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# **Unraveling the Path to Sustainable Skies: Analyzing Consumer Attitudes and Purchase Behavior towards Eco-Friendlier Flights**

Cross-cultural study on Finnish and Italian consumers

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**ABSTRACT:**

In recent years, consumers have been expressing increasing interest towards sustainable products and services. While people are expecting transparency on the backgrounds of their purchases, companies around the world have been at the turning point, reviewing their strategies and corporate social responsibility aiming to respond to the need on sustainability. However, the new direction towards green has not been easy. Previous studies suggest that although most consumers reflect interest and even intention towards greener products, only a small percentage of those consumers end up purchasing according to those intentions. Only limited studies have measured the elements that could explain the intention-behavior gap, especially in the context of aviation. While the industry of aviation is expecting continuous growth, it is increasingly relevant to analyze the travelers' understanding on sustainability as well as elements that could close the intention-behavior gap in the complex context of polluting flights.

The purpose of this study is to analyze consumers' attitudes and behavior related to purchasing more sustainable flights. The target of this thesis is to discover the factors affecting more sustainable purchase intention and to study the connection between purchase intention and purchase behavior. Moreover, this study aims to examine the possible factors affecting the gap between purchase intention and behavior.

The theory presents a comprehensive overview of sustainability in the aviation industry, by discussing the green initiatives available for both airlines and travelers. Furthermore, essential concepts like tri-component attitude model, purchase intention and behavior, intention-behavior gap, and cultural dimensions are presented with respect to previous literature and significant research. The thesis is conducted as cross-cultural study, by comparing the behavior of Finnish and Italian consumers. Results are based on the analysis of quantitative data, that was collected with a survey method. The data consisted of 80 responses from Finland and 85 responses from Italy and it was analyzed in IBM SPSS statistics software version 28.

The findings suggest that both affective and conative mental attitude forming processes have a significant role in affecting the more sustainable purchase intention. The results also confirm that intention is a significant predictor of sustainable purchase behavior considering purchasing of more eco-friendly flights. Nevertheless, according to the results, only a very small group of consumers in both Finland and Italy consciously end up purchasing flights that are more sustainable. With an attempt of closing the intention-behavior gap, the findings reflect that the final purchase behavior is partially affected by unavailability of more sustainable flights and lack of information. Furthermore, the low level of awareness affects consumers with disbelief that their decisions could make an impact and are thus neither willing to pay for generally more expensive tickets. Finally, individual consumers express to avoid responsibility on environmental decisions, since the government and the airlines are considered accountable for guiding the behavior with regulations and prices.

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**KEYWORDS:** Sustainable purchase behavior, intention-behavior gap, aviation industry, cross-cultural study, Hofstede's cultural dimensions

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**ABSTRACT:**

Viime vuosina kuluttajat ovat osoittaneet kasvavaa kiinnostusta kestäviä tuotteita ja palveluita kohtaan. Jatkuvasti kasvava kysyntä tuotannon ja prosessien läpinäkyvyydelle on johdattanut yritykset ympäri maailmaa käännekohtaan kestävämmän strategian saavuttamiseksi. Uusi suunta kohti vihreämpää yhteiskuntaa ja toimintamalleja ei kuitenkaan ole ollut mutkaton. Aikaisemmat tutkimukset osoittavat, että vaikka useimmat kuluttajat ilmaisevat kiinnostusta ja jopa aikomusta vihreämpiä tuotteita kohtaan, vain murto-osa kuluttajista päätyy ostamaan näiden aikomusten mukaisesti. Vain rajallinen määrä tutkimuksia on mitannut elementtejä, jotka voisivat selittää tätä ristiriitaa ostoaikomuksen ja käyttäytymisen välillä, varsinkin kompleksisten suuria päästöjä aiheuttavien palveluiden, kuten lentojen kontekstissa. Koska ilmailun ja lentoteollisuuden odotetaan kasvavan jatkuvasti, on ehdottoman tärkeää analysoida paitsi matkustajien ymmärrystä kestävydestä, myös niitä elementtejä, jotka voisivat sulkea kuilun ostoaikomuksen ja todellisen ostokäyttäytymisen välillä.

Tämän tutkimuksen tarkoituksena on analysoida kuluttajien asenteita ja käyttäytymistä kestävämpien lentojen ostamisen kontekstissa. Tavoitteena on selvittää kestävämpään ostoaikomukseen vaikuttavia tekijöitä ja tutkia ostoaikomuksen ja ostokäyttäytymisen välistä yhteyttä. Lisäksi tarkoituksena on tutkia mahdollisia tekijöitä, jotka vaikuttavat ostoaikomuksen ja käyttäytymisen väliseen kuiluun.

Teoria käsittelee ilmailualan kestävyttä tarkastelemalla sekä lentoyhtiöille että matkustajille tarjolla olevia mahdollisuuksia kestävämpiin valintoihin. Lisäksi tälle tutkimukselle oleelliset käsitteet, kuten kolmikomponenttinen asennemalli, ostoaikomus ja käyttäytyminen, aikomus-käyttäytymiskuilu ja kulttuuriset ulottuvuudet, on johdettu aiemmasta kirjallisuudesta ja tutkimuksista. Pro gradu toteutetaan kulttuurienvälisenä tutkimuksena, jossa vertaillaan suomalaisten ja italialaisten kuluttajien käyttäytymistä. Tulokset perustuvat kvantitatiivisen aineiston analyysiin, joka kerättiin kyselymenetelmällä. Aineisto koostui 80 vastauksesta Suomesta ja 85 vastauksesta Italiasta ja se analysoitiin hyödyntämällä IBM SPSS -tilasto-ohjelmiston versiota 28.

Tulokset viittaavat siihen, että sekä affektiivisillä että konatiivisilla mielen asenteita muodostavilla prosesseilla on merkittävä vaikuttava rooli kestävämpään ostoaikomukseen. Tulokset vahvistavat myös, että aikomus ennustaa merkittävästi kestävästä ostokäyttäytymisestä lentoja ostettaessa. Tulosten mukaan kuitenkin vain hyvin pieni osa kuluttajista sekä Suomessa että Italiassa päätyy tietoisesti ostamaan kestävämpiä lentoja. Kun yritetään kuroa umpeen kuilua ostoaikomuksen ja käyttäytymisen välillä, havainnot heijastavat, että lopulliseen ostokäyttäytymiseen vaikuttaa osittain kestävämpien lentojen saatavuuden ja tiedon puute. Lisäksi alhainen tietoisuus vaikuttaa kuluttajiin, jotka eivät usko siihen, että heidän päätöksillään voisi olla vaikutusta, eivätkä siksi ole halukkaita maksamaan yleensä kalliimmista lentolipuista. Lopuksi yksittäiset kuluttajat ilmaisevat välttävänsä vastuuta ympäristöpäätöksistä, koska hallituksen ja lentoyhtiöiden katsotaan olevan vastuussa käyttäytymisen ohjaamisesta säännöksillä ja hinnoilla.

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**AVAINSANAT:** Sustainable purchase behavior, intention-behavior gap, aviation industry, cross-cultural study, Hofstede's cultural dimensions

## Contents

1	Introduction	8
1.1	Background of the study	8
1.2	Justification for the study and research gap	9
1.3	Purpose and research question	11
1.4	Delimitations of the study	12
1.5	Main concepts and definitions	13
1.6	Structure of the study	14
2	Sustainability in airline industry	17
2.1	Airline industry	17
2.1.1	Benefits of aviation	17
2.1.2	Critical harms of aviation	18
2.2	Sustainability initiatives in aviation	19
2.2.1	Environmental sustainability	20
2.2.2	Social sustainability	25
2.2.3	Economic sustainability	27
2.3	Climate mitigation strategies	29
3	Purchasing of more sustainable flights	31
3.1	Attitude towards more sustainable purchase intention	32
3.1.1	The cognitive component	33
3.1.2	The affective component	34
3.1.3	The conative component	34
3.2	Sustainable purchase intention	34
3.3	Sustainable purchase behavior	35
3.4	The intention-behavior gap	37
3.4.1	Green product availability	40
3.4.2	Perceived consumer effectiveness	40

4	Cultural dimensions	42
4.1	Power distance	43
4.2	Individualism	44
4.3	Masculinity	45
4.4	Uncertainty avoidance	46
4.5	Long-term orientation	47
4.6	Indulgence	48
5	Theoretical framework and hypotheses	49
6	Research methodology	55
6.1	Methodological approach	55
6.1.1	Research approach	56
6.1.2	Survey strategy	57
6.2	Data collection	58
6.2.1	Survey design	59
6.2.2	Question types	60
6.2.3	Survey language	61
6.3	Data sampling	62
6.4	Data analysis	62
6.4.1	Variables and measures	63
6.4.2	Statistical analysis	67
6.5	Validity and reliability	68
7	Results and analysis	72
7.1	Descriptive statistics	72
7.2	Consumers' mental attitude forming processes affecting green purchase intention	75
7.3	Relation between green purchase intention and behavior	76
7.4	Perceived consumer effectiveness	77
7.5	Availability of more sustainable flights	78
7.6	Impact of cultural dimensions to the relationship between green purchase intention and behavior	79
7.6.1	Power distance	80
7.6.2	Individualism	81

7.6.3	Masculinity	81
7.6.4	Uncertainty avoidance	82
7.6.5	Long-term orientation	83
7.7	Summary of findings	84
7.8	Discussion of findings	86
7.8.1	Lack of available information	87
7.8.2	Willingness to pay	88
7.8.3	Perceived consumer effectiveness	89
7.8.4	Green washing	90
7.8.5	Need for decreasing flying	90
7.8.6	Alternative for flying	91
7.8.7	Responsibility	91
8	Discussion and conclusion	93
8.1	Cross-country analysis	93
8.2	Theoretical contributions	97
8.3	Practical and managerial implications	99
8.4	Limitations and suggestions for future research	100
	References	103

## Figures

<b>Figure 1.</b> Structure of the study.	16
<b>Figure 2.</b> Climate mitigation strategies for both companies and consumers to support reduction of emissions.	29
<b>Figure 3.</b> Consumer decision making process.	31
<b>Figure 4.</b> Theory of Reasoned Action adapted to purchase behavior.	32
<b>Figure 5.</b> Tri-component attitude model.	33
<b>Figure 6.</b> Theoretical framework of the study.	49
<b>Figure 7.</b> Thesis research onion.	55
<b>Figure 8.</b> Five stages of deductive research.	56
<b>Figure 9.</b> Flying frequency between Finnish and Italian respondents.	94
<b>Figure 10.</b> Importance of different factors when booking a flight.	94

## Tables

<b>Table 1.</b> Three pillars of sustainability reflecting responsibility in the field of aviation.	28
<b>Table 2.</b> Sustainable initiatives available for consumers when choosing and purchasing flights.	36
<b>Table 3.</b> Country comparison based on dimension scores.	43
<b>Table 4.</b> Measures for dependent variables.	64
<b>Table 5.</b> Measures for independent variables.	66
<b>Table 6.</b> Validity statistics for construct variables.	69
<b>Table 7.</b> Reliability statistics for composite variables.	71
<b>Table 8.</b> Descriptive statistics for control variables.	74
<b>Table 9.</b> Descriptive statistics for Sample's characteristics.	75
<b>Table 10.</b> Regression analysis for consumer's mental attitude forming processes (cognitive, conative, affective) affecting green purchase intention.	76
<b>Table 11.</b> Correlation between green purchase intention and green purchase behavior.	77
<b>Table 12.</b> Regression model with perceived consumer effectiveness as moderator predicting green purchase behavior.	78
<b>Table 13.</b> Regression model with availability of green products as moderator	

predicting green purchase behavior.	79
<b>Table 14.</b> Regression model with power distance as moderator predicting green purchase behavior.	80
<b>Table 15.</b> Regression model with collectivism as moderator predicting green purchase behavior.	81
<b>Table 16.</b> Regression model with masculinity as moderator predicting green purchase behavior.	82
<b>Table 17.</b> Regression model with uncertainty avoidance as moderator predicting green purchase behavior.	83
<b>Table 18.</b> Regression model with long-term orientation as moderator predicting green purchase behavior.	84
<b>Table 19.</b> Summary of findings.	85
<b>Table 20.</b> Cross-country comparison of mean values of measured variables between Finland and Italy.	96

# 1 Introduction

This chapter aims to introduce the topic of the study. First, the background of the study is presented to create interest in the topic. The second part is followed by explaining the need for the study by introducing a broad foundation for the research problem as well as justification for the study by introducing the research gap. Purpose and research question will follow. Finally, delimitations, main concepts, and definitions, as well as structure of the study will be presented.

## 1.1 Background of the study

Along the era of digitalization, consumers are becoming increasingly aware and more interested in learning about the backgrounds of different businesses, and especially the origins of the products and services they are consuming. (Liu et al., 2017, p. 442) This leads to an increasing competition between companies, and the ethical and sustainable way of producing a product or service can end up being the crucial factor when consumers are making their final decision of a purchase. (Dilotsotlhe, 2021)

However, what comes to the industry of commercial flying, the phenomenon is rather complex – with the technology that we have today, the airlines cannot really market themselves as fully green or sustainable: according to Elonen (2019), the carbon dioxide emissions from air traffic cover 2% of the total global emissions. It might not sound like much, but the problem is that the number is not decreasing, but rather vice versa. The numbers say it all: today there is approximately 120 000 flights in the air every day as well as four billion passengers a year. What is terrifying, is that 80% of the people in the world have still not had their first flight. While the developing countries continue to prosper, the estimates predict that the number of passengers will almost double within the following 15 years. Even though services are in general seen to impact quite small amounts to the environment compared to products (Mayer et al., 2014, p. 1), the industry of transportation, and especially air transportation, is an exception as it has a significant impact on the environment due to its unsustainability. (Peattie, 1995, p. 182)

Even though the statistics are cruel, the world is not giving up on hope. For example, the Air Transport Action Group (ATAG) has set passionate climate related targets, one of them aiming to halve the net aviation carbon emissions from the state of 2005 by 2050. (ATAG 2023a)

Actions need to be taken to reach these goals. There are already multiple solutions that could be taken into use: developed technology, utilization of biofuel as well as setting regulations for using the airspace. (ATAG 2023a) The problem as it often is, is money. Biofuel is 3 to 5 times more expensive than the regular fuel, and it is only produced whenever there is enough demand for it from the paying passengers and customers. (Elonen, 2019)

Thus, the issue is to a high extent dependent on the law of supply and demand, and the challenge of how airline companies could market the greener options for the consumers without turning them to purchase from the less sustainable competitors, who offer lower prices. Adopting sustainable values on a company level can be a challenge, but trying to adopt sustainability to the entire aviation industry requires not only willingness from the companies, but also regulations from governments to guide the way.

## **1.2 Justification for the study and research gap**

According to Bonini and Oppenheim (2008, p. 56), consumers do want to take action for green values, but they are waiting for the different businesses to guide their way by offering them sustainable products and services. Mayer, Ryley and Gillingwater (2014, p. 1) also suggest that consumers are increasingly aware of consumption's effects on the environment by showing concern for the damage this causes: consumers are expecting companies to be proactive in important topics that concern the climate change. According to Mayer et al. (2014, p. 1), companies need to focus on those efforts related to green marketing, that are found attractive by the consumers.

In addition, more and more studies have found out that consumers increasingly prefer to purchase from companies that have sustainable values and represent that they care for the environment. Auger et al. (2010, p. 140) present that consumers today have the four following qualities: (1) have the widest product and service offering available than ever before, (2) are wealthier and more educated, (3) have an increasing brand awareness, and (4) have better possibilities to share their own social preferences whenever engaging in purchasing. This proves that consumers do have the qualifications for purchasing sustainable and ethically produced products and services, but while the offering of products is higher than ever before, the sustainable options need to find a way of standing out. This is especially visible in the aviation industry: the atmosfair Airline Index has ranked the 200 largest airlines in the world according to their carbon efficiency, and as appears the leading airlines with respect to these measures are predominantly smaller carriers, and as Trafalgar (2020) puts it “You probably won’t have even heard of them!”

As it has been proved, the markets hold a lot of unused purchase potential for choosing the sustainable and green options available. However, the problem appears that the customers acquire more information and an easier process for reaching sustainable products. According to HubSpot Academy (2020), 74% of people are likely to switch brand if the purchasing process is found too difficult. What the sustainable focused airline companies need to focus on in order of reaching the potential consumers is inbound methodology: focusing on reaching the customers by aiming to attract, engage and delight. However, before a company can develop these three aspects further, it needs to fully understand the buyer’s journey, meaning the active research process a person goes through leading up to the initial purchase. (HubSpot Academy, 2020)

According to Nguyen et al. (2018, p. 119) many of the studies that have explored green consumption behavior, have focused only on investigating behavioral intention. Thus, green consumption behavior and the relationship between intention and behavior is relevant to study further. According to White et al. (2019, pp. 125–127) the current problem is that people only say that they want to consume sustainably produced products, but somehow, they don’t appear to purchase them. There appears to be a huge so called “intention-action gap”, which was found in a survey: 65% of people claim they want to buy brands that are purpose-driven

and represent sustainable values, yet only 26% purchase these products. (White et al., 2019, p. 127) In order to understand and identify the factors affecting this gap, the intention-action gap has been identified to need further research. (Nguyen et al. 2018, p. 119)

Eteokleous et al. (2014, pp. 580–581) address how there is a huge lack of research in studying the link between corporate social responsibility (CSR) and international marketing context. The previous studies have only focused on examining the phenomenon on the domestic level, while the international perspective is still rather unknown regardless its importance along globalization. Eteokleous et al. (2014, p. 581) highlight that while the literature does not provide a clear guiding framework for managers on how to implement CSR in international markets, the research in this area is highly needed in order of being able to form the framework. Overall, the theoretical knowledge on the subject needs to be improved. Sharma et al. (2018, p. 23) also emphasize how limited research has been conducted to explore and establish the interplay between CSR and consumer purchase intention.

According to Cowper-Smith and de Grosbois (2011, p. 60) there is only very little research that has focused on the CSR practice and reporting in the aviation industry. This might be caused since the industry has been adopting to CSR relatively slowly, and it has been taken into consideration in the industry only in recent decades. To be more specific, in 2011 there were only less than 10 airlines that shared their CSR initiatives to the public.

Overall, this study can help the aviation organizations and marketers around the world to understand the importance of the transparency of a company's sustainability initiatives as well as develop further the communication and marketing strategies to reach the right target groups.

### **1.3 Purpose and research question**

This study aims to analyze consumers' purchase behavior related to more sustainable flights and to present the sustainability initiatives utilized by airline companies. The target of the thesis is to discover the factors affecting more sustainable purchase intention and to study

the connection between the purchase intention and purchase behavior. In addition to understanding the phenomenon of sustainable purchase behavior, important aspect in this study is to examine the possible factors affecting the gap between purchase intention and actual behavior. The research is conducted as cross-cultural study, comparing the behavior of Finnish and Italian consumers.

The research questions this thesis aims to answer are:

- 1) *How does attitude towards more sustainable consumption of flights affect the purchase intention among Finnish and Italian consumers?*
- 2) *Does sustainable purchase intention predict the actual purchase behavior of flights?*
- 3) *What are the factors affecting the more sustainable purchase intention-behavior gap?*
- 4) *Do cultural factors have a role in affecting the more sustainable intention-behavior gap?*

#### **1.4 Delimitations of the study**

While the topic of the research can be examined from various perspectives, delimitations need to be set in order of being able to study it in systematic matters. Moreover, as the time and other resources are limited, the delimitations enable to find more relatable results as the scope of the study is not vague. First, as the study is carried out as cross-sectional research, the consumers will be compared within the chosen target markets Finland and Italy. Second, cultural comparison will be carried out by utilizing Geert Hofstede's model on six dimensions of national culture. Cultural dimensions will be measured in the following five dimensions: power distance, individualism, masculinity, uncertainty avoidance and long-term orientation. The sixth dimension, indulgence, is not included in the analysis of this study, due that no connection was found between indulgence and green purchase behavior.

## 1.5 Main concepts and definitions

In this chapter, the key definitions relevant for this research will be presented, to support understanding of the essential concepts while continuing further along the study.

### Green consumption

Even though the term “green consumption” has its varieties, the varieties do have a theme in common, describing green consumption as “*the desirable consumption goal to minimize environmental consequences*”. (Nguyen et al., 2019, p. 119) Probably one of the most used definitions for sustainable consumption is the one defined by United National Environment Programme in 1994: “*Sustainable consumption is the use of services and related products that respond to basic needs and provide a better quality of life. This minimises the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product. Consequently, it satisfies the needs of future generations.*” (Ceglia et al., 2015, p. 415)

### Tri-component attitude model

The tri-component attitude model argues that attitude consists of three different components: cognition (a thought), an affect (a feeling) and conation (action). According to Rosenberg and Hovland (1969), these three components provide people a conscious perspective to different situations, and guidance how they should behave based on the attitude that has been formed. While attitude has been found to affect behavior by various studies, this concept creates a relevant background for this study.

### Intention-behavior gap

As described by Sheeran and Webb (2016, p. 503), behavioral intentions instruct individual’s own behavior towards performing in a certain way. Intentions can be represented as the set goal as well as the individual’s level of commitment towards the object. Even though intention has been found to predict behavior by various studies, the recent research has shifted the focus towards those circumstances, in which behavior does not correspond to intention. This phenomenon occurring between intention and action has been labelled as intention-behavior

gap. The concept has become essential in the field of sustainable consumption and is therefore relevant aspect in this study.

## **1.6 Structure of the study**

The structure of the study will be divided into eight chapters. The chapters will aim to support reaching the purpose of the study as presented in the following.

In the introduction chapter 1, the topic of the research is presented by introducing the background for the study while aiming to create interest for the reader towards the research. This chapter also explains the need for the study by introducing a broad foundation for the research problem as well as justification for the study by introducing the research gap. Purpose and research questions of the study will follow. Finally, delimitations, main concepts and structure of the study is be presented.

Chapter 2 provides a theoretical overview of the aviation industry, by first comparing the benefits and critical harms of flying. Furthermore, three pillars of sustainability, namely environmental-, social-, and economic sustainability initiatives in aviation are presented to foster comprehensive understanding of the current state in the industry, as well as future predictions. Finally, climate mitigation strategies are reviewed to conclude the chapter.

Chapter 3 continues to construct the theoretical framework by conducting a literature review on sustainable consumption. First, the tri-component attitude model is presented, by discussing the cognitive, affective and conative components and their significance as consumer's mental attitude forming processes. Second, the concept of sustainable purchase intention and sustainable purchase behavior is presented, while introducing the sustainable initiatives available for consumers when purchasing flights. Lastly, this chapter explains the concept of intention-behavior gap, as well as two theories that might justify the phenomenon.

Chapter 4 will focus on presenting the Hofstede's six cultural dimensions: power distance, individualism, masculinity, uncertainty avoidance, long term orientation and indulgence. The

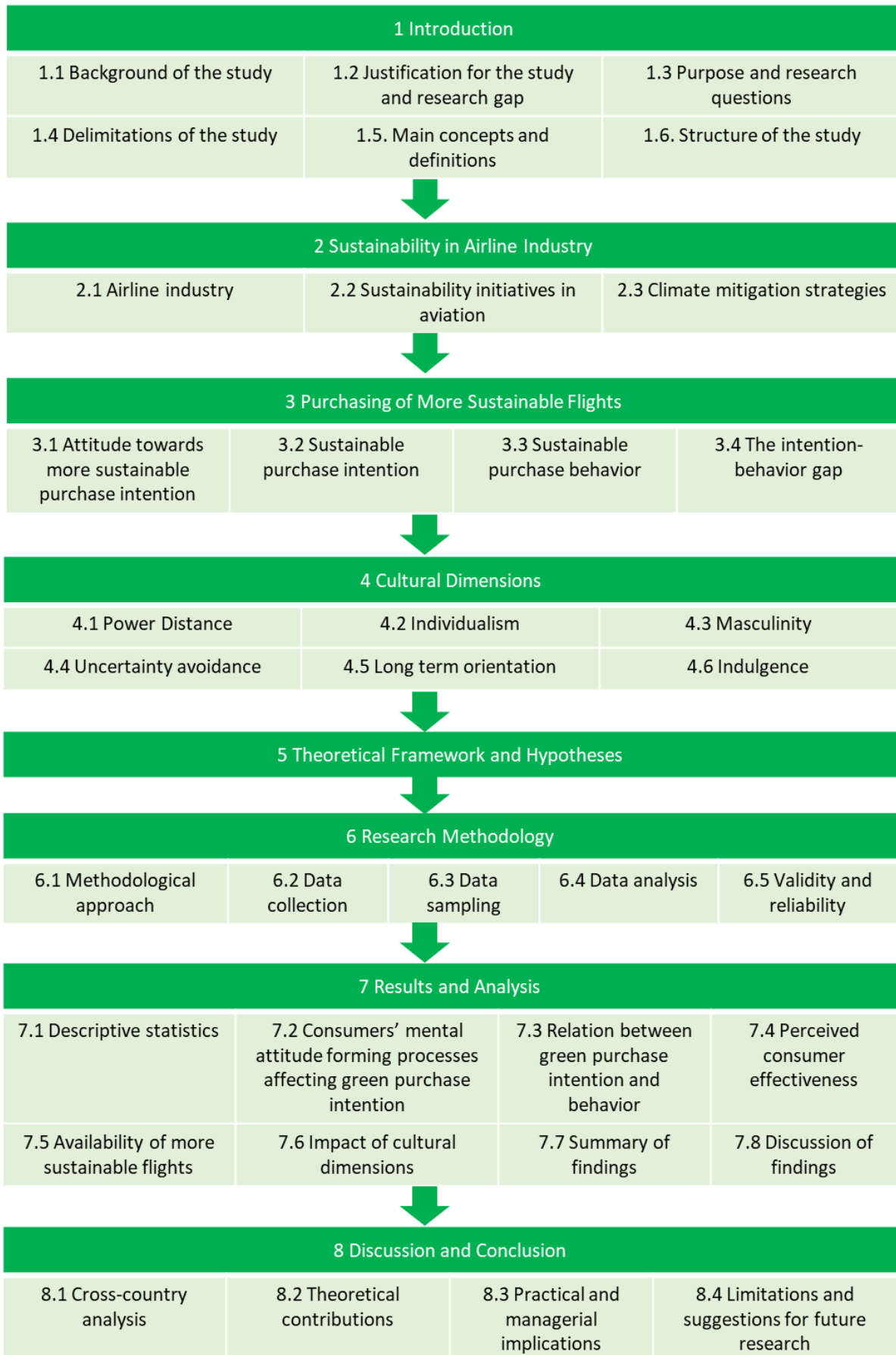
dimensions will be presented with the support of Finnish and Italian examples, which enables the examination of cross-cultural comparison of consumer behavior.

Chapter 5 will conclude the theoretical part of the thesis. This chapter presents the theoretical framework and hypotheses for the study, which together formulate the basis for conducting the measurement and analysis.

Chapter 6 is dedicated to the methodological part. This chapter will present the methodology applied on this research, such as the choices related to the research approach, research methods, data collection, data sampling and analysis. Finally, validity and reliability of the study will be discussed.

In chapter 7, the collected data will be analyzed by utilizing IBM SPSS (Statistical Package for the Social Sciences) Statistics software program. The results for the measured hypotheses and the findings of the study will be presented and discussed.

Finally, chapter 8 will conclude the study by presenting a cross-country analysis of the results and overview of the theoretical contributions this study provides. Practical and managerial implications will be proposed for managers and marketers based on the findings of this study. Finally, the thesis is concluded by reviewing the limitations and by offering suggestions for future research.



**Figure 1.** Structure of the study.

## **2 Sustainability in airline industry**

This chapter will introduce the current state of the airline industry, by first discussing the benefits and harms of aviation from social, economic, and environmental aspects. Second, a comprehensive overview of sustainability initiatives utilized in aviation will be presented as well as future prospects. Finally, this chapter will be concluded by providing a summary of climate mitigation strategies, that recapitulate different actions available for both airlines and consumers to reduce emissions in aviation.

### **2.1 Airline industry**

The airline industry is recognized as one of the key factors in the tourism industry. (Cowper-Smith et al., 2011, p. 60) According to International Civil Aviation Organization's (ICAO) annual report (2019), the preliminary statistics present that during 2019 the total number of passengers carried on scheduled services increased up to 4.5 billion, which represents a 3.6 per cent increase to the previous year. Already between the years 1970 and 2000, the annual airline passenger traffic growth was around 5–6 per cent per annum. (Gössling & Peeters, 2007). As Hanlon (1999) puts it, only few other industries have been able to enjoy similar growth for as long period of time.

#### **2.1.1 Benefits of aviation**

As the numbers indicate, aviation is an important industry bringing immense benefits to economies and communities around the world: the industry provides economic growth, connectivity and social possibilities between countries and continents, as well as allowing access between different markets and international trade. (Mrazova, 2014, p. 109) Both the developed and developing countries benefit and even require the growth of the aviation industry, while at least for now, aviation is the only sector providing rapid transportation globally. (Gill, 2020)

Aviation plays an important role in contributing to the global economy, by enabling access for countries around the world to reach international markets and supporting world trade. (Gill, 2020) According to ATAG (2023a), aviation generates around 961.3 billion USD of gross domestic product per year. Air transportation is also a crucial player in providing jobs; the industry supports around 87.7 million jobs and offers 11.3 million direct jobs.

Aviation is essential for many industries, moreover, some industries are even dependent on it. Tourism is one example of an industry that relies on aviation and would not function without it. According to Gill (2020), when examining global tourism, 58% of all international tourists travel by flying.

Along tourism, air transport generates a lot of social benefits, allowing people to have adventures in new countries, enhance business relationships and visit and travel with friends and family. Aviation brings people closer together and enforces connectivity. As part of the social benefits, air transportation as an industry contributes to improving living standards especially in the developing countries, mitigates poverty and enables rapid support in times of crisis and disasters. (ATAG, 2023b)

### **2.1.2 Critical harms of aviation**

Even though the airline industry provides various possibilities for social and economic activities through both leisure and business travel, the possibilities are not provided without a cost. The airline industry has multiple impacts on the natural, social as well as economic environments. These include for example the damages caused to climate change, air pollution, biodiversity loss, noise pollution and waste generation. (Cowper-Smith et al., 2011, pp. 60–61)

The root cause of the environmental harm caused by aviation lays in the tremendous amount of carbon emissions. Today, the commercial aviation covers 2-3% of all emissions, yet while the amount keeps increasing, aviation is expected to cover up to 22-30% of emission by mid-

century. (Xu et al., 2022) While CSR studies in the field of tourism have increased especially in the areas of accommodations providers and tour operators, it is surprising that far less attention has been paid to related studies in aviation. (Coles et al., 2014, pp. 71–72)

## **2.2 Sustainability initiatives in aviation**

Sustainability is a rather new concept, even though it has been studied and developed among different fields more and more intensively in the recent decades, while signs on the concerns about the imbalance between natural resources and evolving and increasing human needs has been assigned for a longer time. However, only in 1987 the concept of sustainable development was proposed as an ideal standard for the global economy and organizations in the United Nations' World Commission on Environment and Development publication of *Our Common Future*. (Shrivastava & Berger, 2010, p. 246)

The concept of sustainable development is one of the key principals in the field on sustainability. The concept has its origins in the publication of *Our Common Future* by the United Nations' World Commission on Environment and Development, also known widely as Brundtland report (WCED, 1987). The publication suggests sustainable development to become an ideal among corporations and global economy. Sustainable development is presented as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (WCED, 1987)

According to Cowper-Smith and de Grosbois (2011, p. 59) people have significantly risen their awareness of the environmental impacts of human activity within the recent decades. Thus, people are also expecting companies to recognize their both, social and environmental responsibilities as well as adapt their business strategies towards more sustainable operations. Tourism is one of the key industries to which specific attention is being paid to. While tourism is predicted to grow significantly also in the future, the pressure for the relevant companies' sustainability initiatives is increasing rapidly.

Three pillars of sustainability refer to sustainability being defined by dividing it to three equal parts: environmental, social, and economic. The three below chapters discuss sustainability in the industry of aviation in all three aspects.

### **2.2.1 Environmental sustainability**

According to ATAG (2023c), aviation has been among the first industries to set ambitious goals for decreasing the harms caused for the environment and furthermore to establish a strategy to support reaching those targets. ATAG (2023c) identifies the following actions as part of the environmental efficiency in the field of aviation: climate action, reducing of noise, improving air quality, greener manufacturing and circular economy.

#### **2.2.1.1 Climate action**

Climate action refers to a framework developed in 2018, which target is to reduce the environmental footprint in aviation. Even though there is still a lot to improve, significant progress has already been achieved in fuel and CO<sub>2</sub> efficiency, as compared to 1990 aviation industry has accomplished to halve the amount of fuel used for a single flight. However, the development around sustainability continues to reach the new target set in 2021 to achieve net-zero carbon emissions by 2025. The target was established to support limiting global warming to no higher than 1.5 degrees as part of the Paris Agreement, a legally binding international contract on climate change under the United Nations Framework Convention on Climate Change (UNFCCC). The net-zero carbon emissions target is supported by Governments around the world, having set contributing target in 2022 Assembly of the International Civil Aviation Organization. (ATAG, 2023c)

Various actions are needed to support the ambitious goal of flying with net-zero carbon emissions. One extremely relevant area where improvement is focused is technological innovation. The potential has been found in new innovations such as utilizing electric, hydrogen or even completely new kind of propulsions, to support decreasing the amount of carbon emissions generated. While fuel efficiency is an important factor both environmentally

and financially, the International Civil Aviation Organization (ICAO) applied a standard for CO<sub>2</sub> emissions to be applied for all new aircrafts from 2020 as well as existing newly built models from 2023. Similar regulations and continuous investigation are needed to improve the aircrafts towards more and more environmentally friendly models. (ATAG, 2023c)

Sustainable aviation fuel is another initiative that is increasingly utilized to decrease the impacts of flying towards environment. While technological innovations require radical improvements to aircrafts, sustainable fuels could potentially reduce the CO<sub>2</sub> emissions by around 80% without need of transforming aircrafts' engines or fuel supply systems. (ATAG, 2023c) According to Stauch and Müller (2022, p. 25) both sustainable aviation fuel and fossil-based kerosene contain the same hydrocarbons, but the difference is made in the environmentally friendly sources that sustainable fuel utilizes, such as water, air, and biological organisms. Even though the potential is significant for usage of sustainable fuels, there is room for improvement, while it has been measured that by 2025 only 2% of fuel demand can be covered by sustainable fuels. (ATAG, 2023c) While sustainable aviation fuels, which can be classified into biofuels and synthetic fuels, can be exploited the same way as regular fossil fuels and even by blending them, the challenge is that compared to regular fuel, sustainable fuel is much more expensive. (Stauch et al., 2022, pp. 25–26)

Different operational improvements can also make significant impact into reducing of emissions through weight reduction and more efficient operations on the ground, in departure, on cruise, and at arrival. On the ground airports increasingly benefit of electrical ground power to save fuel on the ground, due that aircrafts must be powered also on the ground to provide electricity and air conditioning. In departure operational improvements have been made to enable aircrafts to taxi to the runway with single engine to save the power by not having to use the full engine. While in the air, difference is made by reducing the weight on board, due that the less there is weight the less fuel is burned. Airlines are focusing on making an impact this way by for example utilizing lightweight cabin equipment and loading the plane with the right amount of water and other supplies for the passengers. Finally at arrival, diverse techniques, such as navigation technologies are being enhanced to use most suitable flightpaths for landing, which not only saves fuel but also reduces the impact of noise to affected communities. (ATAG, 2023c)

Infrastructure efficiencies can also improve aviation's effects towards environment. Airports and ground facilities are being developed in different ways, such as building terminals that are 'green-certified' and exploiting solar and other alternative energy sources for airports terminals. Air traffic management is also significant factor in developing sustainability in aviation infrastructure. Air traffic management system is provided by air navigation service providers (ANSPs), managing the plane's routes and height of flying to support controlling of the amount of fuel needed and generated emissions. (ATAG, 2023c)

In addition to above discussed procedures, market-based measures are exploited in similar way with target of limiting the aviation's impacts on climate change. One of the most know instruments utilized as part of market-based measures is carbon offsetting. (ATAG, 2023c) According to Carter et al. (2010, p. 49) carbon offset refers to reducing of emissions generated from a certain party by another party purchasing the offset to balance those emissions. Carter et al. (2010, p. 50) explain how businesses are not able to reduce greenhouse gas emissions independently, due to its costliness and complexity. However, utilizing carbon offsets enables businesses to compensate more emissions by implementing more cost-efficient offset program elsewhere. ATAG (2023c) presents carbon offsetting to be highly relevant for international flights. This is due that the Paris Agreement only covers domestic aviation, which has been justified by the complexity of allocating the emissions of international flights to specific countries. As a solution to reduce emissions on international flights, governments implemented the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) in the 2016 International Civil Aviation Organization (ICAO) Assembly. In the context of aviation, offsetting indicates opportunity for passengers to compensate their emissions by purchasing 'certified carbon credits', which are used for funding an emission mitigation project, such as developing a more sustainable scheme for electricity production in a developing country.

As part of market-based measures it is worth mentioning green taxes, which are not applied on an international level, but on a smaller scale. The purpose of green taxes is to decrease demand towards air travelling, by increasing the prices by automatically charging each passenger. However, the usage of green taxes has been found problematic for various

reasons. First, the increased prices are in favor of wealthier passengers, excluding the opportunity of long distance travelling for others while there is no alternative for air transportation. Additionally, green taxes have been found to reduce the financial assets in aviation, thus affecting on delays research and development of fleet renewal. (ATAG, 2023c)

#### **2.2.1.2 Reducing of noise**

Reducing of noise is one aspect of improving aviation's environmental sustainability, in order of decreasing the disturbance caused for the ones living in the surroundings of airports. As stated by Payán-Sánchez et al. (2018, p. 539), the noise cause is a controversial problem that needs more attention, due to the direct harm it's causing for the affected communities. In a long run the communities might face direct harms to their mental, physical, and social welfare, such as stress, sleep deprivation or difficulties in learning. According to ATAG (2023c), the industry is constantly working to reduce the noise, and significant progress has been made as the aircrafts' noise levels are 50% quieter than 10 years ago. Different regulations have been taken into use to ensure noise reduction around the world. For instance, in 2013 a new guideline in noise reduction was presented by the International Civil Aviation Organization (ICAO), stating that the new aircraft models are required to be modeled quieter by at least seven decibels compared to the previously presented standard. Furthermore, according to Boussauw and Vanoutrive (2019, p. 6) for example the European Environmental Noise Directive requires airports to develop action plans for noise management and noise maps every 5 years.

#### **2.2.1.3 Improving air quality**

In addition to noise impacts, local air quality is another area of development that airlines and airports are continuously aiming to improve. Even though the local air quality is primarily polluted by emissions generated from cars and other ground-based vehicles, it is important for airlines to do their part. Within the last 50 years, improvement has been made by decreasing carbon monoxide emits by 50% and smoke and other unburned hydrocarbons by

even 90%. (ATAG, 2023c) Boussauw et al. (2019, p. 8) highlight that research is increasingly focusing more on measuring the relationship between airports and local air quality, with special attention on the harms of carbon monoxide and ultrafine particles.

#### **2.2.1.4 Greener manufacturing**

ATAG (2023c) explains greener manufacturing to refer to sustainable improvements within production and waste management by engine and aircraft manufacturers. One example of development towards greener manufacturing has been made by a company Kaiser, which supplies aluminum for Boeing's aircrafts. In the recent years, Kaiser has started to utilize a new system for recycling aluminum, which enables the industry to re-use approximately 10 million kilograms of scrap and offcut metal a year.

#### **2.2.1.5 Circular economy**

Airlines and airports are generating massive amounts of waste caused from various sources like activities related to engineering, maintenance, and offices, cabin services, catering, and facilities at the terminal. While the waste is caused from various factors, it also appears in different forms such as electronic waste, hazardous waste, fuel spills or organic waste. It is crucial for airlines and airports to recycle and compost the recyclable waste and separate it from the non-recyclable waste, to avert the waste from ending up in incinerators or landfills, which will cause threat to the environment, human and animal health. (Payán-Sánchez et al., 2018, pp. 539–540) According to ATAG (2023c) airlines and airports are working on improving the environmental footprint by recycling waste, reducing, and reusing as much as possible with the currently available solutions, but also continuously aiming to develop the circular economy for the better. On average, aircrafts can serve approximately 20-25 years, and after end of service, up to 95% of the aircrafts' weight can be either recycled or re-used for the future.

## **2.2.2 Social sustainability**

While environmental sustainability focuses on developing aviation toward more environment-friendly industry, social sustainability aims to improve the people perspective. Unlike any other form of transportation, aviation connects people from all over the world, allowing people to experience different cultures, visit family and friends, and even access better healthcare, education, and work opportunities. (ATAG, 2023d) Social sustainability is crucial for the industry as it keeps growing, and thus this chapter discusses different practices on how aviation is developing socially.

### **2.2.2.1 Developing skills**

Developing skills of employees is one important aspect of social sustainability in aviation. Aviation offers a wide range of jobs from engineering to customer service, and a lot of the jobs require extensive training and qualified employees. (ATAG, 2023d)

### **2.2.2.2 Tourism**

Previously presented as one of the main benefits of aviation, enabling of tourism is also one important aspect of social sustainability in aviation. Within tourism, air transportation supports more than 44.8 million jobs, not to mention its contribution to world GDP by approximate amount of 1 trillion dollars a year. While it has been estimated that air travel covers around 58% of tourism in terms of international travel, it is evident that tourism and aviation depend on one another for maintaining sustainable growth. (ATAG, 2023d) In order to support sustainable growth within tourism, the World Travel & Tourism Council has published key principles to guide the development in the field: impacting environments in positive manners, providing benefits to all sectors in a society, stimulating demand for sustainable products, developing skilled employees, and utilizing innovative solutions to challenges with the support of newest technology. (ATAG, 2023d)

### **2.2.2.3 Access to remote areas**

Aviation provides a lifeline to many communities around the world that lack proper road infrastructure. These communities are depended on air travel as it might be the only way for them to access essential services such as health care, education or doing business. To give a concrete example of aviation's importance to health care for instance, around 400 000 patients are being flown by air between hospitals and their homes on a yearly basis. (ATAG, 2023d)

### **2.2.2.4 Rapid response to disasters**

Aviation not only provides access to remote areas alongside essential services, but also enables rapid and vital support during crisis like famine, war, or disasters, especially when other means of transportation are unprocurable. In times of disasters, aviation is indispensable due to its rapidness in delivering supplies like food and medical supplies, and servicing in search and rescue missions. Even though military and specialist air service providers have crucial role in sustaining the work, airports and commercial aviation companies are essential in supporting with for example transfers of refugees and cargo deliveries. (ATAG, 2023d)

### **2.2.2.5 Safety culture**

Regardless aviation holds the position of safest form of transportation, the industry is continuously improving its safety culture to prevent all possible accidents in the future. In order of reaching the target, a system named 'Crew Resource Management' has been developed to encourage teamwork and open communication between all employees. The purpose of the system is that everyone would feel comfortable to raise issues, which would enable better identification of the occurring risks, and thus preventing of accidents. In addition of preventing future risks, the industry is taking great measures on learning from the past accidents by investigating all incidents with valuable methods. (ATAG, 2023d)

### **2.2.3 Economic sustainability**

The third and final dimension of three pillars of sustainability focuses on economic growth. Aviation has a crucial role in global business, as out of all trade more than a third is transmitted by air when measured by value. ATAG (2023e) represents aviation industry to hold a key position in driving economic development in global means for four reasons: it supports employment, adds value to the economy, enables trade and its predictions for the future.

#### **2.2.3.1 Supporting employment**

One of the main reasons why aviation industry is essential for the global economy is its fundamental role in providing employment around the world. Overall, the industry supports 87.7 million jobs either directly or indirectly. 11.3 million people work in the field directly, either for the airport, the airlines, the civil aerospace or as air navigation service providers. It has been measured that on average, compared to other jobs in the economy, the direct jobs in aviation are 4.3 times more productive. In addition to the direct jobs, 18.1 million indirect jobs are supported by aviation in terms of the services and commodities that are purchased by the industry of aviation. By purchasing services and goods for themselves, the employees in aviation are measured to support 13.5 million induced jobs in different industries. Finally, aviation has a key role in supporting around 44.8 million jobs in tourism, which has been predicted to become the largest industry in the world. (ATAG, 2023e)

#### **2.2.3.2 Valuable role in the economy**

As an industry aviation has a significant role in global economy. The industry supports \$3.5 trillion, equaling to 4.1% of the world's gross domestic product (GDP), out of which \$961.3 billion are generated directly from the services aviation provides. To provide perspective, if measured by GDP, the aviation industry is larger than manufacturing of both automobile and pharmaceutical industries. (ATAG, 2023e)

### 2.2.3.3 Enabling trade

Aviation has a central role in international trade, due to its ability to transport good in fast and reliable matters all over the world. When measured by value, air transportation covers more than a third of international trade. However, when measured by volume, aviation’s share of international trade is less than 1%. The explanation behind this is that not all kinds of goods are transported by air, while air freight is mainly utilized for products that are compact, light, high in value or perishable. (ATAG, 2023e)

### 2.2.3.4 Future predictions

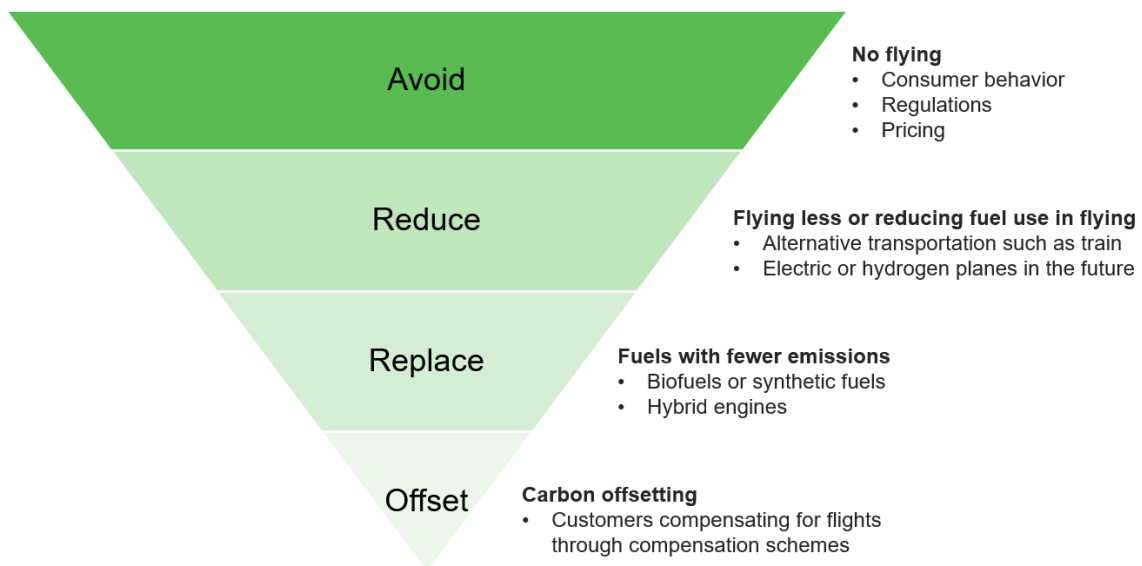
According to ATAG (2023e), it has been predicted that by 2038 air transportation would have increased as an industry by an average of 3% on yearly basis. In financial terms this would provide great benefits for the economic development of aviation. Based on this forecast, by 2038 aviation would contribute to the world economy by providing directly \$1.7 trillion of GDP and 13.7 million direct jobs. Nevertheless, it is important to consider that the predictions are never certain, and they may vary caused by different economic or political events, or pandemics like covid-19 for example.

**Table 1.** Three pillars of sustainability reflecting responsibility in the field of aviation (ATAG, 2023c, 2023d & 2023e).

Environmental	Social	Economic
<ul style="list-style-type: none"> <li>• Technological and operational innovations</li> <li>• Sustainable aviation fuel</li> <li>• Efficiencies in infrastructure</li> <li>• Green taxes</li> <li>• Reducing of noise</li> <li>• Greener manufacturing</li> <li>• Circular economy</li> </ul>	<ul style="list-style-type: none"> <li>• Tourism</li> <li>• Developing skills</li> <li>• Access to remote areas</li> <li>• Rapid response to disasters</li> <li>• Safety</li> </ul>	<ul style="list-style-type: none"> <li>• Supporting employment</li> <li>• Enabling of trade</li> <li>• Predicting future development</li> </ul>

## 2.3 Climate mitigation strategies

This chapter concludes the theoretical review on sustainability in the aviation industry by summarizing the actions available for both airlines and consumers to reduce emissions in aviation. Walls' (2022, pp. 100–101) theory on climate mitigation strategies is a top-down hierarchical model representing four different strategies ordered by their efficiency and ability to drive meaningful change.



**Figure 2.** Climate mitigation strategies for both companies and consumers to support reduction of emissions (adapted from Walls, 2022, p. 101).

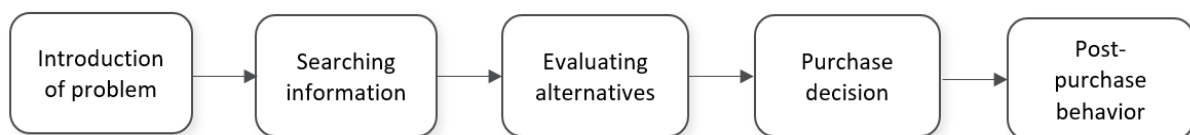
As shown in figure 2, the most efficient action is avoiding of emissions, which could be driven by different regulations and adapting of pricing. However, as various studies present, travelers are reluctant to reduce flying, let alone relinquish flying completely. (Cocolas et al., 2021, p. 945) Thus, when avoiding of flying is not an option, the consumers should focus on the second action to reduce emissions by for example selecting an alternative mode of transportation like train. In the future the opportunities ought to be even wider when the technology improves so that airlines could utilize electric or hydrogen planes to reduce the emissions. The third efficient way of reducing the emissions is for airlines to replace the fossil fuels to sustainable aviation fuels that generate less emissions or by developing the engines further towards hybrid electric models. The final action in the model refers to offsetting any of the remaining emissions that couldn't be reduced in the previous phases. By offsetting the emissions both

airlines and passengers can influence by compensating for the flight's emissions through different compensation schemes. Walls (2022, pp. 100–101) suggests all four actions to be focused on for being able to make the change and transform the aviation industry.

### 3 Purchasing of more sustainable flights

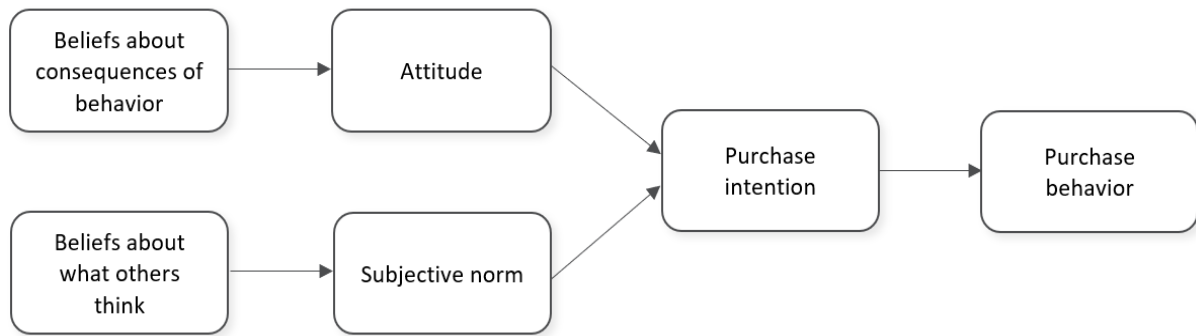
Consumers are increasingly searching for greener options. Early findings have already been suggesting that awareness on environmental issues encourages consumers to decrease their consumption of energy. (Hartmann & Apaolaza-Ibáñez, 2012, p. 1254) According to a study presented by Winston (2009, p. 34), 86 percent of consumers have concerns on climate change, while 50 percent of consumers consider environmental and social factors in their consuming or seek for ecological products.

According to Kusnandar and Rinandiyana (2017, p. 4), the consumer's decision-making process when consuming a product or service, is influenced by the following three elements: consumers as individuals, environmental factors, as well as the strategies that are being conducted by the company. Overall, the consumer's decision-making process occurs in five different stages, also presented in figure 3.: identifying the problem, processing of the information, evaluating the alternative products and brands, initial purchase and final assessment after the purchase. Out of these five stages, this study concerns the first four stages, due that post-purchase behavior is not discussed in this research.



**Figure 3.** Consumer decision making process (Kusnandar & Rinandiyana, 2017, p. 4).

In addition to consumer's decision-making process, it is significant to present the theory of reasoned action (TRA) by Fishbein and Ajzen (1975), which has been extensively utilized in the previous studies on consumer behavior. According to TRA, attitudes and subjective norms predict the intention of an individual to behave in a certain way. Furthermore, the intention predicts the actual behavior. The model explains that the beliefs about the consequences of a certain behavior impact on the individuals' attitude, while beliefs about what others think, in other words social pressure, impact on the subjective norm. (Kumra, 2006, pp. 176–177)

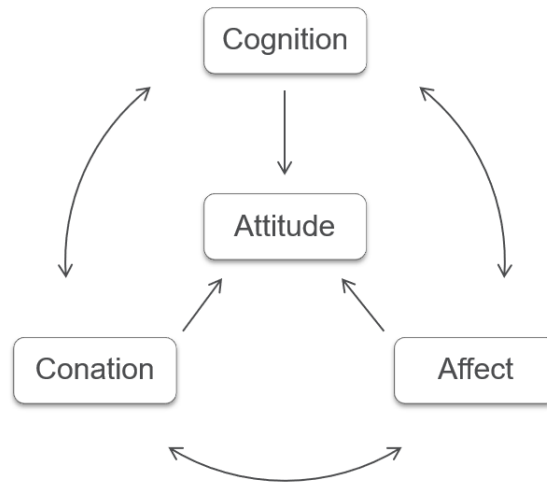


**Figure 4.** Theory of Reasoned Action adapted to purchase behavior (Adapted from Kumra, 2006, pp. 176–177).

### 3.1 Attitude towards more sustainable purchase intention

The studies show that consumers' attitude towards a product or service is directly linked to purchase intention and hence also to purchase decision (Howard & Sheth, 1969, p. 467). Attitude is a very crucial part to study as part of the purchase process, as attitude towards the object occurs before the initial behavior, and thus attitude is an indicator of behavior. (Kumra, 2006, p. 172)

Tri-component model is one example of an attitude model, which aims to provide insight in describing attitudes and help marketers to predict their target groups attitudes and initially purchase behavior. The model consists of three elements: cognitive (thinking, knowing, believing), affective (feeling) and conative (doing, and intention of doing). The tri-component model presents all of these three components to be crucial parts of attitude: each component has its own role in affecting the formation of attitude as well as the possibility of influencing the overall attitude. (Kumra, 2006, p. 173) Figure 5 presents the relationships between the components.



**Figure 5.** Tri-component attitude model (adapted from Schiffman & Kanuk, 2011).

### 3.1.1 The cognitive component

As presented above, the cognitive component corresponds to beliefs and thinking statements, meaning mental statements about the object. Cognitive beliefs develop over time and are based on past experience, learning, knowledge and memory. (Kumra, 2006, p. 174) In regard to purchasing of more sustainable flights, consumers' cognitive beliefs refer to past experiences of flying, learnt purchase behavior, knowledge about the environment and the impacts of flying, as well as information on the more sustainable options available for consumers. According to Kumra (2006, p. 113), based on the previous experience, familiarity and expectations, consumers often "see what they want to see", which reflects how big of an impact the cognitive component can have on the attitude of a consumer.

Environmental knowledge has been presented to positively correlate with green purchase behavior (Pagiaslis & Krontalis, 2014, p. 337), and thus it can be predicted that knowledge about the environment and more sustainable options for purchasing flights would forecast greener purchase behavior. On the contrary, Pagiaslis et al. (2014, p. 337) raise that lack of knowledge can vice versa prevent consumers from greener consumption.

### **3.1.2 The affective component**

The component of affect on the other hand consists of beliefs, but especially the way in which people feel about beliefs of the object. With affect, individuals evaluate their emotions towards the object. In other words, affect can be described as the feeling individual gets in response to information stimuli such as more sustainable flights. (Kumra, 2006, p. 174)

According to Rice et al. (2020, pp. 2–3), many previous studies have indicated affect and emotions to influence not only decision making, but potentially also usage of sustainable products. One remarkable study found that affect was a significant factor predicting consumers' support towards sustainability in aviation in 75% of the measured models. Some studies have also found people's concern for the environment and caring for others to be the primary determinants for tourists' environmentally friendly behavior. (Rafiq et al., 2022, p. 187)

### **3.1.3 The conative component**

Finally, the conative component representing behavior is related to action being involved. In the context of purchasing more sustainable flights, the conative component refers to for example purchase or no purchase, repurchase or recommendation of a product or service to someone else. (Kumra, 2006, p. 174) Nevertheless, Solomon et al. (2013, p. 308) claim past purchase behavior to be the most successful predictor of future behavior in conative context since actual behavior is affected by numerous different factors that might not be predictable in advance.

## **3.2 Sustainable purchase intention**

Purchase intention has been defined as stimulator and driver of consumers' purchases of different products and services. Intention can be visioned as commitment that reflects the consumers' willingness to purchase a certain product. Intention can also be described as

individuals' idea of guidance implying how to behave, what should be done and what they will do. (Jacob et al., 2020, p. 89)

According to Peña-García et al. (2020, p. 2) purchase intention has been considered as the fundamental predictor of actual purchase behavior. Furthermore, Jacob et al. (2020, p. 89) present that purchase intention could better predict consumers willingness to purchase sustainable products rather than conventional products. Sustainable purchase intention guides consumers to behave according to sustainable values, implying that they should select the sustainable product from the available options. (Jacob et al. 2020, p. 89)

### **3.3 Sustainable purchase behavior**

Wagner (1997, p. 1) has defined green consumer behavior as actions which reflect concerns towards the effects of manufacturing and consumption on the natural environment. It has been also argued that ideal green consumer should evaluate the environmental friendliness of a product before the purchase according to life-cycle analysis (LCA). According to this process, the consumer would have to research the product with regard to materials and energy consumed for all phases of the product life-cycle: 1. The production and packaging, 2. transportation of sourcing and distribution of product, 3. The actual process of consumption and 4. The process of disposal. However, even though companies' corporate social responsibility is increasingly transparent to consumers, this kind of comprehensive LCA is not executable, mainly due that there are too many factors that would need to be considered while some environmental impacts may be too difficult to measure. (Wagner, 1997, p. 24)

Sustainable consumption on the other hand refers to use of products and services that provide better quality of life by responding to basic needs, nevertheless, by minimizing the usage of natural resources, toxic materials, waste, generated emissions and pollutants. The purpose of green consumption is to ensure sustainable future for the future generations. (Ceglia et al., 2015, p. 415) According to this, sustainable consumption of flights would refer to purchasing flights that would have as minimal as possible impact on the environment.

However, as presented by Kte'pi (2011, p. 10) regardless of whether there are greener services marketed and offered by an airline, consumers can make an impact by different actions. When flying, one of the most efficient actions is to select a direct flight, instead of multiple connecting flights, due that indirect flights cause longer travel distances and thus more fuel emissions. Additionally, takeoff and landing are the most fuel-consuming phases of a flight, which also explains why it is more sustainable to minimize the number of flights. Another way of lowering carbon footprint is to lower own load carried in the plane, in other words packing less to lighter the weight of the baggage. According to Mrazova (2014, p. 116), fuel efficiency of the airplane is a significant factor predicting the impacts caused for the environment, due to that carbon dioxide emissions have direct relation to jet fuel consumption. Fuel efficiency can be improved especially by technological improvements. Thus, passengers can impact by selecting to fly with airlines that utilize new technology aircrafts with efficient engines. Finally, consumers can select to offset the emissions generated from the flight by purchasing compensation. Different sustainable initiatives available for consumers are presented more thoroughly in table 2.

**Table 2.** Sustainable initiatives available for consumers when choosing and purchasing flights (adapted from Brekling, 2019).

Action	Explanation
Nonstop direct flights	When flying by using connecting flights, the distance increases and so do the amount of carbon emissions. Also, takeoff and landing cause a large part of flights' emissions, which is why it is recommended to choose as few connecting flights as possible.
Choosing a fuel-efficient airline	Choosing and investigating fuel-efficient airlines is not always easy. Nevertheless, one simple way is to choose an airline which uses a modern fleet and technology, which usually indicates higher level of fuel-efficiency. Following are some examples of newest fleet: Airbus A330, The Airbus A350, Boeing 787 Dreamliner, Embraer E2, and Airbus A220 aircraft.
Choose to downsize your plane	The size of the plane has strong effect when calculating carbon emissions. For instance, four-engine planes (like the 747 and A380) are on average 24% less efficient than smaller but competent twin-engine planes (like the Boeing 787 Dreamliner and Airbus A350).
Choose economy over business or first class	One way of reducing carbon emissions per passenger is to use the plane's space to its full potential by having the plane as full of passengers as possible. Choosing economy class allows to use the fuel more efficiently, as their carbon footprint per passenger is three to nine times smaller than the business and first-class passengers due to the seats taking more space and being much heavier.

Action	Explanation
	Some airlines use up to 25% of the cabin for business and first-class seating purposes, whereas other airlines use their full potential for economy seating.
Choose airlines and airports that use biofuels	Different airlines and airports are increasingly utilizing cleaner-burning fuels such as biofuel that origin from raw materials (e.g. municipal waste, industrial waste gasses, forestry slash, algae, jatropha and cooking oil). Some operators offer customers to separately purchase biofuel for flights.
Lighten your own load	Packing less has direct effects on the emission – the smaller and lighter the baggage, the smaller the carbon footprint.
Choose the train	Choosing a train over flying is always a better option when considering the environment, as train emits inevitably far less CO <sub>2</sub> than traveling by plane.
Offsetting emissions	By purchasing carbon offsetting consumers can “compensate” their personal amount of CO <sub>2</sub> that has been calculated for the flight. Different services and some airlines sell compensation as product, which will use the earnings for example planting several trees for several decades to offset the caused emissions.

### 3.4 The intention-behavior gap

As earlier presented, companies, including airlines, are increasingly developing their sustainable offerings to be able to attract consumers, who appear more and more interested in embracing green brands. However, the process of changing the offering to sustainable initiatives seems not to be as straightforward as it sounds, as only small amount of people who show interest towards sustainable products end up purchasing those. (White et al., 2019, pp. 125–127) Even though green consumers mainly have the same intentions, it doesn't mean they act according to same purchase behavior. According to Iannuzzi, Al. (2011, p. 131), only some customer groups are willing to pay a premium for choosing the greener products, while others choose the green alternative as long as long as it doesn't cost more than a substitute product.

Studies in the field of psychology and information systems have shown how difficult it is to understand planned human behavior. The connection between intention and action requires special attention, while intention has been proven to appear as important, yet inadequate prerequisite for successful behavior. This phenomenon occurring between intention and action has been labelled as intention-action gap. (Moghavvemi et al., 2015, p. 1171)

Studies have identified how sustainable practices are for example often adopted in citizens homes reflecting their intentions towards green, yet they are less frequently reflected in people's travel choices and level of behavior. (Coles et al., 2014, p. 69) Low-fare airlines (LFAs) such as Ryanair, Flybe, easyJet and Air Berlin have succeeded due to their cheaper tickets while disregarding CSR.

By understanding the factors behind the gap between intention and actual behavior, marketers are able to adapt marketing strategies for promoting greener products. While previous studies have widely focused on viewing intention in correlation to actual behavior, it is important to understand that there will always remain a gap between the two factors, since behavior can be predicted from intention only if the contextual conditions are propitious. (Nguyen et al., pp. 119–120) Ajzen and Fishbein (2005, p. 178) explain the term "literal consistency" created by consumer behavior theorists as phenomenon of failing to act accordingly to the intention.

#### **3.4.1 Green product availability**

Nguyen et al. (2019, p. 121) argue in their study that the relationship between green consumption intention and behavior can be mitigated by green product availability at least in two different ways. First, purchasing green products refers to consumers selecting between options ranking on different levels of eco-performance. Thus, compromise is often attached to green consumption while consumers purchasing more sustainable products are usually required to either put in extra costs, spend extra effort and time or sacrifice quality in exchange of green purchase. The risk is that if the consumer who has positive intention to act in environmental matters, finds his or her own benefits to be significantly lower than the total cost and effort, consumer might not end up buying or using green products. In order of lowering this risk and such perceived costs, it is important to make the green offering more appealing by increasing the availability of green products.

Secondly, Nguyen et al. (2019, p. 121) claim that green purchase intention leading to actual behavior depends on whether the consumer is able to recall his or her intention. The problem seems to be, that when the availability of green products appears very low, consumer does not pay attention to his or her intention and end up making a purchase decision disregarding the initial intention. In fact, a study on the topic (Gleim et al., 2013) has found unavailability of green products to be one of the main reasons explaining why green consumers don't end up buying green alternatives. This being said, availability of green products might trigger the consumers' memory of green consumption, help them to remember their behavioral intention and thus remind them to behave according to their green intentions. (Nguyen et al., 2019, p. 121)

#### **3.4.1.1 Willingness to pay**

As presented above, purchasing of more sustainable flights often requires a compromise from the consumer. Typically, the compromise comes in the form of having to pay for increased ticket prices, which the airlines are selling to enable the usage of more environmentally friendly low carbon fuels. (Xu et al., 2022). The consumers' willingness to pay is one factor determining whether consumer ends up paying extra costs to lower their carbon footprint.

Few previous studies have aimed to determine the approximate price premium that passengers would be willing to pay for low carbon fuels. According to the study by Rains et al. (2017), consumers are willing to pay a price premium of 13%, while Rice et al. (2020) suggests consumers to be willing to pay up to 15% extra for more sustainable fuels. Nevertheless, it can be expected that consumers with different backgrounds are willing to pay different amounts as price premium.

#### **3.4.1.2 The information available to consumers**

It has been increasingly discussed how responsible consumers should be purchasing flights from airlines that are adapting their strategies towards green. However, the difficulty seems

to be, that there is lack of information in evaluating the environmentally friendliest options. It seems that the industry is requiring the consumers to do a considerable amount of research in order of being able to find the most suitable solution when looking into greener options. Even though there are multiple different 'carbon calculators' available online, they mainly focus on calculating the approximate carbon emissions by filling in the data of the distance being flown. These calculators don't consider some of the very important factors, such as the airline and its sustainability initiatives nor the aircraft type, which is one of the key factors effecting the efficiency. (Bastian, 2019)

Cowper-Smith et al. (2011, p. 60) presents how the typical ways companies communicate their corporate social responsibility (CSR) initiatives to the public are media releases, corporate sustainability reports, websites, and voluntary communications. Even though green marketing has become an important asset for companies as it increasingly creates competitive advantage (Nguyen et al., 2019, p. 119), there seems not to be easily accessible information available on the sustainable developments and opportunities for travelers. When a consumer starts looking for flights online, most of the search results are inevitably offering "cheap flights", while information on greener options is quite scarce.

### **3.4.2 Perceived consumer effectiveness**

The theory of perceived consumer effectiveness (PCE) explains whether or not consumer believes that by purchasing sustainable products individual consumers are able to make a difference and impact on the environment. Evidence has been gathered that the share of green consumption can increase by the effect of PCE. (Nguyen et al., 2019, p. 121) Thus Nguyen et al. (2019, p. 121) argue that PCE might mitigate the gap between green consumption intention and actual behavior in two different ways.

First, they claim that the reason behind consumers desire to select a green alternative might originate on the idea of its' better total benefits comparing to the less green alternative. When consumers feel confident of their ability to make a difference on the environment through their own decisions in green consumption, they are consequently more likely to follow their

intention and act accordingly. On the contrary, if consumer feels skeptical, confused or other negative feelings towards green claims, the green offerings might even scare them away. (Nguyen et al., 2019, pp. 121–122)

Second, Nguyen et al. (2019, p. 122) explain how the actual consumption behavior of consumer might depend on the individual's ability to control his or her intentions and goals. Purchasing green products usually refers to consumers goal of wanting to satisfy not only their own needs, but also the environmental needs of the surrounding society and nature. Hence it can be assumed that consumers may act according to their intention if by purchasing green they believe they can have the ability to control their goal of improving environmental aspects of the society.

## 4 Cultural dimensions

Cultural differences are an asset, which every international company, including airlines, should consider while including it into their business strategies. By utilizing the theory of cultural dimensions, organizations can learn to understand how to interact with cultural differences among different markets. Among other researchers, Auger et al. (2010, p. 140) have raised that while the consumers' social consciousness is continuously increasing, it is becoming more and more crucial for organizations to understand the cultural dimensions to support marketing products and services locally and globally. Consumers today have endless product and service options to choose from, while being more and more aware of the options available by their increasing brand consciousness, level of education and increased income. Therefore, it is evident that consumers today require more profound comprehension. However, the more resources are put into understanding consumers, the more organizations will benefit in pursuing effective targeting.

Several cultural models have been developed to support understanding of cultural differences, of which Dr. Geert Hofstede's model on six dimensions of national culture is probably the most well-known and used alongside global marketing and advertising. (Dolan & Kawamura, 2015, p. 105) Hofstede's model has been widely accepted and referred to, and it has been found suitable to measure cultural orientation on personal level. (Ray & Sahney, 2021)

Nevertheless, Hofstede's model has also gained criticism for its limitations. The data of the model relies on questionnaire results that were collected in 1980 from 80 000 IBM employees based in 66 different countries. This enabled Hofstede the creation of the first model, forming the first four dimensions, namely power distance, masculinity, individualism, and uncertainty avoidance. (Chieh-Lu, 2004, p. 149) The criticism has grounded on the limitations of the data and the sample consisting of employees only from a single company. Additionally, the data has received critique on the respondents being mostly highly educated, white-collar workers, well-paid and principally male. (Gerlach & Eriksson 2021, p. 2)

Regardless of the criticism, Hofstede's model was found the most suitable to be utilized in this study, as it has been widely applied in studies that research consumer behavior. The model supports in interpreting the concepts of personality, identity, and self as well as the differences between those terms, which consecutively justifies different variations available in branding and communication strategies. (De Mooij & Hofstede, 2010, p. 85) Additionally, Hofstede's cultural dimensions have been recognized by its relevance to international business, which is a relevant factor considering this study. Hofstede's model can be exploited in cross-cultural studies, that are measured on not only country-, but also individual level. (Yoo et al., 2011, p. 2)

Table 3 presents country comparison between Finland and Italy based on dimension scores of the Hofstede model. In the following subchapters, each dimension is presented by first covering introduction and characteristics of the dimension, prior to providing a comparison of the dimension between the two countries, Finland and Italy.

**Table 3.** Country comparison based on dimension scores (Hofstede Insights, 2021).

Country	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long Term Orientation	Indulgence
Finland	33	63	26	59	38	57
Italy	50	76	70	75	61	30

#### 4.1 Power distance

According to Hofstede model (2021), the power distance dimension aims to explain how a certain culture relates towards inequalities among people. To be exact, power distance is defined and calculated as the extent to which the different institutions' and organizations' less powerful members accept power being distributed unequally. (Hofstede, 2021). Small power distance stands for minimized inequalities among people, while large power distance expects and even desires inequalities among people. (Hofstede & Hofstede, 2005, p. 57) Dolan et al. (2015, pp. 108–109) explain that the power distance in organizational work can be described as the way in which emotional distance separating subordinates from managers is handled in

society. In this dimension inequality is determined by the less powerful members of the society focusing on their value standards.

Finland scores low (33) on the power distance dimension. Thus, Hofstede model (2021) explains the Finnish citizens to characterize as independents, who value equal rights and hierarchy only for the sake of convenience. In Finland, managers have faith in the experience and skills of their subordinates, which also explains why the power is to a high extent decentralized. Employees in companies expect to be consulted in their roles and tasks, however control is not appreciated which might be linked to informal yet direct style of communication.

Italy on the other hand scores higher (50), nevertheless Northern Italy seems to have a handful of similarities with Finland in their behavior related to power distance. Northern Italy, such as Finland, prefer equality and decentralized power, while disliking control and formal kind of monitoring. In Northern Italy people demonstrate appreciation for teamwork as well as open management style. (Hofstede, 2021)

## **4.2 Individualism**

The dimension of individualism evaluates to what extent does a society maintain interdependence among its residents (Hofstede, 2021), or in other words, to what degree do individuals integrate into groups (Dolan et al., 2015, p. 109). In Individualist societies people are expected to take care of only their direct family besides themselves. In Collectivist societies people tend to look after others, while gaining loyalty. (Hofstede, 2021) Dolan et al. (2015, p. 109) describes the difference between individualism and collectivism so, that in individualist societies people think of themselves as an "I" while in collectivist societies the focus is on the group: "we". Hofstede and Hofstede (2005, p. 92) have also presented harmony as one of the key differences dividing individualism and collectivism; collectivism avoids direct confrontations to maintain harmony, whereas individualism finds honesty in a person who speaks their mind.

With a score of 63 Finland is identified as individualist society, meaning that individuals are independent, and expected to only take care and look out for themselves and their close family members. People tend to avoid offensiveness, as it is followed by feeling of guilt and decrease in self-esteem. In the work life, the decisions on hiring and promoting people are expected to be exclusively based on merit, the relationship between employee and employer are usually build on the basis of gaining mutual advantage, and management is focused on individuals. (Hofstede, 2021)

Similarly, as Finland, with a score of 73 Italy can be also identified as individualist culture: life is rather centered around self, even though family and friends certainly have fundamental importance in people's lives. In Northern Italy people strive happiness through being able to fulfill their own kind of life and live up to their ideas and dreams. However, it has been said that especially in the Northern big cities people might even feel loneliness due to being in the middle of fast forward moving large crowd. "Me" focused life can sometimes be seen in the business circles, for example in situations where someone is called a "friend" only because they are found useful in means of having powerful network of connections. (Hofstede, 2021)

### **4.3 Masculinity**

Masculinity dimension describes whether a society is more masculine or feminine. On this scale a low score represents feminine values, meaning that the society values quality of life and finds caring for others important. Standing out from the crowd is not what feminine societies are aiming for, but rather focusing on the quality of life. (Hofstede, 2021) Looking into the work life aspect, feminine societies aim for having strong cooperation with colleagues, desirable relationship with direct superior as well as secured employment contract. (Dolan et al., 2015, p. 109)

A high score on the scale represents masculine society. Masculine cultures are quite the opposite form feminine, as the key values consist of achievement, success and competition. Dolan et al. (2015, p. 109) specify the masculine culture to be very much attached to goals related to work: what is appreciated, is high earnings, deserved recognition, job advancement

and challenging job. To simplify, the key difference that divides these societies, is that masculine societies focus on being the best at what they do, while feminine societies aim to find something they enjoy doing. (Hofstede, 2021)

Finland is considered a feminine society with its score of 26 on the masculinity dimension. Thus, in Finland people tend to work for being able to live and in work solidarity, equality, quality and flexibility are especially valued. Managers pursue consensus, however in case of conflict, compromise and negotiation are key to finding a solution. Subordinates value a supportive manager and involvement in the decision making. What comes to personal life, people rarely show off with their statuses – free time and well-being are elements people strive for. (Hofstede, 2021)

Italy on the other hand is recognized as masculine society with a score of 70. Masculinity is especially highlighted through the success oriented way of life – competition and winning are elements which are visible already in the playground of young children and it continues to be even more important factor in adulthood, while success is often achieved at work by competing with own colleagues. Success is showed off by purchasing different status symbols like cars, houses, trips, or yachts. (Hofstede, 2021)

#### **4.4 Uncertainty avoidance**

The dimension of uncertainty avoidance refers that to what extent does the society tend to control the future. In other words, this dimension can be measured as “The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these” (Hofstede, 2021). Uncertainty avoidance dimension explains the degree to which a culture teaches the citizens to feel either comfortable or uncomfortable in structured or unstructured situations. (Dolan et al., 2015, p. 109) Weak uncertainty avoidance finds uncertainty as normal feature of life, whereas strong uncertainty avoidance fights against uncertainty as it is found as threat. (Hofstede & Hofstede, 2005, p. 176)

With a score of 59, Finland ranks to have a high preference for avoiding uncertainty. With regards to this, Finland is rather intolerant for unconventional ideas and behavior – people are guided by rules, which goes hand-in-hand with the busy and hardworking way of life, where security is one of the most important elements for motivation. Punctuality is an important norm, which might even decrease the level of innovativeness. (Hofstede, 2021)

With a high score of 75 on uncertainty avoidance Italians do neither enjoy situations that they find ambiguous. The bureaucratic country is known for its formality with all its norms and procedures, which people however comply to only a certain extent. What comes to the working environment, high uncertainty avoidance is visible in the very detailed and anticipated planning that Italians value. While Italians find their lives stressful and difficult, they tend to release the pressure by finding delight in long meals and frequently appearing coffee breaks. People are very passionate; strong emotions are often expressed with well-known ambitious body language. (Hofstede, 2021)

#### **4.5 Long-term orientation**

The long-term orientation dimension refers to societies having to battle with maintaining links to own past and history while at the same time managing to stay orientated with present and future. The societies which score low on this score are called normative. These societies respect time-honored traditions, and they don't welcome change without careful consideration and suspicion. (Hofstede, 2021) Normative, short-term orientated societies value leisure time, investing for now and only little for future. (Hofstede & Hofstede, 2005, p. 225) The societies which on the other hand score high on this dimension, are called pragmatic. The pragmatic cultures value modern education in order of being able to prepare and manage in the future along the change. (Hofstede, 2021) Pragmatic, long-term orientated societies do not find leisure time important, and have thus more savings to invest for the future. (Hofstede & Hofstede, 2005, p. 225)

In this dimension Finland scores low (38), representing Finland as normative country. In Finland, people are classified as normative in their way of thinking, which refers to them having a strong concern to establish the absolute Truth and having a high respect for

traditions. Finnish aim to achieve results promptly and living in the moment, with rather little focus on saving for the future. (Hofstede, 2021)

With a high score of 61 Italy is seen as pragmatic country: truth is believed to depend on different aspects such as situation, time, and context. Traditions are not definite, and they are often adapted to occurring conditions. On contrary to Finnish culture, instead of living in the moment, Italians focus their savings and investments for the future. (Hofstede, 2021)

## **4.6 Indulgence**

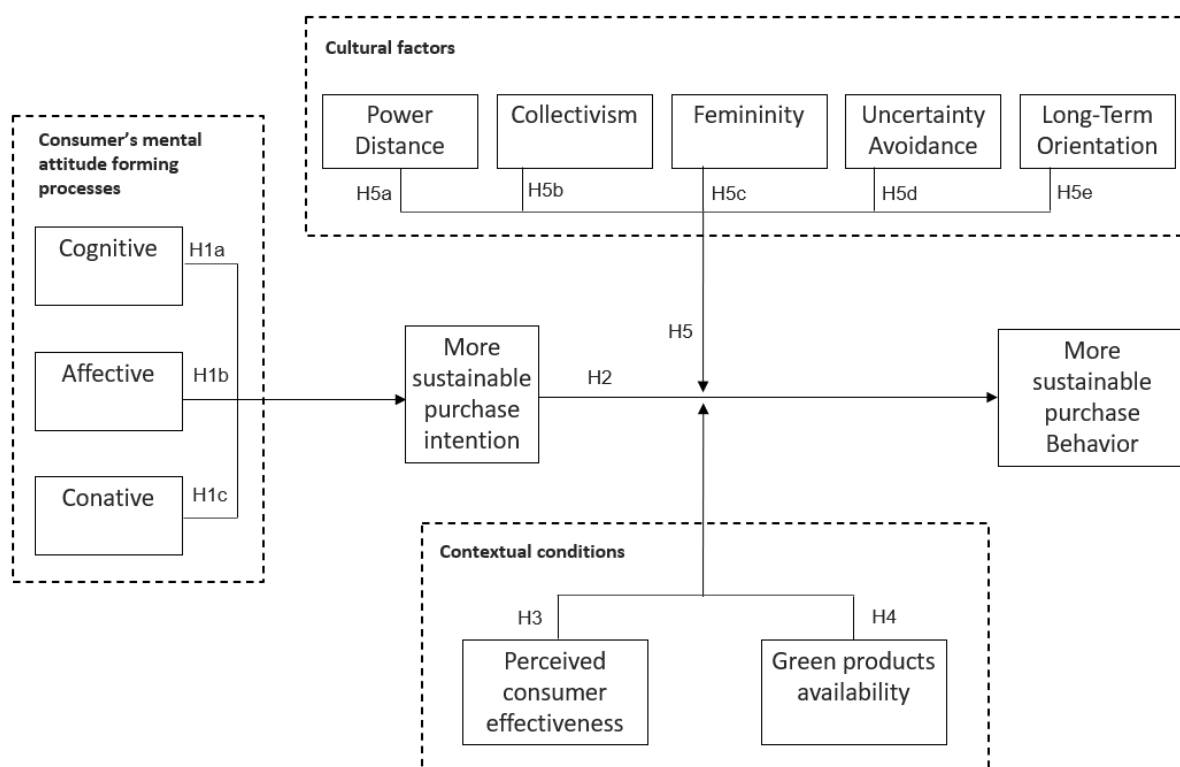
The indulgence dimension refers to the way in which people in societies are normally being raised. In more specific, it can be measured by studying that to what extent based on the way of being raised do people in a society aim to control their own desires and impulses. In indulgent societies there is a tendency for relatively weak control, while in the restraint societies the control is relatively strong. (Hofstede, 2021) It is also highlighted, that with the dimension measurement can focus on investigating elements such as happiness, importance of leisure and life control. (Dolan et al., 2015, p. 110)

In the indulgence dimension Finland ranks rather high with a score of 57, while representing Finland as indulgent country. People tend to have tendency for optimism and positive attitude, as well as follow their instincts and desire of having fun and enjoying life. Leisure time is in high importance and people put a lot effort into it by spending money and doing things they please to do in their own way. (Hofstede, 2021)

Italy appears as restraint country with a low score of 30. The score indicates that Italian culture has proneness to pessimism and cynicism. People don't stress the importance of leisure time, which is reflected in the belief that individuals should not indulge themselves too much while the social norms are restricting their actions. (Hofstede, 2021)

## 5 Theoretical framework and hypotheses

This chapter concludes the theoretical part of the thesis by introducing the theoretical framework and hypotheses of the study. Theoretical framework is formed based on the review of previous studies and significant literature relevant for this study. Each hypothesis is presented by providing background on the related theory and thus performing justification for the selection of that hypothesis. Both theoretical framework and hypotheses are visualized in figure 8.



**Figure 6.** Theoretical framework of the study.

While consumer's cognitive processes reflect their beliefs and thinking, those can be studied by examining their knowledge, past experience, learning and memory. (Kumra, 2006, p. 174) As knowledge can be relatively easily measured, knowledge is used as one indicator for this study. Looking into the environmental perspective, previous research has shown that consumers who reflect higher level of environmental knowledge, have correspondingly shown higher willingness for paying a premium when purchasing green products. Environmental knowledge has a direct linkage to beliefs regarding green purchasing – the more knowledge

the consumer has gained, the stronger opinion can be formed reflecting beliefs and attitude. Previous research has also suggested that engaging with green consumption is attached to consumers who feel and believe they have convenient amount of knowledge and awareness on environmental issues. (Pagiaslis & Krontalis, 2014, pp. 337–338)

*(H1a): Consumers' cognitive processes, namely environmental knowledge and beliefs have a direct positive effect on the intention of purchasing more sustainable flights.*

Cognitive processes are one way for studying purchase intention, however environmental knowledge does not cover it all. Previous studies have presented that even though consumers don't have wide, in-depth knowledge about the environment, many still do reflect attachment to it emotionally. Relatively, studies have found a positive relationship between behavior and ecological affect. (Chan & Lau, 2000, p. 341) Affect is found to have an even stronger correlation with consumers' commitment to behave green than environmental knowledge. Green consumption and other pro-environmental behavior have been found to be engaged by consumer who attach to ecological affect. (Liu et al., 2017, p. 444)

*(H1b): Consumers' affective responses towards environmental issues have a direct positive effect on intention of purchasing more sustainable flights.*

As many previous studies reflect, purchase behavior is affected by various factors, making predicting of future purchase behavior rather challenging. Some predictors are found less effectual while others surprisingly efficient. Solomon et al. (2013, p. 308) have argued previous purchase behavior to be the most efficient factor in predicting actual behavior. Thus, it is expected that previous experience in purchasing flights would also predict the intention of future purchases.

*(H1c): Consumers' conative responses reflecting previous sustainable purchase behavior have a direct positive effect on intention of purchasing more sustainable flights.*

Purchase intention has been widely considered as one of the fundamental predictors of actual purchase behavior. (Peña-García et al., 2020, p. 2) It has even been presented that the final purchase decision would depend on the individuals' purchase intention. (Jacob et al., 2020, p.

89) Therefore, consumers' green intentions are expected to predict consequently green purchase behavior.

*(H2): Sustainable purchase intention will have a positive influence on expected more sustainable purchase behavior.*

Recent studies have found intention-behavior gap related to purchasing of more sustainable products: even though 80% of consumers reflect willingness to pay more for eco-friendly products, only 20% are willing to behave accordingly. (Pagiaslis et al., 2014, p. 337) One target of this study is to find out what are the factors affecting this gap. The first attempt is made based on the finding, that purchase of green products has a linkage to consumers' perception on whether they believe they as individuals have the ability to effect on environmental issues. (Tang et al., 2014, p. 87) Previous studies suggest that PCE could strongly predict green behavior (Heo & Muralidharan, 2019), even if purchase intention does not.

*(H3): The perceived consumer effectiveness moderates the relationship between the sustainable purchase intention and the actual behavior such that when consumers believe their sustainable purchase behavior has an impact on the environment, the positive relationship between the intention and the actual behavior becomes stronger.*

In addition to PCE, availability of green products is another factor that has been raised in the recent studies as potential element that could close the green purchase intention-behavior gap. Purchasing sustainable products often requires sacrifices from the consumer, such as paying a higher price or spending more time and effort on finding those products. Green products are usually not as easy to find as other substitute products, which could affect the final purchase decision. (Nguyen et al., 2019, p. 121)

*(H4): The availability of green products moderates the relationship between the sustainable purchase intention and the actual behavior such that the more the eco-friendlier flights are available, the stronger the positive relationship between the intention and the behavior.*

De Mooij and Hofstede (2010, p. 102) present how important it is to consider the context of the research when setting hypotheses for studying cultural values. While some of the manifestations of different dimensions are targeted for work-related studies, the hypotheses and relevant indicators of this research are designed to investigate consumer behavior and

more specifically how cultural differences impact the relationship between green purchase intention and initial behavior.

Power distance is often used for evaluating the relationship and connection between subordinates and managers, yet it can also focus on “everyone having his or her rightful place in society versus equality.” (De Mooij et al., 2010, p. 102) While in high power distance cultures inequalities and concealed conflicts between powerless and powerful rise from society’s hierarchies, low power distance cultures value harmony and cooperation by respecting solidarity between these groups. What comes to green purchasing behavior, power distance might reflect especially the differences in consumers’ ability to make purchases. Regarding purchasing green products, people with higher social status might end up purchasing green products more than people with lower status due to the often significantly higher prices attached to green products. However, it seems that more specific relationship between power distance and consumers’ green purchase preferences has not been found. (Ghazali et al., 2021, pp. 1045–1046)

*(H5a): Power distance moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to high power distance, the stronger the positive relationship between the intention and the behavior.*

Various previous studies have demonstrated a positive connection between environmental attitudes and collectivism. Unlike individualists, collectivists are often more prone to prioritizing the goals and priorities of groups rather than their own which is why they are likewise generally more concerned for the common good like environment. Collectivists tend to feel even personal obligation to provide prosperity for others by taking action in protecting the environment. It has been also presented that collectivists often find pro-environmental behavior effective and are thus more willing to invest personal costs and effort into it. (Nguyen et al., 2017, p. 380)

*(H5b): Collectivism moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to collectivism, the stronger the positive relationship between the intention and the behavior.*

Hofstede model (De Mooij et al., 2010, p. 89) presents the main difference between masculine and feminine societies to be the following: while masculine societies value success and achievement, feminine societies value quality of life and caring of others. People in feminine societies have higher tendency for valuing not only surrounding people, but also the living environment. What comes to purchase behavior, femininity has even been presented as determinant for green purchase behavior. (Ray & Sahney, 2021)

*(H5c): femininity moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to femininity, the stronger the positive relationship between the intention and the behavior.*

As previously presented, uncertainty avoidance can be explained by how threatened people feel when facing uncertainty and the extent to which they try to avoid these uncertain situations. In high uncertainty avoidance cultures, the wish for change and innovativeness are low. (De Mooij et al., 2010, pp. 89 & 102) In order to avoid uncertain conditions, consumers from high uncertainty avoidance cultures tend to hold on to traditions and are thus rarely willing to change their consumption patterns. It has been also studied that in cultures that are high on uncertainty avoidance, consumer attitude related factor of green self-identity does not affect the adoption of green products. Thus, it can be predicted that consumers in high uncertainty avoidance societies tend to be less likely to adopt and purchase green products. (Ray & Sahney, 2021) Therefore, following hypothesis was formed:

*(H5d): low uncertainty avoidance moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to low uncertainty avoidance, the stronger the positive relationship between the intention and the behavior.*

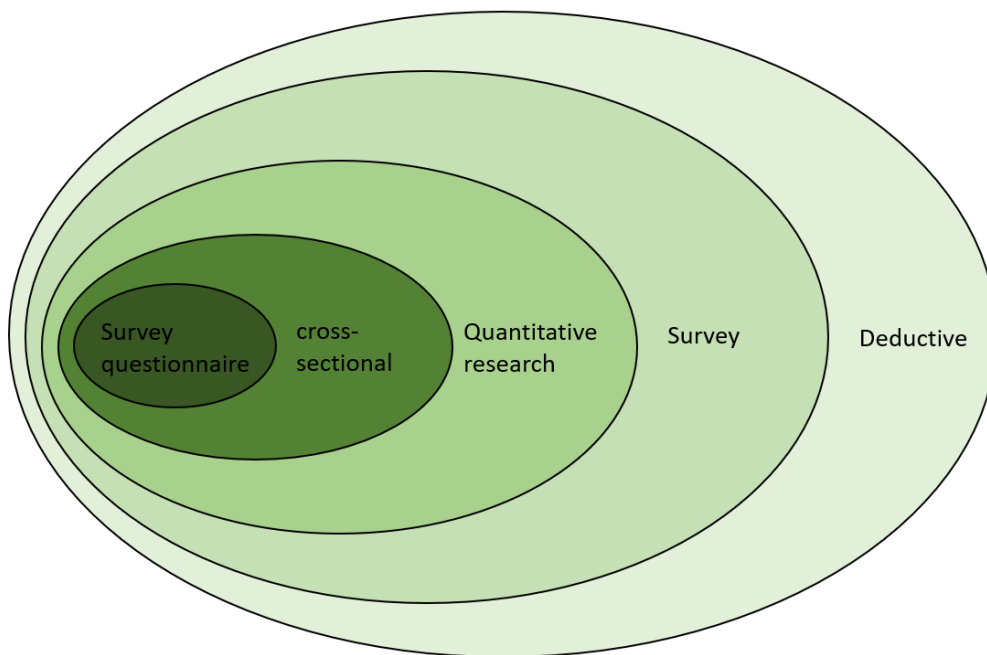
While traditions, families and future planning are highly valued among long-term-oriented individuals, they therefore also have tendency for prospering in their own and families' future by enhancing environment related attitudes. Studies have shown how long-term-oriented individuals reflect stronger attitude as well as higher concern towards the environment. What comes to purchase behavior, long-term-oriented consumers take more time and effort to consider purchase decisions and overall manage money more carefully. Especially when planning to make pro-environmental purchases, long-term-oriented consumers presumably

search for support from others to get confirmation for the decision. Pro-environmental behavior regardless involvement of personal costs is recognized to be motivated by traits of morality and benevolence, which are often valued by long-term-oriented consumers. In the context of green purchasing, possible obstacles such as uncertainties towards the product and eco-labels or extra effort needed are likely to be overcome with the support of their innovativeness and persistent and hardworking nature. (Nguyen et al., 2017, p. 381)

*(H5e): long-term orientation moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to long-term orientation, the stronger the positive relationship between the intention and the behavior.*

## 6 Research methodology

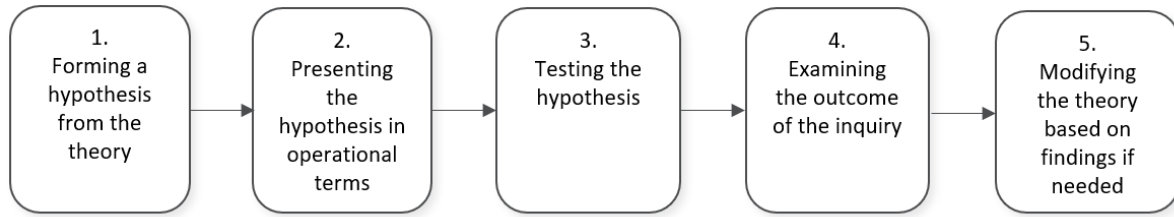
This chapter aims to explain the methodology applied on this research. In the following sub-chapters, the choices related to the research approach, research methods and samples, as well as data collection and data analysis will be presented. Finally, the validity and reliability of the study will be discussed.



**Figure 7.** Thesis research onion (adapted from Saunders et al., 2007, p. 132).

### 6.1 Methodological approach

This thesis approaches the research from the deductive point of view, meaning that the research is conducted by first reviewing the existing theory in the field, and then continuing to forming hypotheses and empirical testing. (Saunders, 2007, p. 117) Deductive research has been presented to consist of five consecutive stages, of which this study also follows. The steps are presented in figure 8.



**Figure 8.** Five stages of deductive research (adapted from Saunders et al., 2007, p. 117).

The five phases represent several important characteristics that are typical for deductive research. The first phase of forming hypotheses from the theory reflects the deductive research's focus on explaining causal relationships between different variables. Hypotheses are formed based on existing literature to study the relationship between variables. The second phase presents that hypotheses are required to be set in operational matter, to be able to measure the variables in a quantitative way. In this phase it is important to consider controls to allow proceeding to testing of hypotheses. Reductionism is also taken into account in deductive research, the focus being that problems are being simplified by reducing them into most understandable forms. Generalisation needs to be taken into account before continuing to testing phase, in order of being able to generalize the objective statistically. This can be done by choosing adequate amount of samples suitable for the study. The third phase of testing the hypotheses will exploit hypotheses testing strategy to follow deductive research model. The fourth phase focuses on examining outcomes of the study: it will either confirm the presented theory or address the demand for adaptations. Finally, in the fifth phase theory will be modified in case needed. (Saunders, 2007, pp. 117–118)

### 6.1.1 Research approach

Saunders et al (2007, p. 132) present how the purpose of research should reflect the approach in which study is carried out. Three approaches have been introduced for the purpose: descriptive, explanatory and exploratory. However, it has also been highlighted how the purpose of research does not need to be limited into only one of the presented approaches, but it can be composed of combinations of these variables. Thus, this research is executed by combining descriptive and explanatory study. By utilizing descriptive research method, one is

able to define accurate illustrations of either events, persons or situations. Descriptive research enables to form a clear presentation on the objective and phenomena before collection of the data. Thus, this study first focuses on exploiting descriptive research on constructing the theoretical framework on the topic as a basis of the study. Explanatory method on the other hand will be utilized on a later phase of the research to support data collection and analysis. Explanatory studies refer to studies, which demonstrate causal relationships between different variables. The intention is to study a problem thoroughly for being able to explain the connection between the variables. (Saunders et al., 2007, p. 134)

### **6.1.2 Survey strategy**

In this study quantitative research will be deployed as a methodological approach for the study. Quantitative method refers to a numeric data collection and analyzing technique, while qualitative method on the contrary indicates the use of non-numerical data. However, in addition to quantitative method, qualitative aspect will be utilized for analyzing part of the data, to support understanding of the findings from quantitative analysis. (Saunders, 2007, p. 138)

As a data collection method, the thesis will be constructed based on primary data. Primary data will be collected as quantitative. While quantitative approach is selected as the primary method in this research, the data will be collected utilizing questionnaire technique with survey strategy.

Survey strategy was a natural choice to be utilized in this study, as it is often integrated with deductive approach. Survey strategy has also been found to be efficient and popular research approach among business studies. (Saunders, 2007, p. 138) Survey strategy includes different data collection techniques, from which questionnaire is found to be the most commonly used. This is mostly due that the technique provides an efficient and economical way of collecting data from a large sample, as each respondent is asked to answer to the same set of questions. In this study data collection will be performed by using self-administered and more specifically internet-mediated questionnaire, meaning that the questionnaire is internet-based. (Saunders, 2007, pp. 355–356)

The selected method for data collection will enable to find answers for example to *what, how much* and *how many* -type of questions. The approach provides essential conditions to study relationships between different variables while the collected data should allow to propose reasoning and models explaining these relationships. The primary data will be numerical. While the data is standardized, it will allow easy comparison in the analysis. What comes to validity, survey strategy has widely been found as very authoritative as well as clear method for explaining and understanding phenomena. (Saunders, 2007, p. 138)

Looking into the time horizon perspective, this research is carried out as cross-sectional study, mainly due to the limited time and other resources for completing the research. This means that the data is collected once, at a certain point of time. The analysis will be accordingly based on the results of this specific data collection. Cross-sectional study was also found to be suitable to this study due to its applicability with survey strategy. (Saunders, 2007, p. 148)

## **6.2 Data collection**

The data was collected with a survey that was created on Google Forms. Google Forms was found to be a suitable platform for creating the survey, as it enables to reach the target group easily from both Finland and Italy. The survey was shared only in English, and it was not translated to local languages in either target country to avoid misunderstanding caused by translation issues and thus potential impact to the results.

Prior to collecting data, pilot survey was executed to ensure that the survey functions as intended. In other words, purpose was to make sure that respondents will not face any difficulties in answering the survey, as well as ensuring that data outputs correctly. (Saunders, 2007, p. 386) The pilot survey was shared with five test members and reviewed according to their feedback and comments. A few minor modifications were made to clarify the questions, however overall, the pilot group shared positive feedback by having found the survey easy to understand and follow.

The survey was open for responses for two months, from 5<sup>th</sup> May until 5<sup>th</sup> July 2022. The survey was targeted to Finnish and Italian consumers. In order of reaching wider visibility for the survey, support was received for sharing the participation link from university administrators in Finland and Italy. Targeting to reach the Finnish consumers, University of Vaasa supported by sharing the survey in the University's newshub website, which is targeted for students, personnel, and stakeholders of the university. Additionally, survey was shared with participants of a university course that had over 100 attendees. Correspondingly, University of Bolzano in northern Italy supported in sharing the survey to all students via university wide mailing list, assisting to reach the Italian target group. In addition to the university channels, survey was shared with friends and family through social media applications WhatsApp and Facebook.

The target of the survey was to reach 50 responses from both Finland and Italy. According to quantitative research guidelines for collecting and comparing the data between different groups, survey sample should consist of minimum 30 responses from each group. Additionally, it has been proposed that surveys which are comparing groups, should receive responses from around 200 to 300 respondents in total. (Vilkka, 2007, p. 57) With the survey of this research the set target was reached. The survey received total amount of 202 responses: 80 responses from Finland and 85 responses from Italy. The remaining 37 responses were received from 22 different countries (Albania, Brazil, Canada, Colombia, France, Germany, Hungary, India, Iran, Japan, Laos, Malaysia, Norway, Portugal, Russia, San Marino, Slovakia, Spain, Switzerland, The United Kingdom, The United States of America, and Venezuela). The responses that were received from other countries than Finland and Italy were not included in the data analysis.

### **6.2.1 Survey design**

The survey covered questions about the main themes that this thesis is focusing on; consumers' mental attitude forming processes, more sustainable purchase intention and behavior and contextual conditions as well as cultural factors' role in the purchase process. Altogether the survey consisted of 62 statements and one open comment field.

In the survey the order of the questions has been set by grouping the questions by the different topics measured. It has been studied that ordering the questions by topic increases the participants level of cooperation as well as decreases their cognitive burden of taking the survey. (Saris & Irmtraud, 2014, p. 157)

### **6.2.2 Question types**

As most questionnaires, also the questionnaire used in this study consists of both, closed and open questions. Closed questions are attached with alternative answers, from which the respondent is asked to choose the most suitable option. Open questions on the other hand are those questions, which enable respondents to share their perspective more freely, by having the opportunity to describe their experiences by words and sentences. In the questionnaire used in this study, the questions are mostly closed questions, as those are often found easier and faster to respond to by respondents. With this decision it is also expected that the questionnaire will receive higher number of respondents, which will consequently increase the accuracy of the results. (Saunders, 2007, p. 368)

All the closed questions used in this survey were either category questions or rating questions. The category type question setting was selected for querying respondents' characteristics as well as purpose and frequency of flying, as Saunders (2007, p. 370) suggests it to be especially efficient when investigating behavior or attributes. Category questions allow the respondent to select only one suitable answer from the selection of responses. The questions that are collecting data on opinions and behavior, were formed as rating questions. Five-point likert-style rating scale was used to find out how strongly the respondents agreed or disagreed with the presented statements.

All closed questions were either adopted or adapted from previous studies to increase reliability. However, each question was carefully assessed to confirm the question was functional and serving the purpose. (Saunders, 2007, p. 368)

In the survey all the multiple-choice questions were mandatory to answer to provide as much information as possible from each participant. Only open comments -field was set as optional

to respond to, so that the respondent was able to decide whether he or she wanted to reflect the topic more extensively.

### **6.2.3 Survey language**

What comes to question wording, four criteria presented by larossi (2006, pp. 30–43) were followed and thus the questions were formulated as brief, objective, simple and specific. First, larossi highlights the importance of brief sentences to avoid confusing the respondent with long and complex questions. This was taken into consideration when designing the survey, however making sure that the intended meaning would not be jeopardized but could still be clearly understood.

Second, to follow larossi's (2006) example, all the questions were reviewed to determine their objectivity. Objective, in other words neutral question setting is critical for survey design to make sure the questions don't suggest any answer. Accordingly, the survey was formulated by avoiding leading questions (which might have unintentionally pushed the respondent to answer in a certain way), loaded questions (which might bias the answers via words that have been emotionally charged), and built-in assumptions (which might lead to dishonest answers if the respondent is in understanding that it is taken for granted that he or she should be familiar with a topic that they might not be).

Third, by following larossi's (2006) guideline, the target was to use simple language and terminology that all respondents would understand. Field specific jargon was avoided, however, few terms that could not be avoided were clearly explained. Additionally, the focus was on using same definitions throughout to avoid confusion.

Finally, questions and language in the survey were composed with attention to being specific. Vague questions tend to generate vague answers, which is why it was crucial to ask precise questions.

### **6.3 Data sampling**

Data sampling refers to techniques, which enable to reduce the amount of data by focusing on collecting the data from a certain subgroup. Population indicates the overall sample which has been selected as the target group of the study. (Saunders, 2007, pp. 204–205) In this study the sample reflects the selected target group of people and more specifically consumers in both Finland and Italy. Sampling enables to execute the study within a shorter time, as it is more efficient to collect data from a group that has been limited. Also, the smaller amount of data enables the availability of results to be available more quickly. It has been argued that sampling would provide more accurate and detailed results than a census, which refers to data collection that has not been limited, but the data is collected from all possible targets. This can be explained with time limitations; while there is less data to be collected from a targeted group, there will be more time for designing and piloting the collection of data. (Saunders, 2007, pp. 206–207)

From the different sampling techniques available, this study will utilize non-probability sampling. The term refers to a way of sampling, in which probability is unknown for each case being selected from entire population. (Saunders, 2007, p. 207) Therefore, results cannot be presented for total population, but this is insignificant for this study as it is not the target of the research, but rather to test the theoretical framework with the support of formed hypotheses. Self-selection sampling was selected as the most efficient approach for sampling. This sampling method enables that desire to participate in the research can be identified by individuals themselves. Self-selection sampling is implemented by first advertising the survey via selected media and by requesting the individuals to take part in the survey. (Saunders, 2007, p. 233)

### **6.4 Data analysis**

Once the data had been collected, data analysis was conducted to test the hypotheses and thus answer the research questions of this thesis. The below sub-chapters will first present

the content of the analyzed data in forms of variables and measures collected with the survey. Furthermore, the process of statistical analysis and tests that were carried out will be presented.

#### **6.4.1 Variables and measures**

Questionnaires allow to collect three different types of data variables: opinion-, behavior- and attribute variables. All three types of data variables are included in the questionnaire of this thesis. (Saunders, 2007, p. 362)

Opinion variables allow to collect data on respondent's feelings towards something. Opinion variables can also aim to understand whether the respondent believes something is false or true. (Saunders, 2007, p. 362) In the questionnaire opinion variables were included to record the respondents feeling towards flying and related sustainable initiatives. In addition, cultural dimensions were recorded by measuring how strongly the respondents agreed with the presented statements.

With behavior variables the researcher can track, as the name suggests, behavior of respondents. Behavior variable can collect data either on what respondents have done in the past, what they are doing now or what they will do in the future. (Saunders, 2007, p. 362) Behavior variable was the most used data variable used in the questionnaire. The questionnaire recorded respondents' behavior by measuring their travel habits and related sustainable activities by looking into their previous experiences as well as current behavior and plans on future actions.

Finally, attribute variables collect data on respondent's characteristics, in other words things that the respondent possesses. Attribute variables are usually included in questionnaires for two reasons: to ensure that the collected data represents total population and to study and compare the respondents' different opinions and behavior. (Saunders, 2007, p. 362) In this questionnaire attribute variables were used to collect information on the respondents' home country, age, gender, degree of school, employment status and annual gross income.

### 6.4.1.1 Dependent variables

In quantitative research, dependent variables are those which change in response to change in other variables. (Saunders, 2007, p. 361) In this study, two dependent variables are identified; (1) green purchase intention, and (2) green purchase behavior. According to the theoretical framework structured based on the literature review, it is hypothesized that green purchase intention is affected by consumer's mental attitude forming processes, namely cognitive-, affective- and conative processes. Green purchase behavior on the other hand is expected to be affected by green purchase intention, cultural factors as well as moderate influence of contextual conditions of perceived consumer effectiveness and green products availability.

**Table 4.** Measures for dependent variables.

Dependent variable	Indicators	References
Green purchase intention	<ul style="list-style-type: none"> <li>I am willing to pay more for a flight that is producing less emissions (Q30)</li> <li>I think in the future emissions calculator might have an impact on my travel plans (Q31)</li> <li>I would like to include flight taxation as part of taxes (Q32)</li> <li>I plan to pay for offsetting my carbon footprint the next time I'm booking a flight (Q33)</li> </ul>	Chan and Lau (2000: 344)
Green purchase behavior	<ul style="list-style-type: none"> <li>When purchasing flights, I switch to other airlines for ecological reasons (Chan and Lau 2000: 344) (Q34)</li> <li>Regardless of the price, I usually purchase flights based on the impact it has on the environment (Heo et al. 2019: 429) (Q35)</li> <li>I make a special effort to buy more sustainable flights (adapted from Dilotsotlhe 2021: 20) (Q36)</li> <li>When I make a choice between flights, I aim to purchase the ones that are less polluting (Chan and Lau 2000: 344) (Q37)</li> </ul>	Chan and Lau (2000: 344)  (Heo et al. 2019: 429)  Dilotsotlhe (2021: 20)

Table 4 represents how these two dependent variables were measured in the survey. The questions have been coded with numbers to reflect the order in which they were presented in the survey. All measures used a five-point Likert scale, ranging from "Strongly disagree" (=1) to "Strongly agree" (=5).

### 6.4.1.2 Independent variables

Independent variables can be recognized as the ones causing change in dependent variables. (Saunders, 2007, p. 361) In this study, independent variables consist of consumer's mental attitude forming processes, contextual-, and cultural factors. Altogether 11 independent variables can be identified, and they are all presented in table 5. Consumer's mental attitude forming processes consist of three variables; (1) cognitive-, (2) affective-, and (3) conative mental processes, which are all expected to influence green purchase intention. Independent variables (4) perceived consumer effectiveness, and (5) green products availability, are both contextual factors, which are expected to moderate the relationship between green purchase intention and green purchase behavior. Finally, cultural factors consist of following independent variables: (6) power distance, (7) individualism, (8) masculinity, (9) uncertainty avoidance, (10) Indulgence, and (11) long term orientation. Each cultural factor is expected to impact green purchase behavior.

Similarly, as in the presented table for dependent variable measures, the questions for independent variables are coded with numbers to reflect the presented order in the survey. the questions marked with "R" (for example Q24-R) indicate that those values have been reverse coded in the analysis. Most of the independent variables were measured by using a five-point Likert scale ranging from "Strongly disagree" (=1) to "Strongly agree" (=5). The only exception were statements which were measuring conative mental processes, which used five-point Likert scale for determining frequency, ranging from "Never" (=1) to "Always" (=5).

**Table 5.** Measures for independent variables.

Independent variable	Indicators	References
Cognitive mental processes (Beliefs, past experience, knowledge, learning)	<ul style="list-style-type: none"> <li>I can explain the environmental impacts caused by air transportation. (Q14)</li> <li>I know what channels to use to calculate carbon emissions from air travel and/or purchase carbon offsets. (Q15)</li> <li>I know that the class of seat (business / economy) is an important factor to calculate the carbon emissions. (Q16)</li> <li>I think choosing the new technology planes rather than using the older ones is better for the environment. (Q17)</li> </ul>	Adapted from Lu & Wang (2018: 99) & Baumeister (2017: 97)

Independent variable	Indicators	References
Affective mental processes (Emotions, feeling)	<ul style="list-style-type: none"> <li>• I feel concern towards environmental effects caused by air traffic. (Q18)</li> <li>• I feel angry when I learn about the emissions generated from air traffic. (Q19)</li> <li>• I feel interested in airlines that engage in promoting sustainability. (Q20)</li> <li>• I think positively of environmentally responsible airlines. (Q21)</li> </ul>	Adapted from Zhang, Zhang & Zhou (2021: 16)
Conative mental processes (Behavior, purchase or no purchase)	<ul style="list-style-type: none"> <li>• I have taken environmental aspects into consideration. (Q9)</li> <li>• I have been offered the possibility to pay for carbon offset as part of my purchase. (Q10)</li> <li>• I have paid for carbon offset. (Q11)</li> <li>• I have used emission calculator. (Q12)</li> <li>• I have familiarized myself with the airlines' sustainability initiatives. (Q13)</li> </ul>	Adapted from Baumeister (2017: 97-98)
Perceived consumer effectiveness	<ul style="list-style-type: none"> <li>• I am confident my green consumption behavior can have a positive impact on the environment. (Q22)</li> <li>• I believe products which are labeled "green" are ensured with 100% certainty. (Q23)</li> <li>• It is worthless for the individual consumer to do anything about pollution. (Q24-R)</li> <li>• Since one person cannot have any effect upon pollution and natural resource problems, it doesn't make any difference what I do. (Q25-R)</li> </ul>	Adapted from Nguyen et al. (2019: 124) and Heo et al. (2019: 429)
Green products availability	<ul style="list-style-type: none"> <li>• I do not know how to purchase more sustainable flights. (Q26)</li> <li>• There is no information available on sustainable options on the website that I usually purchase flights. (Q27)</li> <li>• I would like to buy more sustainable flights, but I find them too expensive. (Q28)</li> <li>• I would like to buy more sustainable flights but there is not enough information available. (Q29)</li> </ul>	(Nguyen et al. 2019: 124)
Power distance	<ul style="list-style-type: none"> <li>• People in higher positions should make most decisions without consulting people in lower positions. (Q39)</li> <li>• People in lower positions should not disagree with decisions by people in higher positions. (Q40)</li> <li>• People in higher positions should not delegate important tasks to people in lower positions. (Q41)</li> </ul>	(Yoo, Donthu, Lenartowicz 2011: 17)
Individualism	<ul style="list-style-type: none"> <li>• Individuals should sacrifice self-interest for the group. (Q42)</li> <li>• Group success is more important than individual success. (Q43)</li> <li>• Individuals should only pursue their goals after considering the welfare of the group. (Q44)</li> </ul>	(Yoo et al. 2011: 17)
Masculinity	<ul style="list-style-type: none"> <li>• It is more important for men to have a professional career than it is for women. (Q45)</li> <li>• Men usually solve problems with logical analysis; women usually solve problems with intuition. (Q46)</li> </ul>	(Yoo et al. 2011: 17)

Independent variable	Indicators	References
	<ul style="list-style-type: none"> <li>• There are some jobs that a man can always do better than a woman. (Q47)</li> </ul>	
Uncertainty avoidance	<ul style="list-style-type: none"> <li>• It is important to closely follow instructions and procedures. (Q48)</li> <li>• Rules and regulations are important because they inform me of what is expected of me. (Q49)</li> <li>• Standardized work procedures are helpful. (Q50)</li> </ul>	(Yoo et al.2011: 17)
Long term orientation	<ul style="list-style-type: none"> <li>• Careful management of money (Thrift) is important. (Q51)</li> <li>• It is important to do long-term planning. (Q52)</li> <li>• It is important to give up today's fun for success in the future. (Q53)</li> </ul>	(Yoo et al.2011: 17)

### 6.4.2 Statistical analysis

Statistical analysis of the collected data was done in IBM SPSS (Statistical Package for the Social Sciences) Statistics software program. The data was first exported from Google Forms in electronic format and further imported to SPSS. The statistical analysis initiated from defining the variables by naming, labelling, and coding the data in addition to defining all the measures as either ordinal, nominal or scale. Moreover, some variables were recoded by modifying the values of that specific variable (Meyers et al., 2013, p. 83) to reach veritable results. All dependent and independent variables were computed by calculating the separate indicators into composite variables. The tests that were conducted to analyze the hypotheses were Pearson's correlation, multiple regression analysis, and regression analysis with moderation. Prior to conducting each test, it was first confirmed that the pre-requisites were fulfilled for performing the analysis successfully.

Pearson's correlation is the most widely used correlation coefficient to measure the extent to which two continuous variables are related in the analysis. (Meyers et al., 2013, p. 159) Pearson's correlation ranges between -1 and +1, and the bigger the correlation is, the stronger the dependency between the variables. In this study, Pearson's correlation test was utilized to measure hypothesis 2. The strength of the correlation was considered strong if  $r \geq 0,7$ , significant if  $0,3 < r < 0.7$ , weak if  $r < 0,3$  and nonexistent if  $r$  was close to 0. (Tähtinen et al., 2020, p. 186)

Multiple regression analysis refers to examining predictors' direct effects on the dependent variable. (Meyers et al., 2013, p. 389) Multiple regression analysis enables to calculate the regression simultaneously with multiple independent variables effect towards the same dependent variable. The connection can be either positive or negative – the higher the value, the stronger the effect on the dependent variable. In this study, multiple regression analysis was conducted to test hypotheses 1a, 1b and 1c.

Regression analysis with moderation aims to find out whether an additional independent variable moderates and thus effects the relationship between the original independent and dependent variable. An expansion to SPSS, namely PROCESS for SPSS by Andrew F. Hayes (Hayes, 2023) was exploited in this study to carry out regression analysis with moderation to test hypotheses 3, 4, 5a, 5b, 5c, 5d and 5e.

## **6.5 Validity and reliability**

According to Saunders (2007, p. 356) validity and reliability can be maximized when using a questionnaire technique by careful design of individual questions, clear layout of the questionnaire form, lucid explanation of the purpose of the questionnaire, pilot testing and carefully planned and executed administration.

Discussing the validity of questionnaire and data collection, internal validity explains whether the questionnaire measures the same objects as it is expected to measure. When estimating the validity of questionnaire, three different aspects can be considered: Content validity, construct validity and criterion-related validity. (Saunders, 2007, p. 366)

Content validity is used to examine if the investigative questions are appropriately covered with measurement questions used in the questionnaire. (Saunders, 2007, p. 366) In the case of the survey made for this research, the content validity was verified by carefully reviewing the relevant literature and defining the targets of the research. Additionally, the questionnaire was tested with a pilot group, which supported in the final decision on which questions were useful and essential, and which questions on the contrary might not have been necessary.

Construct validity indicates the scale of how much measurement questions of a construct measure the intended phenomenon. (Saunders, 2007, p. 367) Due that validation of constructs is difficult to execute against existing data, it has not been examined in this study.

Criterion-related validity supports understanding whether accurate predictions can be made on the studied phenomenon with the selected questions used for measurement. (Saunders, 2007, p. 367) To increase criterion-related validity of this thesis, each question was carefully selected based on previous studies, and adjusted when necessary to fit the purpose of this study. Criterion-related validity is often also measured with the support of statistical correlation analysis (Saunders, 2007, p. 367). Pearson's correlation test was utilized for measuring criterion-related validity. In table 6 correlation results are presented for the relationships between all constructs used in this study.

**Table 6.** Validity statistics for construct variables.

	Conative processes	Cognitive processes	Affective processes	PCE	Green products availability	Green purchase intention	Green purchase Behavior	Power distance	Individualism	Masculinity	Uncertainty avoidance
Cognitive processes	.355**										
Affective processes	.268**	.174*									
PCE	.108	.060	.352**								
Green products availability	-.203**	-.357**	.166*	.023							
Green purchase intention	.345**	.044	.477**	.348**	.220**						
Green purchase Behavior	.303**	.148	.318**	.187*	.125	.517**					
Power distance	.021	.108	-.191*	-.122	-.007	-.003	.105				
Individualism	.154*	.215**	.107	.063	.017	.216**	.115	.293**			
Masculinity	-.115	-.001	-.165*	-.215**	.043	-.116	-.104	.120	-.128		
Uncertainty avoidance	-.058	-.081	.125	-.005	.117	.072	.047	.070	.058	.043	
Long term orientation	-.015	-.035	.265**	.137	.147	.174*	.037	-.078	.048	-.037	.417**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

In addition to validity, reliability was similarly constantly considered throughout the writing process of this thesis, and especially while collecting and analyzing the data. Considering data collection, one way of ensuring the reliability of the results was to add control variables to the study. In this study, control variables that might affect green consumption intention and behavior were included in the survey. (Nguyen et al., 2019, p. 122) These control variables

include age, gender, level of education, level of income, employment status and flying frequency.

Another way of improving reliability of the data, is to avoid any contamination in the respondents' answers. In the survey of this research, this was considered by formulating the introduction, instructions and questions as clearly as possible and avoiding use of field specific terminology. However, in case any terminology was used that might not have been understandable for all, those terms were explained to avert respondents having to provide uninformed responses. (Saunders, 2007, p. 359)

The selected questionnaire method could be considered to increase reliability of the study, as it has been found that respondents answering to self-administered questionnaire are very likely to provide honest answers, due that they are taking the survey independently and often anonymously. However, it must be acknowledged that respondents do have the opportunity to discuss the survey content with someone else, which might bias their original opinions. (Saunders, 2007, p. 359)

Internal consistency has been presented as one of the most common approaches to evaluating reliability. Internal consistency allows measurement of consistency of the responses across the questions included in the questionnaire. (Saunders, 2007, p. 367) In this survey Cronbach's Alpha was utilized for measuring the reliability and internal consistency of construct variables in SPSS. Construct variables were formed by calculating the means for those items that are measuring the same scale. Cronbach's Alpha for each composite variable is shown in table 7.

**Table 7.** Reliability statistics for composite variables.

<b>Composite variable</b>	<b>N of items</b>	<b>Cronbach's Alpha</b>
Conative processes	5	0.718
Cognitive processes	3*	0.613
Affective processes	4	0.643
PCE (Perceived consumer effectiveness)	3*	0.649
Green products availability	3*	0.756
Green purchase intention	4	0.741
Green purchase behaviour	4	0.857
Power distance	3	0.674
Individualism	3	0.704
Masculinity	3	0.600
Uncertainty avoidance	3	0.745
Long term orientation	2*	0.601

Threshold value for Cronbach's Alpha is  $>0.7$ . In this study six composite variables exceeded  $>0.7$  with higher values, making those variables' measurement instrument reliable. The rest of the variables, except for indulgence, were all close to 0.7 with values  $\geq 0.6$ .

Composite variables that initially had relatively low reliability values presented in Cronbach's Alpha (marked with \* in table 6 for N of items), were modified by removing one measurement item. Removing these certain items allowed to increase internal consistency significantly. For cognitive processes variable, reliability was increased by removing Q17: *"I think choosing the new technology planes rather than using the older ones is better for the environment."* PCE (Perceived consumer effectiveness) was modified by removing Q23: *"I believe products which are labeled "green" are ensured with 100% certainty."* Green products availability increased in reliability by removing Q28: *"I would like to buy more sustainable flights but I find them too expensive."* Finally, Long term orientation increased significantly in internal consistency from 0.480 to 0.601 by removing Q53: *"It is important to give up today's fun for success in the future."*

## 7 Results and analysis

In this chapter results and analysis will be presented. Descriptive statistics will first cover understanding of the respondents' backgrounds and their division. Next, analysis is conducted by presenting the results of tested hypotheses analyzed in IBM SPSS statistics software version 28. Each hypothesis is analyzed separately, prior to concluding a summary of the results and answering research questions. Finally, this chapter will be concluded by discussing the findings, with the support of the open comments received from the survey.

### 7.1 Descriptive statistics

As previously presented, the questionnaire received altogether 202 responses: 80 responses from Finland, 85 responses from Italy and 37 responses from 22 other countries. However, only responses received from Finland and Italy were included in the data analysis, and thus the data analysis constructed of 165 responses in total.

The majority, 116 of all respondents were female (70,3%), 45 were male (27,3%) while four respondents (2,4%) preferred not to define their gender. The Finnish sample received responses from 57 (71,3%) female, 20 (25%) male, and 3 (3,8%) preferred not to define their gender. The Italian sample on the other hand consisted of 59 (69,4%) female, 25 (29,4%) male while only one (1,2%) respondent preferred not to define their gender.

Responses were received from various age groups, however most of the respondents were young adults. Out of all respondents, 60 (36,4%) were 18-25 years old, 89 (53,9%) were 26-35 years old, eight (4,8%) were 36-45 years old, five (3%) were 46-55 years old, and three (1,8%) 56-65 years old. The age division was quite similar when comparing the samples from Finland and Italy. The Finnish sample consisted of 30 (37,5%) 18-25 years old, 43 (53,8%) 26-35 years old, five (6,3%) 46-55 years old and two (2,5%) 56-65 years old respondents. The Italian sample constructed on similar division; 30 (35,3%) 18-25 years old, 46 (54,1%) 26-35 years old, eight (9,4%) 36-45 years old and one (1,2%) 56-65 years old respondent.

Overall, the respondents were well educated. 52 (31,5%) respondents had a high school degree or equivalent, which reflects the young age of respondents. 65 (39,4%) respondents had accomplished bachelor's degree, 41 (24,8%) master's degree and seven (4,2%) PhD or other advanced degree. The Finnish sample consisted of 23 (28,7%) respondents with high school degree, 40 (50%) with bachelor's degree and 17 (21,3%) with master's degree. The Italian sample had more variety, as 29 (34,1%) of respondents had high school degree, 25 (29,4%) bachelor's degree, 24 (28,2%) master's degree, and seven (8,2%) PhD or other advanced degree.

What comes to level of education, approximately half of respondents were identified as students – 78 (47,3%) respondents reported as students while eight respondents (4,8%) identified as both student and employed. 11 (6,7%) respondents were employed part time and 63 (38,2%) full time. Minority of respondents were unemployed (1,8%) or retired (1,2%). In the Finnish sample the employment percentage was clearly higher and number of students respectively lower; the sample consisted of 27 (33,8%) students, three (3,8%) respondents who were both students and employed, seven (8,8%) part time employed respondents, 40 (50%) full time employed respondents, two (2,5%) unemployed and one (1,3%) retired. Italian sample on the other hand consisted of more students; 51 (60%) respondents were students, five (5,9%) were both students and employed, four (4,7%) were employed part time, 23 (27,1%) were employed full time, one (1,2%) was unemployed and one (1,2%) retired.

**Table 8.** Descriptive statistics for control variables.

	<b>Characteristic</b>	<b>N</b>	<b>% of N</b>
<b>Gender</b>	Female	116	70,3 %
	Male	45	27,3 %
	I prefer not to say	4	2,4 %
<b>Age</b>	18-25	60	36,4 %
	26-35	89	53,9 %
	36-45	8	4,8 %
	46-55	5	3,0 %
	56-65	3	1,8 %
<b>Level of Education</b>	High school degree or equivalent	52	31,5 %
	Bachelor's degree	65	39,4 %
	Master's degree	41	24,8 %
	PhD or other advanced degree	7	4,2 %
<b>Employment status</b>	Student	78	47,3 %
	Student and employed	8	4,8 %
	Employed part time	11	6,7 %
	Employed full time	63	38,2 %
	Unemployed	3	1,8 %
	Retired	2	1,2 %
<b>Annual Gross Income</b>	None	21	12,7 %
	1-4999 €	29	17,6 %
	5000-9999 €	8	4,8 %
	10 000-14 999 €	20	12,1 %
	15 000-19 999 €	13	7,9 %
	20 000-39 999 €	30	18,2 %
	40 000-49 999 €	14	8,5 %
	50 000-59 999 €	6	3,6 %
	60 000-69 999 €	2	1,2 %
	70 000-79 999 €	2	1,2 %
	more than 100 000 €	2	1,2 %
I prefer not to say	18	10,9 %	
<b>Flying Frequency</b>	Monthly	8	4,8 %
	Yearly	110	66,7 %
	Every few years	47	28,5 %

**Table 9.** Descriptive statistics for Sample's characteristics.

	N	Min.	Max.	Mean	Std. Deviation	Skewness	Kurtosis
Age	165	2	6	2.80	.813	1.555	3.792
Gender	165	1	3	1.32	.518	1.296	.688
Level of Education	165	1	4	2.02	.859	.374	-.707
Employment Status	165	1	6	1.86	1.219	2.130	4.578
Annual Gross Income	165	1	14	5.39	3.850	1.052	.370
Flying Frequency	165	3	5	4.24	.528	.182	-.214

## 7.2 Consumers' mental attitude forming processes affecting green purchase intention

The first hypothesis suggests that all three consumer's mental attitude forming processes, namely cognitive, affective, and conative processes, all have a direct positive effect on intention of purchasing more sustainable flights. The role of all three attitude forming processes affecting purchase intention was analyzed by utilizing the multiple regression analysis.

Cognitive processes were examined by requesting the respondents to answer to four statements measuring their knowledge: (1) *I can explain the environmental impacts caused by air transportation*, (2) *I know what channels to use to calculate carbon emissions from air travel and/or purchase carbon offsets*, (3) *I know that the class of seat (business / economy) is an important factor to calculate the carbon emissions*, and (4) *I think choosing the new technology planes rather than using the older ones is better for the environment*. However, as presented previously, the fourth item was eventually removed from the final construct variable, due to it having decreased reliability of the scale. As visible in table 10, cognitive processes did not predict intention of purchasing more sustainable flights ( $p$ -value > 0.05) in either Finland or Italy.

Conative processes of respondents were assessed five statements investigating their previous behavior and experiences when purchasing flights: (1) *I have taken environmental aspects into consideration*, (2) *I have been offered the possibility to pay for carbon offset as part of my*

*purchase, (3) I have paid for carbon offset, (4) I have used emission calculator, and (5) I have familiarized myself with the airlines' sustainability initiatives.* Respondents' conative mental processes was found to predict intention of purchasing more sustainable flights in both countries, significantly in Finland ( $p$ -value  $> 0.05$ ) and very significantly in Italy ( $p$ -value  $> 0.01$ ).

Finally, affective processes were evaluated with asking respondents to measure four emotion and feeling related statements: (1) *I feel concern towards environmental effects caused by air traffic, (2) I feel angry when they learn about the emissions generated from air traffic, (3) I feel interested in airlines that engage in promoting sustainability, and (4) I think positively of environmentally responsible airlines.* Results show that respondents affective mental processes predict intention of purchasing more sustainable flights in both Finland and Italy on extremely significant level ( $p$ -value  $> 0.001$ ).

**Table 10.** Regression analysis for consumer's mental attitude forming processes (cognitive, conative, affective) affecting green purchase intention.

	Variable	B	Std. error	$\beta$	t	p
<b>Finland</b>	Cognitive Processes	-.114	.110	-.115	-1.035	.304
	Conative Processes	.292	.130	.267	2.252	.027
	Affective Processes	.490	.131	.396	3.740	<.001
<b>Italy</b>	Cognitive Processes	-.086	.089	-.090	-.966	.337
	Conative Processes	.333	.107	.292	3.120	.003
	Affective Processes	.480	.099	.454	4.860	<.001

### 7.3 Relation between green purchase intention and behavior

The second hypothesis revolved around the relationship between green purchase intention and green purchase behavior, hypothesizing that green purchase intention will have a positive influence on expected green purchase behavior.

Green purchase intention was measured with four statements: (1) *I am willing to pay more for a flight that is producing less emissions, (2) I think in the future emissions calculator might*

have an impact on my travel plans, (3) I would like to include flight taxation as part of taxes, and (4) I plan to pay for offsetting my carbon footprint the next time I'm booking a flight.

Green purchase behavior was similarly measured with four different statements: (1) *When purchasing flights, I switch to other airlines for ecological reasons*, (2) *Regardless of the price, I usually purchase flights based on the impact it has on the environment*, (3) *I make a special effort to buy more sustainable flights*, and (4) *When I make a choice between flights, I aim to purchase the ones that are less polluting*.

Pearson's correlation test proves that there is extremely significant positive correlation between variables. Thus, it can be concluded that in both Finland and Italy, green purchase intention predicted green purchase behavior ( $p$ -value < 0.05) on a statistically significant level.

**Table 11.** Correlation between green purchase intention and green purchase behavior.

	<b>N</b>	<b>r</b>	<b>r<sup>2</sup></b>	<b>p</b>
<b>Finland</b>	80	.584**	0.341	<.001
<b>Italy</b>	85	.449**	0.201	<.001

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## 7.4 Perceived consumer effectiveness

The third hypothesis predicted that the perceived consumer effectiveness would moderate the relationship between the green consumption intention and the actual behavior such that when consumers believe that their green consumption behavior is more effective in achieving their environment and society goals, the positive relationship between the intention and the actual behavior becomes stronger. Respondents perceived consumer effectiveness was eventually measured with three items: (1) *I am confident my green consumption behavior can have a positive impact on the environment*, (2) *It is worthless for the individual consumer to do anything about pollution*, and (3) *Since one person cannot have any effect upon pollution and natural resource problems, it doesn't make any difference what I do*. The fourth claim "I

*believe products which are labeled “green” are ensured with 100% certainty”* was removed from the analysis to increase reliability of the construct variable.

Regression analysis with perceived consumer effectiveness as moderator was executed. It was found that there was no significant moderation ( $p > 0.05$ ) with perceived consumer effectiveness as moderator between relationship of green purchase intention and green purchase behavior in either Finland ( $p = .410$ ) or Italy ( $p = .440$ ).

**Table 12.** Regression model with perceived consumer effectiveness as moderator predicting green purchase behavior.

		<i>b</i>	SE B	t	<i>p</i>	<i>r</i> <sup>2</sup>
<b>Finland</b>	<b>Constant</b>	1.733	2.324	.746	.458	
	<b>Intention</b>	.041	.697	.059	.954	
	<b>PCE</b>	-.449	.573	-.783	.436	
	<b>Intention x PCE</b>	.142	.171	.829	.410	0.40
	<b>Age</b>	.002	.093	.024	.981	
	<b>Income</b>	.027	.025	1.078	.285	
	<b>Employment status</b>	.136	.070	1.934	.057	
<b>Italy</b>	<b>Constant</b>	-.988	1.883	-.525	.601	
	<b>Intention</b>	.965	.624	1.548	.126	
	<b>PCE</b>	.392	.456	.859	.393	
	<b>Intention x PCE</b>	-.115	.148	-.776	.440	0.22
	<b>Age</b>	.110	.135	.814	.418	
	<b>Income</b>	-.011	.023	-.473	.637	
	<b>Employment status</b>	-.035	.070	-.499	.619	

## 7.5 Availability of more sustainable flights

The fourth hypothesis predicted that the availability of green products would moderate the relationship between the green consumption intention and the actual behavior such that the more the green products are available, the stronger the positive relationship between the intention and the behavior. Green products availability was assessed by requesting the respondents to evaluate the following four claims (1) *I do not know how to purchase more sustainable flights*, (2) *There is no information available on sustainable options on the website that I usually purchase flights*, (3) *I would like to buy more sustainable flights but I find them too expensive*, and (4) *I would like to buy more sustainable flights but there is not enough*

*information available*. The results for the last claim were not included in the analysis due to its decreasing impact on reliability.

Regression analysis was conducted with green products availability as moderator. It was found that in Finland there was nearly significant moderation ( $p = 0.078$ ) with green products availability as moderator between relationship of green purchase intention and green purchase behavior. However, in Italy there was no statistically significant moderation ( $p = 0.966$ ).

**Table 13.** Regression model with availability of green products as moderator predicting green purchase behavior.

		<i>b</i>	SE B	t	<i>p</i>	<i>r</i> <sup>2</sup>
<b>Finland</b>	<b>Constant</b>	-1.827	1.239	-1.475	.144	
	<b>Intention</b>	1.257	.369	3.404	.001	
	<b>Availability</b>	.657	.427	1.539	.128	
	<b>Intention x Availability</b>	-.227	.127	-1.787	.078	0.42
	<b>Age</b>	-.053	.096	-.551	.584	
	<b>Income</b>	.037	.025	1.524	.132	
	<b>Employment status</b>	.140	.069	2.034	.046	
<b>Italy</b>	<b>Constant</b>	.365	.985	.370	.712	
	<b>Intention</b>	.438	.306	1.431	.156	
	<b>Availability</b>	.109	.318	.342	.733	
	<b>Intention x Availability</b>	.004	.099	.043	.966	0.22
	<b>Age</b>	.102	.134	.761	.449	
	<b>Income</b>	-.004	.023	-.167	.868	
	<b>Employment status</b>	-.033	.070	-.471	.639	

## 7.6 Impact of cultural dimensions to the relationship between green purchase intention and behavior

The fifth hypothesis predicted that the different cultural dimensions would moderate the relationship between the green consumption intention and the actual behavior. The fifth hypothesis was divided into six sub-hypotheses, each measuring the impact of one cultural dimension. Regression analysis was cultural dimension as moderator was utilized for

measuring the impact of each cultural dimension. Each cultural dimension was measured with three statements on five-point Likert scale from “strongly disagree” to “strongly agree”.

### 7.6.1 Power distance

Hypothesis H5a predicted that the more the consumer relates to high power distance, the stronger the positive relationship between the intention and the behavior. Power distance was measured with following three statements: (1) *People in higher positions should make most decisions without consulting people in lower positions*, (2) *People in lower positions should not disagree with decisions by people in higher positions*, and (3) *People in higher positions should not delegate important tasks to people in lower positions*.

Regression model with power distance as moderator demonstrates that there was no significant moderation ( $p > 0.05$ ) between relationship of green purchase intention and green purchase behavior in either Finland ( $p = .345$ ) or Italy ( $p = .192$ ).

**Table 14.** Regression model with power distance as moderator predicting green purchase behavior.

		<i>b</i>	SE B	t	<i>p</i>	<i>r</i> <sup>2</sup>
<b>Finland</b>	<b>Constant</b>	1.908	.268	7.129	.000	
	<b>Intention</b>	.621	.099	6.249	.000	
	<b>Power Distance</b>	.132	.108	1.218	.227	
	<b>Intention x Power Distance</b>	-.162	.171	-.951	.345	.41
	<b>Age</b>	.014	.092	.147	.883	
	<b>Income</b>	.020	.025	.802	.425	
	<b>Employment status</b>	.134	.070	1.921	.059	
<b>Italy</b>	<b>Constant</b>	2.253	.337	6.692	.000	
	<b>Intention</b>	.472	.114	4.158	.000	
	<b>Power Distance</b>	.041	.099	.413	.681	
	<b>Intention x Power Distance</b>	.196	.149	1.317	.192	.23
	<b>Age</b>	.090	.134	.668	.506	
	<b>Income</b>	-.008	.022	-.341	.734	
	<b>Employment status</b>	-.046	.069	-.660	.511	

### 7.6.2 Individualism

Hypothesis H5b predicted that collectivism would moderate the relationship between green consumption intention and actual behavior such that the more the consumer relates to collectivism, the stronger the positive relationship between the intention and the behavior. Three statements were presented to measure and find out whether the consumers related more to collectivism or individualism: (1) *Individuals should sacrifice self-interest for the group*, (2) *Group success is more important than individual success*, and (3) *Individuals should only pursue their goals after considering the welfare of the group*.

Regression analysis with collectivism as moderator was conducted. The results show that there was no statistically significant moderation in either Finland ( $p = .981$ ) nor Italy ( $p = .632$ ).

**Table 15.** Regression model with collectivism as moderator predicting green purchase behavior.

		<i>b</i>	SE B	t	<i>p</i>	<i>r</i> <sup>2</sup>
<b>Finland</b>	<b>Constant</b>	1.879	.277	6.776	.000	
	<b>Intention</b>	.623	.104	6.014	.000	
	<b>Collectivism</b>	-.038	.109	-.350	.727	
	<b>Intention x Collectivism</b>	.003	.138	.024	.981	.39
	<b>Age</b>	.001	.093	.005	.996	
	<b>Income</b>	.031	.025	1.239	.220	
	<b>Employment status</b>	.135	.071	1.896	.062	
<b>Italy</b>	<b>Constant</b>	2.195	.356	6.174	.000	
	<b>Intention</b>	.507	.118	4.289	.000	
	<b>Collectivism</b>	.017	.122	.139	.890	
	<b>Intention x Collectivism</b>	.066	.137	.480	.632	.21
	<b>Age</b>	.109	.143	.760	.450	
	<b>Income</b>	-.007	.026	-.311	.757	
	<b>Employment status</b>	-.050	.076	-.656	.514	

### 7.6.3 Masculinity

Hypothesis H5c predicted that femininity would moderate the relationship between green consumption intention and actual behavior such that the more the consumer relates to femininity, the stronger the positive relationship between the intention and the behavior.

Three statements were presented to measure and find out whether the consumers related more to masculinity or femininity: (1) *It is more important for men to have a professional career than it is for women*, (2) *Men usually solve problems with logical analysis; women usually solve problems with intuition*, and (3) *There are some jobs that a man can always do better than a woman*.

Regression analysis with masculinity as moderator was conducted. The results show that there was no statistically significant moderation in either country, Finland ( $p = .231$ ) nor Italy ( $p = .494$ ).

**Table 16.** Regression model with masculinity as moderator predicting green purchase behavior.

		<i>b</i>	SE B	t	<i>p</i>	<i>r</i> <sup>2</sup>
<b>Finland</b>	<b>Constant</b>	1.837	.271	6.792	.000	
	<b>Intention</b>	.617	.102	6.067	.000	
	<b>Masculinity</b>	-.058	.102	-.568	.572	
	<b>Intention x Masculinity</b>	-.167	.138	-1.209	.231	.41
	<b>Age</b>	.017	.095	.184	.855	
	<b>Income</b>	.027	.025	1.109	.271	
	<b>Employment status</b>	.134	.070	1.905	.061	
<b>Italy</b>	<b>Constant</b>	2.163	.346	6.245	.000	
	<b>Intention</b>	.528	.116	4.565	.000	
	<b>Masculinity</b>	.023	.150	.152	.880	
	<b>Intention x Masculinity</b>	-.110	.161	-.687	.494	.21
	<b>Age</b>	.117	.138	.847	.400	
	<b>Income</b>	-.006	.023	-.277	.782	
	<b>Employment status</b>	-.043	.071	-.610	.544	

#### 7.6.4 Uncertainty avoidance

Hypothesis H5d predicted that low uncertainty avoidance would moderate the relationship between green consumption intention and actual behavior such that the more the consumer relates to low uncertainty avoidance, the stronger the positive relationship between the intention and the behavior. Three statements were presented to measure and find out whether the consumers related more to low uncertainty avoidance: (1) *It is important to*

*closely follow instructions and procedures, (2) Rules and regulations are important because they inform me of what is expected of me, and (3) Standardized work procedures are helpful.*

Regression analysis with low uncertainty avoidance as moderator was conducted and the results indicate that there was no statistically significant moderation in Finland ( $p = .560$ ) nor Italy ( $p = .980$ ).

**Table 17.** Regression model with uncertainty avoidance as moderator predicting green purchase behavior.

		<i>b</i>	SE B	t	<i>p</i>	r <sup>2</sup>
<b>Finland</b>	<b>Constant</b>	1.859	.272	6.835	.000	
	<b>Intention</b>	.623	.104	5.987	.000	
	<b>Uncertainty Avoidance</b>	-.171	.162	-1.056	.295	
	<b>Intention x Uncertainty Avoidance</b>	-.126	.215	-.585	.560	.40
	<b>Age</b>	.002	.093	.018	.986	
	<b>Income</b>	.031	.025	1.242	.218	
	<b>Employment status</b>	.149	.071	2.102	.039	
<b>Italy</b>	<b>Constant</b>	2.167	.338	6.416	.000	
	<b>Intention</b>	.511	.113	4.525	.000	
	<b>Uncertainty Avoidance</b>	.066	.110	.599	.551	
	<b>Intention x Uncertainty Avoidance</b>	-.003	.122	-.025	.980	.21
	<b>Age</b>	.121	.136	.885	.379	
	<b>Income</b>	-.008	.023	-.353	.725	
	<b>Employment status</b>	-.045	.071	-.635	.528	

### 7.6.5 Long-term orientation

Hypothesis H5f predicted that long-term orientation would moderate the relationship between green consumption intention and actual behavior such that the more the consumer relates to long-term orientation, the stronger the positive relationship between the intention and the behavior. Three statements were presented to measure and find out whether the consumers related more to long-term orientation: (1) *Careful management of money (Thrift) is important*, (2) *It is important to do long-term planning*, and (3) *It is important to give up today's fun for success in the future*.

Regression analysis with long-term orientation as moderator was conducted. The results show that there was no statistically significant moderation in either Finland ( $p = .196$ ) nor Italy ( $p = .338$ ).

**Table 18.** Regression model with long-term orientation as moderator predicting green purchase behavior.

		<i>b</i>	SE B	t	<i>p</i>	r <sup>2</sup>
<b>Finland</b>	<b>Constant</b>	1.837	.270	6.817	.000	
	<b>Intention</b>	.601	.102	5.917	.000	
	<b>Long-Term Orientation</b>	-.031	.146	-.211	.834	
	<b>Intention x Long-Term Orientation</b>	.228	.175	1.304	.196	.41
	<b>Age</b>	.019	.093	.205	.838	
	<b>Income</b>	.025	.025	.991	.325	
	<b>Employment status</b>	.141	.070	2.015	.048	
<b>Italy</b>	<b>Constant</b>	2.177	.337	6.465	.000	
	<b>Intention</b>	.499	.114	4.368	.000	
	<b>Long-Term Orientation</b>	-.025	.128	-.198	.844	
	<b>Intention x Long-Term Orientation</b>	.151	.156	.965	.338	.22
	<b>Age</b>	.103	.135	.762	.449	
	<b>Income</b>	-.006	.022	-.260	.800	
	<b>Employment status</b>	-.036	.070	-.516	.608	

## 7.7 Summary of findings

This study was conducted to answer the following research questions:

- 1) *How does attitude towards more sustainable consumption of flights affect the purchase intention among Finnish and Italian consumers?*
- 2) *Does sustainable purchase intention predict the actual purchase behavior of flights?*
- 3) *What are the factors affecting the more sustainable purchase intention-behavior gap?*
- 4) *Do cultural factors have a role in affecting the more sustainable intention-behavior gap?*

Based on the theoretical framework, hypotheses were created to enable responding to the research questions and targets of the study. Summary of findings is reflected in table 19.

**Table 19.** Summary of findings.

<b>Hypotheses</b>		<b>Finland</b>	<b>Italy</b>
<b>H1a</b>	Consumers' cognitive processes, namely environmental knowledge and beliefs have a direct positive effect on the intention of purchasing more sustainable flights.	Rejected	Rejected
<b>H1b</b>	Consumers' affective responses towards environmental issues have a direct positive effect on intention of purchasing more sustainable flights.	Supported	Supported
<b>H1c</b>	Consumers' conative responses reflecting previous sustainable purchase behavior have a direct positive effect on intention of purchasing more sustainable flights.	Supported	Supported
<b>H2</b>	Sustainable purchase intention will have a positive influence on expected more sustainable purchase behavior.	Supported	Supported
<b>H3</b>	The perceived consumer effectiveness moderates the relationship between the sustainable purchase intention and the actual behavior such that when consumers believe their sustainable purchase behavior has an impact on the environment, the positive relationship between the intention and the actual behavior becomes stronger.	Rejected	Rejected
<b>H4</b>	The availability of green products moderates the relationship between the sustainable purchase intention and the actual behavior such that the more the eco-friendlier flights are available, the stronger the positive relationship between the intention and the behavior.	Partially supported	Rejected
<b>H5a</b>	Power distance moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to high power distance, the stronger the positive relationship between the intention and the behavior.	Rejected	Rejected
<b>H5b</b>	Collectivism moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to collectivism, the stronger the positive relationship between the intention and the behavior.	Rejected	Rejected
<b>H5c</b>	Femininity moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to femininity, the stronger the positive relationship between the intention and the behavior.	Rejected	Rejected
<b>H5d</b>	Low uncertainty avoidance moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to low uncertainty avoidance, the stronger the positive relationship between the intention and the behavior.	Rejected	Rejected
<b>H5e</b>	Long-term orientation moderates the relationship between green consumption intention and actual behavior such that the more the consumer relates to long-term orientation, the stronger the positive relationship between the intention and the behavior.	Rejected	Rejected

The first research question can be responded with results achieved from hypotheses 1a, 1b and 1c. Thus, the result is that both, consumers' affective responses towards environmental

issues as well as conative responses reflecting previous sustainable purchase behavior have a direct positive effect on intention of purchasing more sustainable flights in both Finland and Italy. However, according to the results, consumers' cognitive processes, namely environmental knowledge and beliefs do not have a direct positive effect on the intention of purchasing more sustainable flights.

The second research question aimed to find out whether sustainable purchase intention predicts the actual purchase behavior when purchasing flights. Hypothesis 2 was formed to assist responding this question – since the hypothesis was supported, it is concluded that sustainable purchase intention does have a positive influence on expected more sustainable purchase behavior among both Finnish and Italian consumers.

The third research question was targeted to be answered with the results achieved from hypotheses 3 and 4, with an attempt to close the intention-behavior gap. According to the results, perceived consumer effectiveness does not affect the more sustainable purchase intention-behavior gap in either Finland or Italy. However, it was found that among Finnish consumers the availability of green products does have a moderating effect on the relationship between the sustainable purchase intention and the actual behavior such that the more the eco-friendlier flights are available, the stronger the positive relationship is between the intention and the actual behavior.

Finally, the hypotheses 5a, 5b, 5c, 5d and 5e were formulated to support responding the fourth research question. The results propose that cultural factors do not have a moderating role in affecting the more sustainable intention-behavior gap in either Finland or Italy.

## **7.8 Discussion of findings**

In addition to the quantitative data collected with the support of five-point Likert scale measurement, the survey also offered an opportunity for the respondents to reflect their thoughts on the subject more comprehensively in open comments section. When providing open comments, the respondents could discuss anything concerning more sustainable air

traveling. However, five supporting questions were offered as examples of themes they could reflect more closely on.

81 respondents out of 165 total survey participants provided open comments as part of their responses. This equals to 49% response rate in the open comments -section, as it was the only field that was not mandatory to respond to.

The open comments received were found considerably significant for this research, as the qualitative data enabled more profound understanding of the consumers' purchase behavior related to more sustainable air travelling. Furthermore, the open comments support in explaining the findings for the supported and the rejected hypotheses. The below sections will discuss the main observations that might contribute to the results of this research; lack of available information, willingness to pay, perceived consumer effectiveness, green washing, need for decreasing flying, alternatives for flying, and responsibility.

### **7.8.1 Lack of available information**

In the open comments a topic that was explicitly raised most by the respondents, was lack of available information concerning more sustainable flights and compensation of flights' emissions as an example. The responses reflected that the information is not easily accessible, rather the respondents felt that it would require a lot of time and effort to research the more sustainable options if they wanted to purchase them. Lack of available information is highly linked to fourth hypothesis, which predicted that green products availability would moderate the relationship between the green consumption intention and the actual behavior such that the more the green products are available, the stronger the positive relationship between the intention and the behavior. The four examples of respondents' responses below reflect that if the consumers don't find information on the options for more sustainable flying, they must not know how to purchase them.

*“There is definitely not enough information for an individual leisure traveler about emission impact caused by his/her trip or sustainable options.”*

*"I don't think there is enough information about sustainable flight offering and most of all about how the extra money I'm paying are being used to support a genuine sustainability of the flights."*

*"I hope that there will be easy-to-access information while booking the flights since sadly I also feel like this is something I'm not willing to pay a lot of attention and time."*

*"I never heard about an emission calculator in terms of air traffic and that this is something everybody can use. Now I am questioning myself, if I am not interested enough of this topic or isn't there not enough information available?"*

### **7.8.2 Willingness to pay**

Another perspective that was one of the most discussed themes, was higher pricing of more sustainable flights and willingness to pay. Similarly, as the above discussed availability of information, willingness to pay is highly interacting with the fourth hypothesis and green products availability: when there is not enough information of more sustainable flights, consumers are not willing to pay for the products which they don't have enough knowledge of.

*"Just paying more for the same tickets to make it sustainable doesn't in idea sound like the best solution, because how are we then guaranteed that the money will go to the right purpose."*

The responses also reflected that willingness to pay for more sustainable flights is clearly lower when the price is not included in the price, but it's somethings optional that can be purchased by paying an additional fee. In other words, willingness to pay for more sustainable flights would presumably be remarkably higher if the prices were increased as mandatory part of the ticket for all, and it would not be something that needs to be purchased separately.

*“It’s all about the cost. If I can choose to pay more for sustainability, I won’t. If it’s mandatory, I have no choice but to pay.”*

*“I think it is unrealistic to expect that every consumer would be able and willing to pay more for something that is already very expensive if they are given the choice not to do so.”*

### **7.8.3 Perceived consumer effectiveness**

Another aspect that could be identified from the respondents’ open comments, was the fact that many of the respondents did not believe their decisions would make an impact, even if they intended to purchase more sustainable flights. The responses showed that PCE might have a strong connection with the availability of information. As the below examples from respondents reflect, the perceived consumer effectiveness appear lower if the consumers don’t have enough information on the more sustainable products. Since the consumers are not aware about the benefits of selecting more sustainable options, it's difficult for them to believe they could have an impact.

*“When the option is given to compensate emissions when purchasing a flight, I never do it, because I doubt it actually makes an impact.”*

*“I do not recall seeing many advertisements for sustainable flights. This made me wonder if there even are more sustainable flights, or if the sustainable flights even make a significant difference. There has been some CO2 compensation options, but no explanation where that money actually goes to.”*

As part of perceived consumer effectiveness, some respondents also felt that their purchase decisions wouldn’t have an influence, if they were taking flights only on rare occasions compared to other consumers. In other words, the consumers explained their purchase behavior by appealing to flying frequency – they felt that if they were taking flights only on rare occasions, the amount of the harm wouldn’t make a difference.

*“I do not take in consideration the sustainability connected to air travelling since I use planes maximum twice a year.”*

On the contrary, some of the respondents did believe their decisions would have an impact, yet the difference would be made if all other consumers would understand to behave the same way.

*“I think my decisions have a positive impact on the environment and if all other people thought the same, we would prevent the climate change.”*

#### **7.8.4 Green washing**

Green washing has strong connection to above discussed PCE, which might have played a relevant role in explaining the results for third hypothesis. Many of the respondents raised the concept of green washing, expressing that they don't believe that options for more sustainable flights exist. Instead, green washing is believed to take advantage of the concept of sustainability as a tool for attracting consumers who want to purchase more green products. The below examples from respondents represent how consumers might even avoid the offering of more sustainable products, if they predict that the company offering the products is utilizing green washing.

*“The only sustainable way to fly, is not flying at all. All the rest is just greenwashing.”*

*“The very concept of sustainable air travel seems a bit green washed, since we should recognize the fact that air travel always causes pollution and is in no means “green”.”*

#### **7.8.5 Need for decreasing flying**

Another aspect that might have impacted the results of the third hypothesis testing the moderating effect of PCE, is the respondents' suggestion on reformulating the problem statement: the problem is not how people can purchase more sustainable flights, but rather that how can the amount of flying be decreased. When consumers don't believe in the

concept of more sustainable flights, they presumably don't want to purchase them, and might rather avoid flying completely or decrease the frequency of it.

*"I believe offsetting should not be considered as the ultimate solution for climate change, when in fact, the problem is that we are simply polluting too much. The pollution source should be fixed and only after that the remaining emissions be offsetted."*

*"I'm also not a big fan of "compensating" our emissions since this does not fix the problem which is that we simply live unsustainably. A real solution would be to reduce air travel. Compensating can lead us to think it is okay to fly as much as we want without harming the environment as long as we pay the compensation fee."*

### **7.8.6 Alternative for flying**

Many of the respondents raised alternatives for flying, such as train. Respondents also highlighted that people could plan the trips in an efficient way, so that as few transportations by flying as possible would be required. The third hypothesis of PCE might be affected by the alternatives for flying, as it can be expected that consumers who prefer alternatives for flying, might not believe that their purchase behavior has relevant impact when purchasing more sustainable flights. The alternatives for flying might also affect on the fourth hypothesis of green products availability; when there is not enough availability of more sustainable flights, consumers are more likely to consider alternatives for flying.

*"I feel like air travel is essential for long-distance travel but should be banned whenever there is an alternative in a short-distance travel (trains/other)."*

*"I hope that in the future we all will fly less but plan our trips smarter. Luckily for example remote work will help with this: in business many things can be done via Zoom etc. so flying isn't always necessary."*

### **7.8.7 Responsibility**

The final aspect that might have affected to the results of all moderating effects, namely hypothesis three, four and five, is responsibility. Many respondents explained their frustration on the matter; individual consumers do not want to take responsibility on environmental

decisions, as they consider it to be something that should be regulated by the government. According to the responses, consumers also expect airline companies to take more responsibility on the environmental questions and offering more sustainable flights for all. This result highly supports previous research conducted by Hooper et al. (2008). Their study concluded very similar results; passengers do not find themselves as responsible for the environmental impacts caused by the emissions that flying generates, as they believe that the problem should be solved by the respective governments or the airlines.

*“Individuals can make a difference and impact, but it should not be the responsibility of consumers, but the change should happen on governmental level.”*

*“I think that sustainable flight travel should be a norm, not something you buy as extra or is the traveler’s responsibility. An environmental compensation should be included in the ticket already and not for everyone to buy separately; that never works. This could actually make an impact on the environment.”*

*“Sustainable flights and/or CO<sub>2</sub>-compensation should be introduced by law, not left to the individual's ecological conscience.”*

## 8 Discussion and conclusion

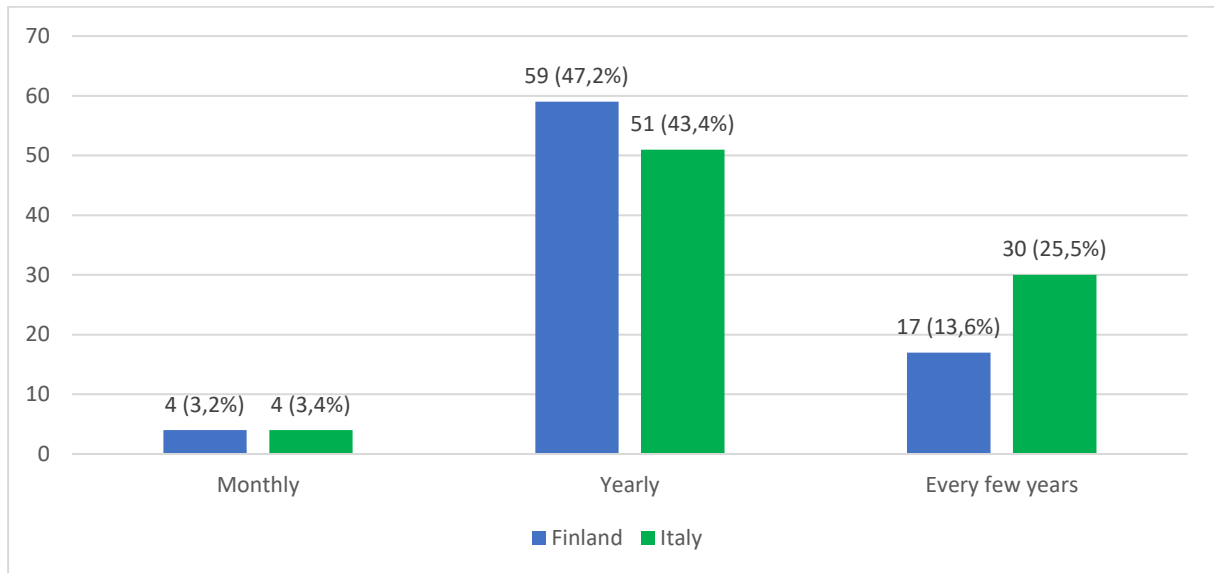
The aim of this research was to examine greener consumption of flights among Finnish and Italian consumers, by analyzing the effects of attitude towards purchase intention as well as the factors affecting the intention-behavior gap. In this final chapter, the summary of key findings will be presented by first providing a country comparison of results between Finnish and Italian consumers. Furthermore, key contributions of the study will be introduced in light of the established theoretical background. Additionally, some practical and managerial implications of the study will be discussed. Finally, limitations of the study will be recognized to provide guidance and suggestions for future research.

### 8.1 Cross-country analysis

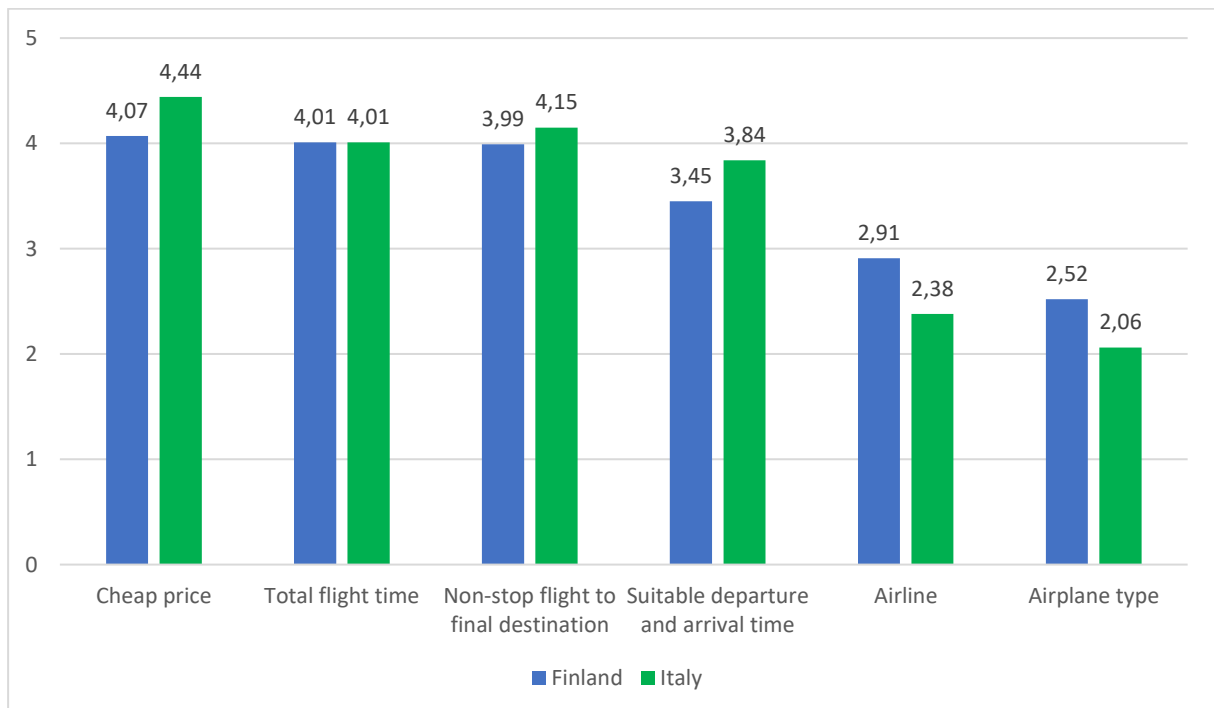
This section provides a cross-country analysis on the findings, by comparing the results from Finland and Italy. Meanwhile many similarities can be found between the two countries, some differences can also be identified. Although findings from this research is based on a data collected from only Finnish and Italian consumers, the results may be reflective of countries that have similar socio-economic characteristics.

First, comparison is made on the flying habits between the respondents from the two countries. Overall, the flying habits were very similar in both Finland and Italy. In both countries most of the respondents tend to travel by flying on yearly basis, or by every few years, while only few respondents fly very frequently on monthly basis (see figure 9). Purpose for traveling among respondents in both countries is mainly leisure – only 6% of respondents in Finland and 13% of respondents in Italy take flights also for business. When measuring the importance of different factors while booking a flight (see figure 10), in both countries cheap price was found to be the most important factor affecting the respondents purchase decision. When examining the means of the countries, the results show that the difference in importance of cheap price between Finland and Italy is very significant ( $p$ -value < 0.05). Other factors that were found important in both countries were total flight time, non-stop flight to

final destination and suitable departure and arrival time, out of which the final factor was shown to reflect significant difference between the two countries ( $p$ -value < 0.05). Neither airline nor airplane type were found as remarkable factors affecting purchase decision. However, airline showed the difference of the means as extremely significant ( $p$ -value < 0.001) and airplane type very significant ( $p$ -value < 0.01).



**Figure 9.** Flying frequency between Finnish and Italian respondents.



**Figure 10.** Importance of different factors when booking a flight (1 = not important, 5 = very important).

Secondly, it is relevant to discuss the countries' conative-, cognitive-, and affective mental attitude forming processes, that impact on the green purchase intention and finally green purchase behavior. The results for conative processes measuring the respondents' behavior reflect that on average, neither Finnish nor Italian consumers have taken environmental aspects into consideration in their past experiences on flying on considerable matters. The difference in conative mental processes between the countries is significant ( $p$ -value < 0.05). What comes to cognitive processes, the respondents in both countries are lacking knowledge on the environmental aspects related to flying, which evidently affects their final purchase behavior. However, compared to Italian respondents, the Finnish respondents reflected slightly higher knowledge on the sustainability factors related to flying. The difference on cognitive mental processes between respondents from Finland and Italy is extremely significant ( $p$ -value < 0.001). Out of the three mental attitude forming processes, the respondents related clearly most with the affective processes, measuring emotions, and feeling. Most of the respondents in both countries reflected concern towards environment, felt anger towards emissions generated from flying, while finding interest towards airlines engaging in promoting sustainability.

Furthermore, when measuring the green purchase intention and green purchase behavior of respondents, the findings are very similar in both Finland and Italy. As the results show, the intention-behavior gap was evident when purchasing flights: large group of respondents reflected green purchase intention (39% of respondents in Finland and 43% of respondents in Italy) while only a small group of respondents reflected green purchase behavior (10% of respondents in Finland and 14% of respondents in Italy).

The contextual conditions of PCE and green product availability were targeted to measure whether these factors would moderate the relationship between the green consumption intention and the actual behavior such that when consumers believe that their green consumption behavior is more effective in achieving their environment goals as well as the more the green products are available, the positive relationship between the intention and the actual behavior would become stronger. The measured PCE was surprisingly high for both countries, as most of the respondents reflected to feel confident that their personal green consumption behavior could have a positive impact on the environment. Nevertheless,

unfortunately no moderating effect was found for PCE between green purchase intention and behavior. The results for green products availability reflected that in both countries, respondents felt unsure how to purchase more sustainable flights and where they could find more information about it. The difference in green products availability between the countries was found very significant ( $p$ -value < 0.01). When comparing the findings, a minor moderating effect was found for green products availability between green purchase intention and green purchase behavior in Finland. However, in Italy, no moderating effect was found.

**Table 20.** Cross-country comparison of measured variables between Finland and Italy.

	Measurement scale	Measured variables	Mean in Finland	Mean in Italy	$p$ -value
Importance of different factors when booking a flight	Importance of factors (1 = not important, 5 = very important)	Cheap price	4,07	4,44	.003
		Total flight time	4,01	4,01	.996
		Non-stop flight to final destination	3,99	4,15	.244
		Suitable departure and arrival time	3,45	3,84	.016
		Airline	2,91	2,38	.001
		Airplane type	2,52	2,06	.008
Mental attitude forming processes	Relativeness to statements measuring mental processes (1 = strongly disagree, 5 = strongly agree)	Conative mental processes	2,02	1,76	.017
		Cognitive mental processes	2,93	2,44	.000
		Affective mental processes	3,87	3,76	.300
Green purchase intention & behavior	Relativeness to statements measuring purchase intention and behavior (1 = strongly disagree, 5 = strongly agree)	Green purchase intention	3,19	3,21	.857
		Green purchase behavior	2,33	2,39	.693
Contextual conditions	Relativeness to statements measuring PCE and green products availability (1 = strongly disagree, 5 = strongly agree)	Perceived consumer effectiveness	4,08	4,25	.088
		Green products availability	2,98	3,33	.009
Cultural dimensions	Relativeness to statements measuring cultural dimensions (1 = strongly disagree, 5 = strongly agree)	Power distance	2,18	2,10	.551
		Collectivism	3,19	3,36	.150
		Masculinity	1,65	1,56	.406
		Uncertainty avoidance	3,78	3,48	.004
		Long term orientation	4,00	4,05	.624

Finally, cross-country comparison will be done for cultural perspectives based on the respondents' adoption to the different dimensions. It is relevant to emphasize that the results were very close to one another in both countries. In both countries respondents identified themselves more to low power distance rather than high power distance. In both countries respondents also reflected slightly more collectivistic rather than individualistic values, even though average results on this scale were quite close to neutral. On the measured scale, respondents from both countries valued clearly more femininity rather than masculinity. Moreover, in both Finland and Italy, the respondents reflected high uncertainty avoidance and long-term orientation. The difference in uncertainty avoidance between the countries was found very significant ( $p$ -value < 0.01).

## **8.2 Theoretical contributions**

This study increases the knowledge of consumer attitudes and purchase behavior towards more sustainable flying. Contribution to the existing literature is made by covering a profound overview of sustainability in the aviation industry and by presenting the green initiatives that airlines have taken into use, as well as future predictions. Moreover, the literature gathers the sustainable initiatives available for consumers when choosing and purchasing flights.

The results generated from this research support various previous studies. First, two elements of the tri-component attitude model, namely affective and conative processes, were found to have a direct positive effect on intention of purchasing more sustainable flights. Additionally, this study identified that green purchase intention does have significant positive influence on green purchase behavior. The above-mentioned findings confirm previous theories studying the relationship between both attitude and intention as well as intention and behavior, such as the Theory of Reasoned Action by Fishbein and Ajzen (1975).

Intention-behavior gap was one of the key concepts and targets of this study. The phenomenon of intention-behavior gap has been studied by various authors, such as White et al. (2019) and Moghavvemi et al. (2015), while having gained more and more interest especially in the context of sustainable consumption. This study is in line with previous studies,

since this study confirms that only a small amount of people who show interest towards sustainable flights end up purchasing those. Even though many of the studied consumers showed sustainable intentions, most appeared to not act accordingly to those intentions.

Furthermore, closing of the intention-behavior gap has been similarly studied by multiple authors. In this study the theory of Nguyen et al. (2019) was utilized for measuring whether the contextual conditions of perceived consumer effectiveness and green products availability would moderate the relationship between the green consumption intention and the actual behavior. The results of this research confirm that green products availability has a moderating effect in a way that the more the green flights are available, the stronger the positive relationship between the intention and the behavior. While discussing about the importance of the availability of green products and thus also information in affecting the initial purchase behavior, it is relevant to highlight the theory of Pagiaslis and Krontalis (2014), presenting that lack of knowledge can vice versa prevent consumers from greener consumption. This study supports the presented theory, as the results reflected that consumers are not able to purchase the more eco-friendly flights, due that there is an immense lack of available information concerning how consumers could make an impact.

This study found out that individual consumers do not want to take responsibility on environmental decisions, as they consider it to be something that should be regulated by the government. This result highly supports previous research conducted by Hooper et al. (2008) – their study concluded with almost identical results; passengers do not find themselves as responsible for the environmental impacts caused by the emissions that flying generates, as they believe that the problem should be solved by the respective governments or the airlines.

To conclude, this study does not only support the theories from previous studies, but also brings new insights, that can better support understanding of consumers' attitudes and behavior towards more sustainable flights. When acknowledging the perspective of the consumer, sustainable offering can be more efficiently adapted to attract travelers. The insights developed in this study will be presented in the next chapter as practical and managerial implications.

### **8.3 Practical and managerial implications**

The in-depth theoretical framework constructed based on previous studies around the topic and the knowledge developed from the findings of this study offer several practical and managerial implications for managers and marketers. The implications are drawn from the findings of this thesis, that were discussed in chapter 7.8.

The first implication is made based on the finding that there is lack of available information on how consumers can do their part on flying and travelling in more environmentally friendly manner. While consumers are raising that researching information on sustainability in aviation requires too much time and effort, the proposal is that managers and marketers in aviation should develop more effective ways to communicate the sustainability initiatives that airlines have taken into use as well as the different options available for consumers. If people would have more easily accessible information, it could impact the perceived consumer effectiveness – the consumers' individual belief on whether they can make an impact with their own decisions. Providing more accurate and extensive information on sustainability could also respond to the discussion on green washing, by relinquishing flawed advertising.

The second implication suggests changes on the pricing of the flights' tickets. This is due that based on the findings, the consumers would be remarkably more willing to pay for higher prices of the tickets, if the increase was automatically included in the price by default. In other words, if people were to fly, they would always need to purchase a supplement compensation for the environmental damage flying causes.

The third implication aims to respond to the problem discussed in the literature and raised by the respondents, that with today's technology sustainable flying is simply not achievable. The findings discussed that while many consumers don't believe in the concept of sustainable flying, green consumers may rather decrease the frequency of flying or avoid it completely. A managerial implication of this finding is to increase alternative modes of transportation, such as train, and market them more efficiently.

The fifth and final implication relates to the responsibility. The findings show that consumers are in general unwilling to take responsibility on the environmental aspects related to travelling. This thesis shares comprehensive review on how both airlines and individual consumers could improve their actions towards more sustainable behavior. This implication proposes airlines and governments to take the responsibility to drive the green initiatives to better guide consumers flying habits towards more sustainable travelling.

#### **8.4 Limitations and suggestions for future research**

Several limitations need to be acknowledged in this study. First, the sample size of this study was relatively small, as it consisted of 165 responses in total, out of which 80 respondents were from Finland and 85 respondents from Italy. Around 70% of all respondents identified themselves as female, which might have affected on the results to some extent. Furthermore, around 90% of the respondents were 18-35 years old, and therefore only very small number of responses were received from other, older age groups. Due to these limitations, generalizing the findings to larger populations or contexts must be done with caution and careful consideration. Considering future research, a larger sample and better coverage of different sample characteristics would allow more reliable generalization of the results and better understanding of different customer groups with regards to greener consuming.

Furthermore, this study targeted only consumers in two European countries, Finland and Italy, and thus the findings may not be applicable to other countries. With greater resources, future research could implement cross-cultural study by including wider range of countries in the target group. Analyzing of the cultural demeanor of the Finnish and Italian consumers was done by utilizing Hofstede's theory on six cultural dimensions. Hofstede's theory was found most suitable for this study, nevertheless, with future research it is important to consider other cultural studies as well.

In this study Hofstede's theory was utilized to measure whether cultural dimensions would moderate the relationship between greener purchase intention and greener purchase behavior. This study did not investigate the direct relationship between cultural dimensions

and purchase intention and behavior, and thus it would be beneficial to research this connection in future studies with similar context.

One perspective that was not discussed in the theoretical framework but raised considerable attention in the findings from open comments was green washing. Large number of respondents shared their concern towards airlines' green washing, which is believed to take advantage of the concept of sustainability to attract those consumers who want to purchase greener flights. While the concern of green washing may have affected the findings of this study, it would be highly beneficial to conduct similar research by measuring the effect of green washing, for example as moderator between green purchase intention and green purchase behavior.

While discussing the limitations of this study, it is relevant to mention a rather recent external factor, COVID-19 pandemic, that may have impacted to the results on some level. Since December 2019, the coronavirus has caused infectious disease to spread around the world and inflicted global emergency to last for more than three years, endangering the lives and wellness of millions of individuals. (World Health Organization, 2023) For a long period of time, people were unable to travel to avoid spreading the disease, causing air travel to decline by 65.9 percent between 2019 and 2020 measured by passenger kilometers. (Richter, 2021) Recent studies indicate that the pandemic has caused a phenomenon of revenge travel. The concept of revenge travel refers to a tourism behavior, in which psychological pressure, daily routines and regulations caused by the pandemic are being escaped from by travelling. In other words, people appear to aim to make up for the lost time of staying indoors during the pandemic by travelling more carelessly. (Zaman et al., 2021, pp. 1–2) While COVID-19 pandemic might have long-standing effects on consumer behavior, it would be highly beneficial to research the impacts of revenge travelling to green purchase behavior and flying habits.

Finally, even though quantitative method could enable statistical generalization of the studied phenomenon, especially with a larger sample size, a more comprehensive qualitative study could provide profound understanding on the intention-action gap related to greener

purchasing as well as its relationship to cultural dimensions. Overall, selecting of a different research method and design of the study could provide new perspectives around the subject.

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