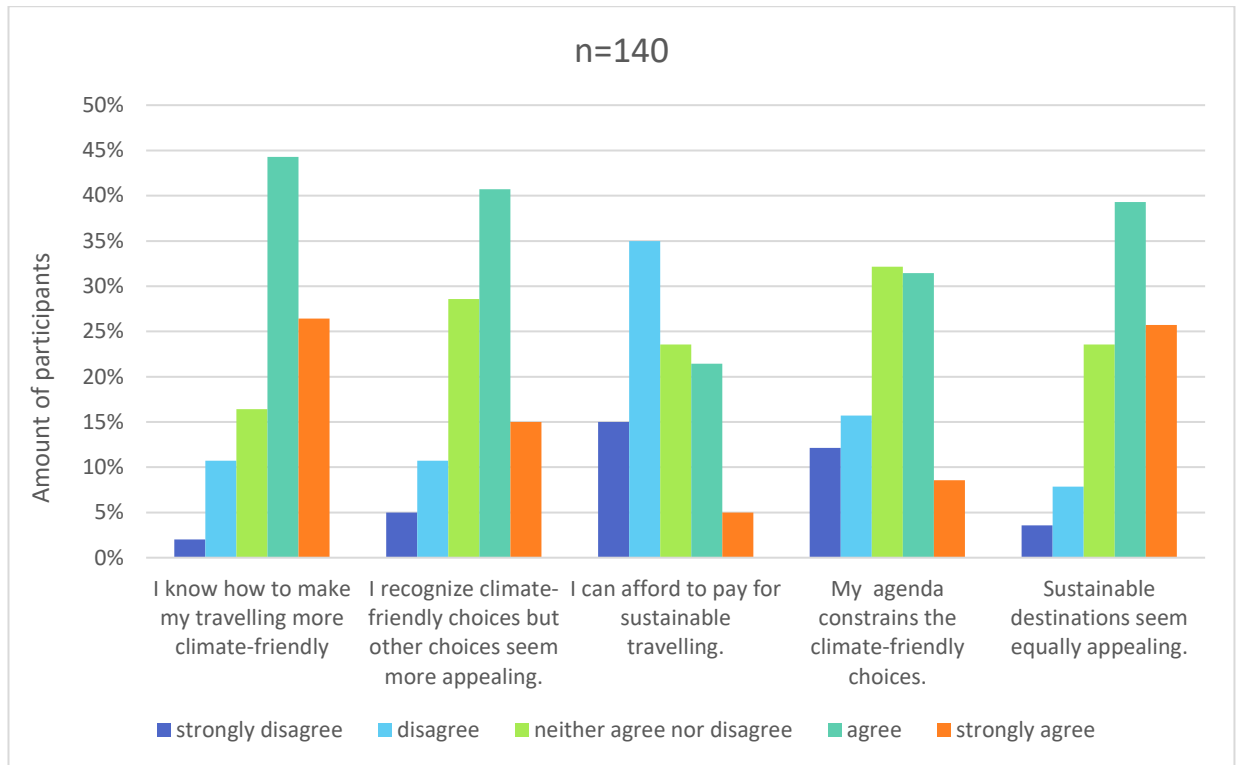
Figure 13. Statements regarding the constrains of sustainable travelling

First statement went as: "I know how to make my travelling more climate-friendly". The biggest section of the participants with 44 % said they agreed with the statement, 26 % said they strongly agreed with the statement, 16 % said they neither agree nor disagreed with the statement, and 11 % said to disagree with the statement. Small group of strongly disagree gathered 2 %.

Next statement was: "I recognize climate-friendly choices but other choices seem more appealing". 41 % of the participants agreed with this statement followed up with 29 % of the participants who said they neither agree nor disagree with the statement. A group of 15 % of the participants said they strongly agreed. Final percentages split as follows: 11 % disagreed and 5 % strongly disagreed.

Third statement implied: "I can afford to pay for sustainable travelling". A group of 35 % answered disagree, however, 21 % answered on agree on the statement. Almost one fourth (24 %) of the participants did neither agree nor disagree with the statement and 15 % strongly disagreed. A smaller group of 5 % strongly agreed. Most likely agree with the statement were the age group of 22-24, very closely followed by 25-27. The most disagreement was among the oldest Millennials, 31-33. The question was also reflected to ones who had selected to either to think often or always their own flying habits. Roughly a third (32 %) of those agreed or strongly agreed on affording sustainable travelling.

The fourth statement claimed: "My agenda agenda constrains the climate-friendly choices". 31 % said to agree with the statement, however 16 % answered disagree and 12 % on strongly disagree. A significantly big amount of the participants, by 32%, neither agree nor disagree with the statement. Residue of 8 % strongly agreed.

Last argument said: "Sustainable destinations seem equally appealing". Most of the participants seemed to agree with the statement as 39% answered agree and 25 % to strongly agree with the statement. Neither agree nor disagree was selected by 23 % of the participants, disagreed was selected by 8 % of the participants, uncertain was selected by 7 % of the participants and strongly disagreed by 4 %. The strongest disagreement was among the age group of 18-21.

5.6   Summary of the results

Among the 140 participants, by 91 % chance the responder was a female from the age group of 22-24. Within a year, most of the participants had travelled between 0-3 times, and the biggest travelers among the respondents were 28-30 years old Millennials, and women in general. Based on the questionnaire results, Millennials are mostly worried about the climate impacts of aviation, contradictory they only sometimes think about the impacts of their own flying.

When considering how some factors effect on choosing more climate-friendly type of travelling, parents had the least impact whereas media has the most power. On most cases besides from habit transferred from parents, female Millennials were more impacted by the factors than male correspondents.

Most of the Millennials were neither aware of the impact of aviation emissions in a global level nor how long does the emitted carbon dioxide last in the atmosphere. Most participants had an idea that the carbon dioxide would last in the atmosphere for hundreds of years and that emissions at global level would be 25-26 %.

Compensating seemed unknown for rather many, as 52 % participants agreed but 30 % disagreed when asking whether they heard of compensating before. 74 % had never compensated their flights but most of the ones who had purchased the compensation, did it through Finnair. More than a half of the participants had not seen any kind of advertising regarding the topic, whereas a third had seen in the website of an airline company. Also, different types of media, e.g. TV and social media were mentioned. When asking about the

willing to pay for flying tax, most answered to be willing to pay between 11-20€. Most un-willing were the oldest, 31-33 years old and men in general.

9 % of female respondents had either often or always compensated their flying emissions compared with males of whom none had done it. In addition, 28 % of female participants agreed on the statement "I can afford sustainable travelling" compared to 19 % of male participants.

When asking about the importance of some factors when choosing flight tickets, 92 % of the answers considered price to be important. The responsibility of the airline company got the least votes. However it got some value, even though all the other factors, i.e. direct flight and schedule, got overridden as more important. The open comments disclosure that famil-iarity of the airline was regarded as important by many.

When intriguing the motivators and barriers behind environmentally conscious air travelling, the biggest barrier ended up being the price of sustainable choices. However, many re-spondents told to be aware on how to make their travelling more climate-friendly which can be seen as a motivator. In addition, the other choice which got almost the same amount of agreement was that the sustainable destination seemed equally appealing.

The age group of 25-27 seems to be in various cases the most educated and having the most knowledge over the climate related topics of aviation. This group was the most likely to have heard of compensation and these Millennials were the most by 94 % to think about the effects of their own flying habits. They were only a bit behind of 28-30 years old, when considering the worry about the climate effects of aviation industry and how it had been affected to choose alternative transportation method due to the knowledge about the climate impacts. They were the most interested in the responsibility of the airline company, and were the second biggest group to agree with the statement "I can afford to pay for sustain-able travelling." However, they were the biggest group who has not changed to alternative transportation method.

To sum it up, in general, the findings suggest that the most interested in the topics regarding sustainable air travelling were female respondents aged between 22-27 years old. They are most willing to pay for more sustainable choices and were far more influenced by factors that could drive for more sustainable travelling choices. The least aware and interested were youngest participants, 18-21, as they seemed to be least worried about the climate effects of aviation industry, had less thought about the climate effects of their own flying habits,

were the least impacted to choose more climate friendly travelling choice even when knowing about the negative climate effects of flying. More than half the participants in this age group had not heard of offsetting.

6   Discussion

In this section is evaluated and discussed whether the quantitative survey answered on the objectives and research questions of this thesis. The key findings of the research disclosure the current state of Millennials awareness, knowledge. In addition, the research showed the attitude-behaviour connections, and whether the participant was aware and interested in the topic. The results showed that the attitude-behaviour gap exists.

As revealed in chapter 1.1. with thesis objectives and research question, 70 % of young are worried about climate change. In the questionnaire the participants were asked to evaluate how worried they were about the climate impacts about aviation industry. 74 % agreed to be either worried or extremely worried, however an attitude-behaviour gap was found as 39 % said they think about the impacts of their own flying actions. This is a bit less than suggested in the theory as based on Sitra's report (2019, 41), where 44 % of young stated to take environmental impacts into account when considering holidays. Those two questions, how much climate change worries and how much aviation's impact worries, of course are not in exact correlate but they both are discussing the relations with climate change and support the existence of attitude-behaviour gap. In chapter 3.3, based on the findings of Reitknecht (2019) and Global Data (2019, 4), where Millennials' travelling habits were discussed was mentioned that 70 % take at least one trip a year but most travel two to five times. The questionnaire revealed that most of the participated Millennials travelled by air between zero to three times within a year. It can be confirmed then that it aligns with the theory.

Many of the questionnaire questions were based on the chapter 3.2 Millennials as consumers. Despite the theory by Terävä (2018) where was stated that 30 % in the age group of 23-35 years old Finnish, and 40 % of age group 18-22, are willing to pay more for a product or service that presents and drives for sustainability the questionnaire suggests something else. Terävä's statement does not seem to encounter with questionnaire as the youngest participant were far less likely to pay for the flying tax even when the money was used directly into the programs that aimed to reduce the climate impacts of aviation. In addition, they were reluctant to agree with the statement "I can afford sustainable travelling". The oldest Millennials also were the least willing to pay for flying tax and stated to disagree with the fact whether they'd be able to afford sustainable travelling. This was surprising results as the older Millennials would most likely have steady income and economic wellbeing. In general, sustainable choices are thought to be more expensive, lower performance and inconvenience (Naderi & Steenburg 2018, 281), which might constrain other than environmentally conscious Millennials from preferring them.

Price was found to be the most important driver by 91 % when buying flight tickets. Fromm (2018) has stated this theoretical framework, that Millennials are very likely to hesitate when the transportation cost is expensive. In addition, Finnair (2018) conducted a research which findings included that most of the participants considered ticket price as the most important factor. However, it needs to be kept in mind that the customer base of that research included also others than only Millennials. Naderi & Steenburg (2018, 281) had examined that CSR would be more valuable for Millennials than price. Based on the low voting compared to price in the questionnaire, this statement can be considered false when talking about the interest towards airline's responsibility. The questions which aimed to find the barriers for sustainable travelling had very similar results as in the theory based of Booking.com (2019). Only exception here was that Millennials in the thesis questionnaire found sustainable destinations much more appealing than in the one conducted for Booking.com.

Supported by Autio & Wilska (2003, 8) and Myllyniemi (2016, 81-82) in the chapter 3.2. "Millennials as consumers", the questionnaires similarly disclosure that men were much more indifferent about the sustainability issues. 78 % of female participants said to be either worried or extremely worried about the climate impact of aviation, whereas 50 % of men voted for the same options. Similarly, with the question how often the participant thought about the impacts of their own travelling habits, 41 % of females answered either often or always compared to 19 % of male respondents. When comparing the importance of the responsibility of an airline, female respondents voted it to be either important or very important 48 % compared to 31 % of the male correspondents. When asked to agree with the statement "Sustainable destination seems equally appealing", 60 % of women agreed with it, compared to 30 % of men.

However, when asking about the willingness to pay for a flight tax, some participants might have had different thoughts depending on the distance of the flight. As most offsetting programs similarly offer different prices depending on whether the flight is domestic, inside Europe, or out of the continental borders. As based on the findings of Pulido-Fernández & López-Sánchez (2016), those who would be ready to pay more are willing to pay 10 % more of the total cost of the travel expenses. Therefore, this question would have needed some adjustments, depending on the price of the flight ticket. Even though the mistake in the question, almost everybody were willing to pay for the tax. Among the Millennials who had done offsetting, Finnair was the most used. This is most likely, since Finnair has done enormous marketing regarding it as well as it is favored airline by the Finnish Millennials. This was seen as well when asked to state addition important factors when buying flight tickets. Many of the participant highlighted the familiarity or Finnish company.

Naderi & Steenburg (2018) had examined, that habit transferred from parents, lifestyle, social influence and ecological knowledge would matter most for Millennials when purchasing sustainable products. On the questionnaire, "media" was added and knowledge was fixed as "knowledge about climate impacts of aviation". The research disclosure that most of these had some impact, however, parents had the least influence overall. The age group of 31-33 were the least influenced by their parents as they have formed their own steady habits and mindsets. In addition, they are not as adaptable to new attitudes and habits than younger participants. As younger Millennials might in some cases still live at home, they are more likely to still be affected by the habits of their parents.

The oldest age group of 31-33 years old were also the least impacted by the media. This can be caused by the fact that they do not use as much social media, where the news about climate impacts are reported (Smith & Anderson 2018). On the other hand, the other types of media, such as printed or broadcast media are more often consumed by these older Millennials, so it leaves a question why these types of media had less impact in general. However, surprisingly, social influence did not have that much importance on choosing more sustainable types of travelling even though according to Chaudhary & Bisai (2018), stated in the theoretical framework that environmentally concerned people can affect through social pressure on close family members and friends towards green purchase intention. In general, family, friends, social networks and peer reviews influence on Millennials decision making according to Expedia (2016, 18), which is again contradictory with the findings of the questionnaire.

The theoretical framework suggested in the chapter 2, that sustainable travelling means ecological accommodation to most, and the fact that it is hard to grasp. This is found from the results of the questionnaire as well. Millennials could have been asked to tell the first thing that appears on their mind when talking about sustainable travelling to get a more realistic idea about their knowledge about the topic. To continue, as asking like-minded of sustainable travel, a significantly big portion of the participants answered "nor agree neither disagree" on some choices. These were whether sustainable travel constrains agenda and whether sustainable destinations seem equally appealing. In addition, based on the theory of Niemistö & al. (2019, 46) many consumers do not recognize the low carbon emissions flights, which is a sign of unawareness. The statement "I recognize climate-friendly choices but other choices seem more appealing" was incorrectly asked, as it had two question in one, which is strongly recommended to avoid in questionnaires. To improve the question, only "I recognize climate-friendly choices" should have been asked to get more validation to the statement of whether sustainable travelling is unknown concept. To add, however, many participants had not heard about compensating programs before neither had seen

any advertising regarding it. In addition, many participants were unsure whether they had compensated their flying earlier. Therefore, as their knowledge about the entire compensating as a concept seems to be unfamiliar, it cannot be known whether more Millennials would be willing to compensate their flying more if they aware about it.

Offsetting and compensating programs and other type of goodwill might have been mixed with some of the participants as there was a few answers where Norwegian had been mentioned to be used in offsetting. However, Norwegian has not been providing any emission compensating programs but they have had other kinds of charity such as possibility to donate money for UNICEF. I strongly assume this is behind the answers regarding offsetting and Norwegian. On a question about how often one had compensated their flights, a very big part had answered "uncertain", which gives also signals that the concept of offsetting is unclear and not well known by the participants. Moreover, as the participants were asked about how often they had compensated, this question turned out to be a bit vague, as it doesn't give any time range. Also, as people had flown in a such a varying amounts is hard to estimate how often they had done this, even though when they had compensated sometimes.

The questions which were trying to figure out the knowledge about aviation's impact on the climate has occurred some doubts. Most of the participants selected the choice 25-26 %, when the correct answer where 3-4 %. This has been mostly caused by the aroused fear through media channels. In addition, there has possibly been cases in which the participant has had no idea, and therefore selected the one that has reflected these scaremongering spread through media.

6.1 The findings and analysis of the research questions

The questionnaire gave an important insight about Millennials awareness and attitudes towards flying from the point of view of the research questions as well. Analysing the questionnaire made possible to answer to the research question. Starting with the sub-questions, first is to analyze:

- Does the awareness of the impacts lead to more sustainably friendly actions when considering travelling by air?

Like based on the literature review, price is the most important driver for Finnish Millennials. However, some have chosen to compensate, fly less, or substitute to other alternative types of transportation in order to reduce their personal carbon footprint caused by flying. Parents

and social influence do not have any significant impact on this. In addition, like the theoretical framework stated in the chapter 3.4. barriers and motivations for sustainable travel, the attitude-behavior "green" gap is very visible in the Millennials answers. Therefore, the awareness does not impact on most cases to more sustainable actions when considering flying.

Next is analyzed the sub-question:

- What are the motivations behind environmentally conscious air travelling behavior?

The questionnaire revealed the connection between these aspects. Even though the awareness did not impact flying habits on most cases, the most environmentally aware and sustainably minded Millennials had been driven to more environmentally conscious travelling behavior due to worry about climate change and climate impacts of flying. The other motivators behind the more sustainable travelling actions are the lifestyle, knowledge, environmental impacts and media.

The third sub-question aimed to investigate:

- What are the barriers behind the environmentally conscious air travelling behavior?

Even though sustainable destinations are regarded as equally appealing it had less impact than any other factor on that question. The most significant and distinct factor is the price. As 91 % of Millennials considered it either important or extremely important, compared to the second biggest factor, by 70 %, which was considered to be a direct flight. Price is seen in the other sections of the questionnaire as well since many, especially the youngest participants and men, regarded that they can't afford climate-friendly choices.

Last, the finding to the main objective and research question of this thesis. The main research question was:

- How aware Millennials are about the environmental impacts of their flying habits?

The answer was exposed on the most obvious questions directly asking about the awareness from the participant, "for how long does the carbon dioxide emissions caused by aviation stay in the atmosphere" and "how much CO^2 emissions the aviation industry causes globally". Based on the findings of the questionnaire some of the Millennials seem to be aware of the climate impacts of flying but there is still a lot of dispersity in the results. The differences can be explained with age. The youngest and oldest Millennials seem to be the

least aware of the environmental impacts of their flying. In addition, their interest towards the topic seems to be very little.

6.2   Reliability and validity analysis

Empirical research usually discusses about validity, which means whether the research has been able to measure what it is meant to measure. However, these do not always match as the questions in a questionnaire form might have been misunderstood by the target audience. If researcher keeps analysing the results with the misunderstood questions the results are not competent and valid. (Choi & Pak 2004; Hirsjärvi & al 2007, 225-226.)

Reliability is another measuring way which means the repeatability of measurement results. Even though all researches try their best to avoid errors, should they all be evaluated from the validity and reliability point of view. Reliability can be measured, for example, with repeating the experiment and comparing the results. Whether the results in both researches align, its findings can be stated to be reliable. (Hirsjärvi & al 2007, 226.) As the most basic participant was a female between 22-24 years old and less likely a male between 31-33 some of the results can be unrealistic. As there are significantly fewer men participating in the research the gender differences are important to take into consideration. For example, most of the answers favors women to be interested in the climate impacts of aviation and its emission prevention.

Analysing the results is not enough but rather there should be created synthesis from the results. Synthesis are ways to clarify the main features and give clear answers to the research questions. Therefore, the final conclusions are based on the synthesis. In addition, the meaningfulness of the result should be reflected in the research area but also discuss whether there are any wider meanings the results may present. (Hirsjärvi & al 2007, 225.)

Social desirability bias leads to counterfeit responsibility, whether it being an intentional attempt or not trying to attain social approval (Choi & Pak 2004; Kuokkanen 2017). Surveys addressing ethics are deeply tied with bias and therefore contributing to the attitude-behaviour gap when examining stated and actual consumer CRS choices. Usually, this phenomenon is greater in quantitative studies rather than in qualitative researches, as interview setting increases the amount of honesty. On the other hand, a quantitative survey offers a way to claim ethical consuming without corresponding actions. (Kuokkanen 2017.) The bias also extends on self-reporting as it accounts for 11 % more of the variance in behaviour compared with behaviours that were objective or observed (Hassan, Shiu & Shawn 2014).

The reliability and validity of the questionnaire was reflected and some errors and contradictions were found. There is a contradiction between the question "have you switched the transportation method due to climate impacts of flying within a year" and with the one asking how many trips by flying the participants had taken within a year. 24 % of the participants said taken no trips by airplane within a year and on the question above asking about switching the type of travelling, where 21 % of the participants said take no trips within a year. The author assumes that a solution for the problems may be that the participant has missed the part "within a year" and therefore changed the answer either yes or no. There was a mistake in the questionnaire in question 17 (see appendix 1), where the participants were asked about their like-minded on a set of statements about sustainable travelling as the options included "neither agree nor disagree" and "I do not know". Both of the answers are regarded as a "neutral" answer. In these cases, the answers were summed together as neither agree nor disagree. Moreover, some research has stated that such as option should not be included in the Likert-scale question. Also, those answers do not provide any valuable information, therefore they should be discarded in the first place. In addition, there was a mistake when asking how much aviation causes emissions globally. The questionnaire stated it to be 3-4 % based on the old findings when thesis was started but then later on corrected to the theory. While the correct answer would have been 2-3 % of CO^2 emissions, it does not affect on the knowledge results as the other options were scaled much higher.

Some sources in the chapter considering Millennials were rather old, dating to years 2003 (Wilska) and 2008 (UNWTO). In these sources the behaviours of the young and their travelling behaviours were mainly addressed. However, it can be assumed that behaviour patterns of young people do not dramatically change. Moreover, these materials were reflected on newer sources of the same topics, which supports their validity and relevancy.

There were two questions which directly asked the knowledge and awareness of the Millennials about the climate impacts of aviation. The answers from those questions need to be considered with mindful analysis. The questions should be observed from the perspective that the participant have had no idea and had randomly selected the option, mostly affected by the frightening news presented daily on media. This fact is supported in chapter 3.4. Barriers and motivations for sustainable travelling behavior, where Kohl (2018) said that climate change is discussed on constant worst-case scenarios and negativity. Therefore, as aviation is on the news constantly regarding the emissions, it might have stuck on many Millennials ideology that the current global emissions of aviation take up bigger section. In addition to these worst-case scenarios and negativity, it can feed fatalism and denialism as discussed in chapter 3.1 CSR attitudes of Millennials. As according to Hallamaa (2018), in that chapter, 4 % regards climate change as a slight problem and another 4 % do

not see it a problem at all. Thesis questionnaire gathered similar answers when intriguing whether Millennials are worried about the climate impacts of aviation industry. 16 % admitted to worrying only a little, whereas 1 % said not to worry at all. Especially the youngest belonged to the group of least worriers. All other groups except 18-21 expressed their worry towards the climate impacts of aviation at some level.

The knowledge and awareness were investigated also by asking the participants to choose from a Likert scale, if they had heard of offsetting. Whereas 52 % either agreed or strongly agreed on hearing about it, 30 % answered with disagree or strongly disagree. 18 % of participants neither agree nor disagree. As a result seen in this chapter, we can state that knowledge about the climate impacts are not known by most Millennials, neither they do not know the effort aviation industry tries to make with their compensation programs. In addition, the concept of offsetting is unclear for many. Here can be added that as more than a half were not aware about offsetting programs, the statement "I compensate my flights" gathered 74 % of negative answers and 11 % were uncertain. This gives also signals that Millennials are unsure about the meaning and purpose of offsetting. Moreover, the awareness could also be seen in statements where the participant had to choose from a set of sustainable travelling related questions. A high number of Millennials, ranging between 16 % up to 32 %, depending on the statement, selected "neither agree nor disagree". Thus, it can be seen as a sign of being unaware what sustainable travelling is.

As the questionnaire was shared on author's own social media channels, and even though author's friends shared it with their friends, there is a need to be critical of bias issues. Some of author's friends might have answered to the questionnaire on multiple times in order to support author. This can be occurred, as the questionnaire had no registration or logging in through, for example Google account, making possible to fill the form multiple times. Usually the people who had left the questionnaire unanswered have different answers from the ones who had answered (Taanila 2019b). Therefore, the results can't be totally generalized to all Millennials.

6.3   Conclusions

The thesis topic was narrowed from the original idea to study sustainability from its all aspects, to only environmental and climate impacts. Based on the findings of the questionnaire, its flaws and other information from the theoretical framework, some future development studies were discovered. Sustainability in aviation from the pillars of economic and social could be studied to complete the theory and finding of this thesis. Also, it would be interesting to find out Millennials awareness of other types of travelling, especially of cruises, as Finnish people tend to do a lot of travelling to Estonia and Sweden by cruises.

According to Welling (2019), a short cruise trip can pollute more than air travelling. Ship traffic causes three times more carbon dioxide emissions than domestic air travelling (Welling 2019).

Values stay respectively stable, therefore determining one's behavior in the future is expected to align with same values as present. There has been found a strong link between values and consumer choices. (Cavagnaro, Staffieri & Postma 2018, 32.) Due to that, it'd be interesting to see whether the same ideologies and attitudes have stayed over a period of some years. Moreover, as sustainability keeps evolving, this topic could be updated and tested regularly. New implementation and regulations for more sustainable society are set by national level (European Commission s.a.), as well as citizen's initiatives are supported such as different kinds of climate strikes are regularly held, where many young people have taken part (Yle 2019). These events which might lead to more awareness and change of attitudes especially in the youngest generation, Generation Z. This leads to future study recommendation: to compare Millennials and Generation Z in their awareness and attitudes.

Tourism industry in general has faced criticism due to its sustainability issues. Other future study recommendations could expand to, for example, restaurant and accommodation sections. Mentioned in chapter 2. "Climate impacts of aviation", many regards sustainable travelling to include mainly accommodation, therefore it would be very potential to start with. Also, sustainable choices are considered to cost more, performer under expectations and be inconvenient, it could be significant to investigate whether there are actual connection between the statements and how to prevent these kinds of associations to occur.

It is assumed that sustainability will grow its importance and interest over the following years, making its way as a key factor in the entire tourism industry and people's everyday life. How to transfer people's attitudes towards actual behavior, and minimizing the green gap, could be beneficial to investigate. In addition, to investigate more in-depth studies what motivates and constrains sustainable choices, as the insight of those gave only superficial scratch.

6.4   Learning outcomes

The thesis process took around 6 months to be finished from the topic brainstorming to the final version. The thesis was conducted with a great interest of the writer which allowed thorough job on all aspects of the thesis. The writer learned valuable knowledge regarding the topic and was hoping to wake up thoughts among other Millennials about the aviation's climate impacts.

The schedule was followed rather well. In the beginning of the writing process, the author was taking other courses which allowed fewer hours to focus on the project. However, starting from August to mid-October, the author scheduled 8 hours every weekday for thesis related studies to ensure steady pace. The writing process followed chronical order without additional surprises, the only exception being the result analysing process which the author found challenging. The topic was interesting to the author which can be seen in the amount of resources used. Additional journals and articles were read even though all of them did not make it to the reference list. The topic was also discussed with peers during the writing process to get new ideas and insights.

Some challenges were faced during the writing. The most unexpected time was spent on the Webprobol survey. The software had not been used by the author beforehand, therefore the learning took some additional, unexpected time. On top of that, the multiple fixes to the grammar or typing corrections took more time than assumed. Another unexpected time spender was the writing software, Microsoft Word, itself. The author encountered abnormal errors and glitches in the thesis template, which took time to solve.

Before the start of the writing, the author contacted many companies, related to aviation and travelling, intriguing their interest to be a commissioner company. Even though many attempts, rejection was gotten from each company. In the end, the author got commissioned by "The steps towards responsible tourism" -project. The author is content with the outcome of getting to be a part of the project, and being able to produce something relevant for the project.

For future studies, the author knows to spend more time on reading about the topic of research methodologies and data analysis to prevent from making similar mistakes. Also, the author learnt that the possible target group has to be reminded to take part in the research multiple times during the period. Even though, the invitation link was posted on social media and shared by the friends of the author, the response rate could have been higher.

To sum up, the thesis was sufficiently finished. The research questions got results, some of which were supported by the theoretical framework and some opposing answers. Overall, the results can be trusted and conclusions can be drawn based on the findings of the thesis. The author hopes by conducting this thesis, the learning outcomes could provide her a working possibilities in the sustainability department in the future.

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Appendices

Appendix 1. The online questionnaire

Kysely millenniaalien lentämiseen liittyvistä asenteista ja tietoisuudesta

Arvoisa osallistuja

Opiskelen Haaga-Helian ammattikorkeakoulussa matkailualan liikkeenjohdon koulutuksessa. Teen opinnäytetyönäni vuonna 1982-2000 syntyneiden millenniaalien lentämiseen liittyvistä asenteista ja tietoisuudesta. Oheinen kyselytutkimus toteutetaan osana opinnäytetyötä, johon sinut on kutsuttu osallistumaan.

Kyselyyn vastaamiseen kuluu noin 5 minuuttia. Kyselyyn vastataan nimettömänä ja vastaukset käsitellään luottamuksellisesti. Yksittäisiä vastauksia ei pystytä tunnistamaan, sillä tuloksia esitetään ryhmätasolla. Vastauksesi on tärkeä tutkimuksen ja opinnäytetyön onnistumisen kannalta. Tutkimuksen avulla voidaan parantaa ymmärrystä millenniaalien näkemyksistä.

Osallistuminen kyselyyn on vapaaehtoista ja luottamuksellista.
Kyselyyn voi vastata 17.-29.09.2019 välillä.

Kyselyn tuloksiin voi tutustua vuodenvaihteen jälkeen, kun opinnäytetyö on julkaistu Theseus palvelussa osoitteessa www.theseus.fi.

Lisätietoja kyselystä antaa Riikka Ojala sähköpostitse riikka.ojala@myy.haaga-helia.fi

Kiitokset avustasi, arvokkaista tiedoistasi ja jakamistasi tärkeistä mielipiteistä!

1. Sukupuoleni *
○ Nainen
○ Mies
○ Muu
○ En halua vastata

2. Ikäni *
○ 18-21
○ 22-24
○ 25-27
○ 28-30
○ 31-33
○ 34-37

3. Montako edestakaista lentomatkaa olen tehnyt viimeisen vuoden aikana? *
○ 0
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6 tai enemmän

4. Vastaa seuraavaan väittämään *

	en lainkaan	melko vähän	ei paljoa eikä vähän	melko paljon	paljon tai hyvin paljon	en osaa sanoa
Olen huolissani lentoliikenteen aiheuttamista ilmastovaikutuksista?	○	○	○	○	○	○

5. Vastaa seuraavaan väittämään *

	en koskaan	harvoin	joskus	usein	aina	en osaa sanoa
Kuinka usein mietin lentomatkustamiseni ilmastovaikutuksia?	○	○	○	○	○	○

6. Olen viimeisen vuoden aikana vaihtanut toiseen matkustusvälineeseen lentämisestä aiheutuvien ilmastovaikutusten takia. *

○ Kyllä
○ En
○ En ole matkustanut lentokoneella viimeisen vuoden aikana.

7. Kuinka paljon seuraavat väittämät ovat vaikuttaneet ilmastoystävällisemmän matkustustavan valitsemiseen *

	ei lainkaan	vähän	jonkin verran	melko paljon	hyvin paljon	en osaa sanoa
Tieto lentomatkailun ilmastovaikutuksista	○	○	○	○	○	○
Sosiaalinen vaikutus eli toisilta omaksuttuja käyttäytymistapoja	○	○	○	○	○	○
Elämäntapa	○	○	○	○	○	○
Vanhemmilta opittu tapa	○	○	○	○	○	○
Media	○	○	○	○	○	○

Seuraavat kohdat testaavat tietoutta lentoliikenteen ilmastohaitoista.

8. Lentoliikenteestä aiheutuvat hiilidioksidipäästöt jäävät ilmakehään *

○ Vuosiksi
○ Kymmeniksi vuosiksi
○ Sadoiksi vuosiksi
○ Tuhansiksi vuosiksi

9. Lentoliikenne on vastuussa kaikista maailman päästöistä *

○ 3-4%
○ 25-26%
○ 32-33%

10. Lentokoneissa käytettävä polttoaine on verovapaata. Kuinka paljon olisit valmis maksamaan lentoveroa, mikäli rahat ohjattaisiin suoraan projekteihin, jotka vähentävät lentämisestä aiheutuvia ilmastohaittoja? *

○ Alle 5€
○ 6-10€
○ 11-20€
○ 21-50€
○ Yli 50€
○ En olisi valmis maksamaan

11. Vastaa seuraavaan väittämään. *

	täysin eri mieltä	jokseenkin eri mieltä	ei samaa eikä eri mieltä	jokseenkin samaa mieltä	täysin samaa mieltä
Olen kuullut että, lentomatkustamista voi kompensoida eli hyvittää aiheutetut päästöt rahallista korvausta vastaan.	○	○	○	○	○

12. Missä olet nähnyt lentoyhtiöiden mainostavan kompensaatiopalveluita? Voit valita useamman. *

☐ En ole nähnyt
☐ Lentoyhtiöiden nettisivuilla
☐ Matkaesitteissä
☐ Lehdissä
☐ Muu, missä? [＿＿＿＿＿＿＿＿＿]

13. Lentojen kompensointi. *

	en koskaan	harvoin	joskus	usein	aina	en osaa sanoa
Olen kompensoinut lentopäästöjäni.	○	○	○	○	○	○

14. Jos olet kompensoinut päästöjä, minkä lentoyhtiön kautta varasit lennot?

☐ British Airways
☐ Delta Airlines
☐ Finnair
☐ KLM
☐ Lufthansa
☐ Qatar
☐ SAS
☐ TAP
☐ United Airlines
☐ Muu, mikä? [＿＿＿＿＿＿＿＿＿]

15. Kuinka tärkeänä pidät seuraavia asioita valitessasi lentolippuja? *

	ei lainkaan tärkeä	ei kovin tärkeä	melko tärkeä	tärkeä	erittäin tärkeä	en osaa sanoa
Hinta	○	○	○	○	○	○
Suora lento	○	○	○	○	○	○
Aikataulu	○	○	○	○	○	○
Lentoyhtiön vastuullisuus	○	○	○	○	○	○

16. Mikäli pidät muita asioita tärkeänä valitessasi lentolippuja, täydennä tähän.

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17. Vastaa seuraaviin väittämiin koskien kestävää matkailua? *

	täysin eri mieltä	jokseenkin eri mieltä	ei samaa eikä eri mieltä	jokseenkin samaa mieltä	täysin samaa mieltä	en osaa sanoa
Tiedän, kuinka tehdä matkailustani ilmastoystävällisempää.	○	○	○	○	○	○
Tunnistan ilmastoystävällisempiä vaihtoehtoja, mutta muut vaihtoehdot miellyttävät minua enemmän.	○	○	○	○	○	○
Minulla on varaa maksaa kestävästä matkailusta.	○	○	○	○	○	○
Matkasuunnitelmani rajoittavat ilmastoystävällisiä vaihtoehtoja.	○	○	○	○	○	○
Kestävät matkailukohteet vaikuttavat yhtä houkuttelevilta.	○	○	○	○	○	○