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An exploration into the effects of climate change on the  
ski industry and the importance of this issue to UK  
skiers

A dissertation submitted in partial fulfilment of the  
requirements for the degree of Bachelor of Arts  
(Honours) in International Tourism Management

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Declaration

“I declare that this Dissertation has not already been accepted in substance for any degree and is not concurrently submitted in candidature for any degree. It is the result of my own independent research except where otherwise stated”.

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## Abstract

An estimated 100 million people visit the Alps each year, accounting for nearly one quarter of the world's total tourism revenue. As we move into the 21<sup>st</sup> century the problems of climate change have become a clear and present danger to the ski industry. This dissertation explores what effects climate change is having on the ski industry and investigates how important the issue of climate change is to consumers within the UK ski market.

This study first explored the relevant literature and critical evaluations to the topic including the relationship between climate change and the ski industry, as well as an examination of literature in tourism decision making, in order to understand what influences and motivates people to take a ski holiday.

Then the research methodology was presented in two phases; phase 1 using secondary research to investigate the UK ski market and phase 2 using primary research methods such as questionnaires and semi structured interviews (both qualitative and quantitative data) to identify the importance of climate change to UK consumers. The results and data were then analysed and key themes were acknowledged to make a valid and reliable conclusion.

The literature suggested that climate change is causing a number of negative effects on the ski industry, most predominantly the shortening of ski seasons due to warming temperatures. The findings from the methodology concluded that UK consumers do not find the issue of climate change important when deciding to take a ski holiday, nor during their trip. Although consumers are aware of the effects climate change is having on the ski industry, they do not currently find it an important enough problem to influence their ski holiday experience.

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## Chapter 1: Introduction

There are 66 countries in the world that offer outdoor ski areas covered with snow and approximately 2,000 ski resorts have been identified worldwide. Besides the major ski destinations, in terms of quantity of skiers, there are a number of developing destinations. The most obvious new destinations are Eastern Europe and China (Vanat, 2016), but this investigation will only be concerned with UK skiers and the European Alps. The researcher acknowledges this destination to have almost a monopoly on the UK ski market and that the best findings would be those in context with this region.

The ski industry used to measure its success on the basis of revenues. When revenues were up, it was concluded that the season was good, and when they were down, one usually pointed out bad weather and snow conditions, or on occasion the global economy. However, what really happened was not exactly monitored. Over the long term, as prices steadily increased, revenues showed a trend in growth, but since the turn of the century, annual measurements of skier visits were introduced in most of the major destinations and after a few years it became obvious that it was not only a matter of good or bad economic conditions; the problem was more significant. The population was growing, but the number of skiers and skier visits remained the same. In one major destination market after the other, growth suddenly ceased. Skier visits were stagnating, if not declining (Vanat, 2016).

Most climate scientists agree that the main cause of the current global warming trend is because of the "greenhouse effect", a process which results in warming when the atmosphere traps heat radiating from Earth toward space. Certain gases in the atmosphere block heat from escaping and "Gases that remain semi-permanently in the atmosphere and do not respond physically or chemically to changes in temperature are described as 'forcing' climate change. Gases, such as water vapour, which respond physically or chemically to changes in temperature are seen as 'feedbacks'" (NASA, 2017).

On Earth, human activities are changing the natural greenhouse. Over the last century the burning of fossil fuels such as coal and oil has increased the concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere (NASA, 2017). This is due to the burning process of coal or oil that combines carbon with oxygen in the air to make CO<sub>2</sub>. To a lesser extent, the clearing of land for agriculture, industry, and other human activities have also increased concentrations of greenhouse gases (NASA, 2017).

Oreskes (2004) explains that the consequences of changes from greenhouse effects are difficult to predict, but states that certain effects seem likely. On average, Earth will become warmer, leading to more evaporation and precipitation overall, although individual regions will vary with some becoming wetter and others dryer. Furthermore, a stronger greenhouse effect will warm the oceans and partially melt glaciers and other ice, increasing the sea level. Ocean water will also expand if it warms, contributing further to a rise in sea level (Oreskes, 2004).

In a report from the Independent Police Complaints Committee (IPCC, 2014), a group of 1,300 independent scientific experts from countries all over the world under the auspices of the United Nations, concluded there's a more than 95% probability that human activities over the past 50 years have warmed our planet. The industrial activities that our modern civilization depends upon have raised atmospheric carbon dioxide levels from 280 parts per million to 400 parts per million in the last 150 years. The panel also concluded there's a better than 95% probability that human-produced greenhouse gases have caused much of the observed increase in Earth's temperatures over the past 50 years.

The effects of climate change are a clear and present danger to the ski industry, Hudson (2000, pp.121) states that “The Alps account for one quarter of the world’s total tourism revenue. An estimated 100 million people visit the Alps each year and with them have come the problems of pollution and erosion... The mountains [Alps] are among Europe’s most threatened wilderness and the rapid growth of skiing is central to this crisis”. As the winter tourism industry moves further into the 21<sup>st</sup> century it will face the increasing problem of achieving not growth, but rather quality of tourist experience that is consistent with sustaining both physical and social environments (Ryan, 1991). “Environmental awareness, however perceived, will have the greatest impact on skiing in our lifetimes, especially in the Alps” (Sager, 1996, pp.6).

It is now two decades later since Sager’s statement, yet it is agreeable that the statement is more relevant than ever. The research will look at the link between the effects of climate change on the ski industry in the Alps and the importance of this issue on UK skiers and their ski holiday decisions.

Study objectives:

An exploration into...

1. Climate change and how it's effecting the ski industry
2. UK Consumer motivations
3. How important climate change is to UK consumers
4. The future of UK ski holidays

## Chapter 2: Literature Review

### 2.0 Introduction

This chapter will discuss the literature and its themes relating to climate change and the ski industry, in particular an exploration into the negative impacts that climate change is having on ski resorts and the industry. Furthermore, the researcher will study literature in tourism decision making, to gain a better understanding of consumer motivations. It will look at books, articles, journals, and reports.

### 2.1 Climate change and the ski industry

The huge expansion of ski resorts since the 1970's has, according to 2Alpsnet (2016) had a number of effects on water levels of lakes and streams in the mountains, damaging wildlife through the destruction of habitats, as well as noise and pollution affecting annual climate conditions. 2Alpesnet (2016) also commented that high temperatures experienced during the summer of 2002 caused some of the European glaciers to recede by up to 10%, causing concern among some climate specialists that within 50 years Swiss glaciers could potentially melt away.

The increasing popularity of skiing, and therefore development of the ski industry, has created a demand for more accommodation to be built in popular resorts, but with limited space for new apartments and chalets it forces more erosion of the surrounding hillsides in order to fulfil accommodation demands (2Alpesnet, 2016). Furthermore, in order to keep up with tourist demand, ski resorts are under pressure to build more lifts that are faster and have a higher skier capacity. 2Alpesnet (2016) explains that “this improvement in resort facilities ultimately creates a 'catch 22' situation, as the number of individuals visiting the resort increases, creating pressure to improve transport links to these resorts and so the cycle continues”. As pressure mounts on the ski companies to build higher into the mountains to reach snow reliable areas, thus, sensitive high mountainous environments are ultimately being affected. The increase in global temperature will have serious implications for the many ski resorts located at lower altitudes. It is not just as simple as going higher to get more snow (2Alpesnet, 2016).

### 2.2 The Environment

The Alpine environment supports a very fragile ecosystem and human impact is felt twice as strongly there as it is lower down in the valleys. Destruction has been caused from

deforestation by the alteration of Alpine land for construction of skiing facilities and hotels, as well as the dumping of waste which has polluted nearby lakes (Hudson, 2000). When the landscape is changed, the whole ecosystem is altered. It is not just a matter of deforestation, erosion and disappearance of rare habitats, but also problems created by car pollution, litter and by the building of ski lifts, cable cars, new roads to allow coaches up the mountains and avalanche fences (Hudson, 2000).

Damage done to Alpine land for ski slopes is often permanent. The continual use of the same location and of the same runs, together with the pressure to expand ski areas has brought conflict between skiers, conservationists and locals. Many believe that the ski industry is its own worst enemy, and like many industries before, it is at risk of 'death by tourism' (Hudson, 2000).

A report into tourism and climate change (Mintel, 2012) states that due to the fact that environmental conditions are such critical factors for leisure tourism, a wide range of climate-induced environmental changes will have profound effects on tourism at the destination and regional level. Changes in water availability, biodiversity loss, reduced aesthetic appeal of landscapes, increased natural hazards and damage to infrastructure will all impact tourism to varying degrees. In contrast to the direct impacts of a changing climate on tourism, the indirect effects of climate-induced environmental change are likely to be largely negative, and mountain destinations are particularly sensitive to climate-induced environmental change (Mintel, 2012). Emissions by tourist activities are directly related to how much fossil-fuel energy is consumed, for example downhill skiing has a large carbon footprint due to the energy produced to operate the ski lifts. It is well established that many winter sports destinations are vulnerable to projected declines in natural snowfall, creating a need for an increase in artificial snow (Mintel, 2012). Environmental damage caused by tourism is being seen in changing climate patterns across the Alps, with predictions including more rain and melting glaciers that will bring erosion and floods. The implications of changes in the alpine environment can be seen by the following changes in recent years (2Alpesnet, 2016):

- poor snow records
- receding glaciers
- unusual weather patterns

The Mintel (2012) report provides more detailed examples of the effects of a warming climate in the Alps, claiming that in Switzerland only 44% of ski resorts are projected to be

above the ‘snow-reliable’ altitude (snow for 100 days per season) by approximately 2030, as opposed to 85% in 2002. In Austria, 83% of the country’s 134 ski resorts were snow-reliable as of 2007, but an increase in temperature of 1° to 2°C is projected to reduce this number to only 50%, or 67 resorts. Europe suffered poor snow conditions at the start of the 2013/14 season, with the majority of resorts in Europe witnessing a relatively dry December. While the effects of climate change on the snow sports industry are not immediate, there is substantial evidence to suggest that low-elevation resorts will suffer an increasingly short season or may even lose their snowpack altogether (Mintel, 2014). Dawson (2013) supports this theme, stating that considering global temperatures are expected to rise by more than 2.C by 2020 and by 4.C by 2050, more precipitation will fall as rain instead of snow, “ski area operators must adapt for the possibility of continuously marginal snow seasons” (Dawson, 2013, pp13).

### 2.3 Ski holidays

Increasingly unpredictable weather, again linked to climate change, could see holidaymakers holding off on choosing and booking a destination until as late as possible (Mintel, 2014). A report into winter holidays abroad (Mintel, 2016) continues to show a theme of negative impacts on the ski industry, claiming that the market continues to be impacted by poor snow conditions in the first half of the winter season (October-December), which means that the season starts later than it used to.

“After the unseasonably warm temperatures and lack of early season snow during some recent winters, global warming has been at the forefront of winter sports enthusiasts’ minds” (2Aplesnet, 2016).

### 2.4 Snow Cannons

A controversial topic recurring throughout the literature is the use of snow cannons in an effort to mitigate the effects of climate change. This method of mitigation is potentially the most obvious sign of declining snow conditions (from reasons aforementioned above) i.e. the more cannons being used, the more unreliable the snow. Artificial snow has become controversial because snow cannons spray water at great pressure into sufficiently cold air which then falls as snow on the ground, but artificial snow is much denser than natural snow and has an effect on the vegetation and melts much later than natural snow. 2Alpesnet (2016) states that European resorts have experienced a decline in rainfall over the past five years, and to counter this change in climate, ski resorts are turning to artificial snow manufacture. Snow cannons are becoming increasingly common in France, today 15% of

French ski areas are covered by the machines and millions of euros are invested in artificial snow manufacture every year, but the investment comes at a high cost to the environment (2Alpesnet, 2016). “Snow cannons use 2.8 million litres of water for each kilometre of piste” (Grabowski, 1992, p.5) and in some resorts, snow making now consumes more power over an average season than the entire lift system. Furthermore, the machines contribute hugely to noise pollution, “A single snow canon emits between 60 to 80 decibels, the equivalent of heavy traffic, which disturbs mountain wildlife” (2Alpesnet, 2016). It is estimated that snow making in France uses as much water as a town with 170,000 inhabitants.

The report into tourism and climate change (Mintel, 2012) also expressed these themes, saying that ski-season simulations show snow-making technology can maintain snow-reliable conditions in large resorts in the Alps until the 2040s to the 2050s, but by the end of the century the required production in snow volume is predicted to increase by up to 330%, according to a 2010 estimate (Mintel, 2012). Artificial snow is currently seen as the saviour of some European ski resorts; but is simply a short term answer, and since the long-term answer to the snow question is yet to be found, the debate between environmentalists and the ski industry continues (2Alpesnet, 2016).

## 2.5 Tourist Decision Making

The researcher aims to find out how important the issue of climate is to UK skiers and to do so it's believed the most effective way to represent its importance is by examining its significance during the decision making process that UK consumers take when planning a ski holiday. Literature into tourist decision making must therefore be reviewed and understood before the researcher can conduct primary research effectively.

Walters and Bergiel (1989, p.136) believe that consumer decisions are omnipresent: “there is no way that the consumer can escape making decisions”. Scholars agree that the final purchase (the product) is only the visible part of the iceberg and that it is the materialisation of a decision making process from the recognition of a need that lies below the surface (Decrop, 2006). There are a number of theories behind making a decision, the most classical being ‘problem solving’ decisions (Engel et al, 1973) the most popular approach with a basic assumption that a consumer’s need or desire creates a problem within the individual and the consumer solves said problem by deciding on a course of action in order to satisfy the need or desire. This process consists of these typical steps; recognizing a need, searching for information, evaluation of alternatives, purchase and outcome (Decrop, 2006). However in

current markets with the presence of new technologies and competitive pressures, the decision making process has evolved. Bettman et al (1998) first recognised this change, stating that consumers are now often confronted with a large number of alternatives and are overwhelmed with information from many sources (i.e. friends, family, the internet and advertising) leading to an uncertainty of products and difficult trade-offs like price vs quality. This evolution of consumer decision making has brought about more modern decision making theories such as the hedonic and experiential perspective (Holbrook, 1987) in which the focus does not lie on the decision process but on the consumption experience of products. Hedonic consumption applies to consumer behaviour that's relates to multisensory (sounds, tastes, scents visual images and tactile impression) emotive aspects of one's experience with products. Decrop (2006) explains that consumers make the decisions that will maximize their pleasure and emotional arousal, the approach focuses on product usage, consumption experience and symbolic dimensions of the product. "This hedonic and experiential perspective is particularly relevant for classes of products such as sporting events and vacation" (Decrop, 2006, pp.6). This is a very relevant model to the investigation as the researcher believes the decision to take a ski holiday is predominantly for hedonic purposes before anything else. Another approach introduced by Payne et al (1993) is adaptive decision making. This is based on the principle that consumers are flexible in the way they respond to a variety of conditions. Firstly, decisions are adapted to factors of the decision problem, such as the number of alternatives and time pressures. Secondly, individual differences affect how a person makes a decision e.g. prior knowledge or expertise of a product. Thirdly, it can depend on many social factors, individual decisions can be influence by relevant others such as friends or family or decisions involving multiple stakeholders, leading to problems connected to group decision making (Payne et al 1993) for example family members may conflict on a ski destination and influence the others to decide on an individual's preferred choice.

There are also a number of variables in the decision making process of a consumer, both internal and external. Internal variables include motive, personality, lifestyle and emotions. "Why do consumers behave the way they do? Motivation refers to the process by which an individual will be driven to act or behave in a certain way" (Gnoth, 1997, pp.290). Motivation can be looked upon in a four term process, motives, needs, wants and benefits. A motive is an internal drive or 'push factor' in the process of solving or fixing a need (Engel et al, 1973). Decrop (2006) defines personality as the reflection of a person's unique



characteristics that urge them to respond in ways to recurring environmental stimuli, often called 'traits'. Traits form personality types such as active, sociable, outgoing and confident, traits that Mayo and Jarvis (1981) agree are characteristics of vacationers, particularly active and social holidays such as ski trips. Lifestyle refers to specific patterns of behaviour, like activities and interests that bring about differences in consumers and the types of holidays they may decide to take. Emotion is just as important in the decision process, as discussed by Holbrook (1987) on the experiential benefits of a decision. All these internal variables influence a tourist's decision and may affect how important climate change is to a consumer's decision on ski holidays.

It could be argued that external influences create more important variables on decision making as the context of the decision must be taken into account as well. External variables affect the way tourists think, feel and behave. Decrop (2006) categorises external variables into social/cultural influences, interpersonal influences and situational influences. A consumer is influenced by the culture they are embedded in and is often unaware of the influences it has. Culture refers to the set of 'values' that help individuals communicate with other members of a society (Blackwell et al, 2001). McCracken (1988) believes that culture co-ordinates social action, including beliefs, values and norms, therefore culture influences the behaviour of a tourist. McCracken (1988) uses the example of sport to show culture influences travel behaviour to the extent that it becomes the content of the holiday, skiing is a great example of this as it is generally the primary motive in the decision process of a ski holiday. Social class is another prominent variable to a tourist, resulting from the division of society on the basis of status and prestige (Decrop, 2006). Education and occupation often determine the belonging to a social class, although wealth and income are also very influential determinants. Decrop (2006, p.13) states that "Many tourist destinations like ski resorts have a definite social class orientation", although resorts now attract people from all social classes, it still holds a stigma of only being accessible to the upper classes, and even with a more mixed class of people visiting resorts, different classes still tend to segregate themselves.

Most vacation decisions are a joint effort in that they involve different members within a 'decision making unit'. Therefore group influences have a major impact on ski resort choices. Shaw (1976) goes on to define a group within a context of two or more people who interact with each-other in a manner that each person influences or is influenced by each-other. This is very common in ski tourism, as tourists often visit in groups, given the social nature of the

holiday. It's therefore easy to assume that many tourists visiting resorts have not chosen the holiday but simply agreed to the decision of others.

## Chapter 3: Methodology

### 3.0 Introduction

This chapter will explain and identify the different research methods chosen for the investigation and how it will be used to carry out the findings. It also identifies how the collected data from the chosen research methods will be analysed.

The researcher used both quantitative and qualitative approaches as appropriate within the investigation. Both approaches have been chosen to specific methodologies that will enable a clear understanding of the topic. Burns (2000) states that scholars agree *both* approaches are needed, since no one methodology can answer all questions and provide insights on all insides. “There is more than one gate to the kingdom of knowledge. Each gate offers a different perspective” (Burns, 2000, p.15).

Bryman (2008) explains quantitative research as an approach that entails the collection of numerical data through a deductive approach (an approach to the relationship between theory and research in which the latter is conducted with reference to hypotheses and ideas inferred from the former) in which the accent is placed on the testing of theories.

Qualitative approach stands in opposition to quantitative approach, which Rist (1975, p.87) believes “holds that there exists definable and quantifiable ‘social facts’”. A qualitative approach positions itself that reality cannot be subsumed within numerical classification. The research process focuses on the validity of multiple meaning structures as opposed to the criteria of reliability and statistical compartmentalisation of quantitative research (Burns, 2000). Bryman (2008) states that it emphasises an inductive approach (the relationship between theory and research in which the former is generated out of the latter). It rejects the practises and norms of the natural scientific model in preference for an emphasis on the ways in which individuals interpret their social world.

The methodology was undertaken in two phases, phase 1 consisted of secondary research into the UK ski market and phase 2 consisted of primary research, both qualitative and quantitative that focused on climate change an UK consumers. In phase 1, secondary research used current annual market reports as well as the Mintel database and for the primary research, questionnaires and semi-structured interviews were used.

### 3.1 Questionnaire

Questionnaires tend to be used to research attitudes or opinions that will enable to identify and describe the variability in different phenomena (Saunders et al, 2012). To achieve this study's objectives, the researcher conducted a questionnaire based on what opinions the majority of UK skiers had on the issue of climate change and the importance of this issue in the decision making of a ski holiday. For instance, a look at what the most important factors are in a UK consumers' decision to plan a ski holiday and their different opinions on the effects that climate change is having on the ski industry.

To examine this, the researcher decided to use self-completing, closed answered questionnaires as it gives the ability to produce qualitative data that shows a brief representation of the attitudes that UK skiers have toward climate change. The self-completing questionnaire refers to when a questionnaire has been specifically designed to be completed by a respondent without intervention of the researcher who is collecting the data. In this case, paper copies of the questionnaire were handed out at random to a sample size of 40 respondents. All questionnaires were carried out in the main square of the French ski resort Les Deux Alpes from 11<sup>th</sup>-15<sup>th</sup> December 2016. As it is self-completing, the respondents were given time and personal space to complete the questionnaire. The researcher chose to create a self-completing questionnaire because of the readings of Bryman (2008) in which the scholar explained that this method of gathering data was cheaper to administer and is advantageous if you have a sample that is geographically widely dispersed. He also states that it is quicker to administer and can be distributed in very large quantities. It would take a much longer time to conduct personal interviews with a sample of that size. Finally, self-completing questionnaires are more convenient for respondents, because they can complete the questionnaire when they want and at the speed that they want to go.

### 3.2 Questionnaire Layout

The questionnaire can be viewed, (See Appendix A) and consisted in total of 19 questions in which all were multiple choice questions except question 12 that is a follow up answer to question 11. Excluding question 12, the questionnaire involved the respondent circling their answer from the options given by the researcher, for example question 10 "What mode of transport did you use to travel to Les Deux Alpes?" the respondent would circle which mode of transport they took to get to the resort (Bus, Car, Plane, Other) etc. Focusing on question 12, (if they had circled yes in question 11) respondents were asked to write an open answer

about the eco-friendly practises they had acknowledged during their stay at the resort, the reason for this was because the researcher believed that, if yes, question 11 was left too broad.

For the quantitative data collected from the questionnaire, the researcher used content analysis to examine the results. Content analysis is an approach to the analysis of information that seeks to quantify content in terms of predetermined categories and in a systematic and replicable manner (Bryman, 2008).

### 3.3 Questionnaire Advantages

There were a number of reasons for adopting a questionnaire in a quantitative approach (some already discussed) but the decision was made because of the advantages that this research method had to offer. Firstly, a valid and reliable questionnaire would enable accuracy and consistency when collecting data. Secondly, it allows the application of content analysis, for which Webb et al (1966) describe as a method of analysis that is notable as being done with a certain amount of ease, and that content analysis is an unobtrusive method that refers to an approach that does not entail participants in a study having to take the researcher into account and is therefore non-reactive. Content analysis is also a highly flexible method that can be applied to a wide variety of different kinds of information and can allow information to be generated about social groups to which it is difficult to gain access (Bryman 1974). Furthermore the questions that were created and selected made it easier and quicker for the respondent to react and respond, reducing likelihood of human error which could influence the findings. Finally, the greatest advantage about this questionnaire was that the researcher conducted it *at* a French ski resort during a relatively snowless start to a ski season, meaning respondents completed the questionnaire whilst tangible effects of climate change were evident during their ski holiday.

### 3.4 Semi-Structured Interviews

Kahn and Cannell (1957) define an interview as a purposeful discussion between two or more people. Semi-structured interviews can often be approached in a quantitative manner however in this investigation the researcher chose to undertake qualitative semi-structured interviews. The sample of this qualitative research method were 3 ‘experienced’ UK skiers, experienced being that the interviewees had been taking ski holidays for over 20 years. The researcher believed the experienced interviewees could provide information on UK skiing trends over a long period of time, along with giving a more detailed insight into the attitudes that UK

consumers have toward climate change. An important aspect in this part of the investigation was to ensure that the information collected was in context to all types of UK skiers, therefore to avoid bias from the reader, the decision was made to make all interviewees anonymous (averting criticism of the sample and findings because of difference in ethnicity, gender and social background).

Concerning the qualitative data that was collected, the researcher decided to adopt thematic analysis to review the findings. This form of analysis is one of the most common approaches to qualitative analysis and seems most appropriate for the information expected to collect. The process refers to the extraction of key themes in one's findings (Bryman, 2008). Ritchie et al (2003) believe that thematic analysis of qualitative data is most effective, done so through identifying recurring responses that are a product of thorough reading of the transcripts or field notes. Ryan & Bernard (2003) also recommend looking for repetitions and being aware of the reactions of the respondents e.g. expressions that are unfamiliar or used in an unfamiliar way. Other things to identify would be if respondents represent their thoughts in terms of metaphors or analogies and what that means, as well as analysing the ways in which topics shift in the interview through not only what is being said but what isn't being said. Finally one can look out for similarities and differences, interviewees might discuss topics in different or similar ways.

### 3.5 Interview Layout

As mentioned before, the researcher used semi-structured interviews (See Appendix B). To gather as much information as possible, the interviewees were given leeway during the interview to answer questions that may needed to have been asked 'on the spot', although structure was still maintained throughout to ensure the interview was in context with the questionnaire. The interviewees were given the same set of questions, asked in the same order to uphold validity.

As already discussed, in total there were 3 interviews that were carried out and the answers from each respondent was recorded and then analysed later. During the process, the researcher aimed for around 10-15 minutes for each interview, conducted on a one to one basis that was no longer than 20 minutes. The reason for the time limit was not just to ensure validity but also because the participant may lose focus and become uninterested, effecting their answers.

### 3.6 Interview Advantages

A qualitative interview is advantageous for the researcher because although the qualitative approach is resisted by quantitative researchers (who believe the latter is more rigorous and is a better demonstration of validity and reliability) Burns (2008) argues that that the criteria that may be appropriate for quantitative scientific research may not necessarily be appropriate for qualitative research. He argues that this methodology can provide avenues that can lead to the discovery of deeper levels of meaning. In summary... “While quantitative methods are concerned with process and meanings, qualitative methods are concerned with consequences, independent variables and behavioural statistics” (Eisner, 1979, p.14).

### 3.8 Ethics & Limitations

A methodology must be ethically sound before the process of primary research can begin. Therefore as part of this investigation, the study had to be ethically approved after a plan for primary data collection was made. The most concerning part of the study was that the researcher conducted the questionnaires during a visit to the French ski resort Les Deux Alpes and although there was already a level of knowledge from the researcher about the resort (from numerous visits while studying on Erasmus programme in the region) certain safety measures had to be put in place to ensure potential risks were made aware and controlled. Potential risks in this investigation were identified as follows:

- Not being able to get to the resort (In French Alps)
- Causing an inconvenience to interviewees e.g. during their working hours.
- Risking confidentiality of participants who do not wish to be named to their responses
  - personal information and data storage must be taken into account.
- Personal safety may also be at risk

Acknowledging these risks the researcher practised a variety of safety measures to ensure the potential risks were as little threat as possible, for example the questionnaires stated terms of participation and confidentiality on the header, including a statement explaining that completion of the questionnaire is taken as consent. If participants did not wish to contribute, then they need not complete the questionnaire. Other considerations were that if participants felt uncomfortable during any part of the research process, they could simply withdraw from the process. Furthermore all raw data was held securely and paper copies were kept in a locked away. Finally, interviews took place in a public area and a mobile phone was carried by the researcher at all times.

As well as ethical considerations, the investigation faced a number of limitations during primary research, such as conducting the questionnaire whilst the resort was hosting a music festival, potentially effecting the validity of the investigation because it meant the majority of respondents were of the demographic that the festival attracted (under 25/non skiers etc.) potentially causing a misrepresentation of all UK consumers and their opinions on climate change. The researcher originally planned to conduct interviews to *all* stakeholders within the industry, including tourism operators and local residents, however problems due to language barriers drastically limited the data that was collected and left an insufficient amount of information needed to reach a reliable conclusion. Following this was a failed interview with the manager of the tourist office at the resort, who was absent on the planned date of the interview, so no information could be collected from this stakeholder also. These limitations forced the researcher to change the direction of the study to focus solely on UK consumers.



## Chapter 4: Findings

### 4.1 Introduction

This chapter contains the findings and discussions from the secondary research in phase 1 and the primary qualitative and quantitative research of phase 2. Once the findings of phase 1 have been summarised, the data and analysis will be presented and analysed from the questionnaires and the semi-structured interviews. This is where it will provide the justification and overview of the results and why particular results occurred as they were. The data and information retrieved will then be conferred and discussed with relatable literature to summarise the findings.

### 4.2 Phase 1: The Consumer

An important aspect of this dissertation is knowing the UK ski market and its consumers. Phase 1 of the methodology used secondary research to identify themes and trends in the UK ski market, in an effort to understand who the consumers are and what influences their decision process. Phase 1 is also essential in order to decide on the correct means of gathering primary sourced information.

A survey from the Mountain International opinion survey (Minos) discussed by Spring (1996) found that ski holiday makers are a generally young population, with the majority of skiers being intermediate and surprisingly nearly 15% do not alpine ski or snowboard. Europeans are more motivated for ski vacations, to relax and 'get away'. Minos (Spring, 1996) showed that European skiers have holidays on average 3 out of every 5 seasons.

The survey from Minos (Spring, 1996) distinguished 7 groups of skiers within the ski population

1. The regular – 17% of pop ski every season
2. The occasional – 31% of pop ski 3 or 4 times in last 5 seasons
3. The seldom – 10% of pop ski once in last 5 years
4. The neighbours – 10% of pop – live in area, have short ski time in resort
5. The quitters – 10% of pop visit resort but don't ski
6. The yet to be convinced – 8% of pop, don't ski but prepared to try
7. Not convinced – 14% of pop ski holiday but don't return

Continuing with Minos's claim of a young ski population, a Mintel report (1994) showed that the 15-19 age group is twice as likely to be a regular skier; reflecting the youthful snowboard

market. Skiing is therefore a modern as well as a youthful and socio-economic group-related pastime. Although the information from the Minos survey and Mintel (1994) provide a good understanding of the types of consumers within the industry, the information is somewhat outdated.

An international report on mountain tourism (Vanat, 2016) showed that numbers of skier visits have been at a consistent level in the past 2 decades, however the number of UK consumers taking snow sports holidays fell by 27% between the winter of 2007/08 and 2012/13 (Mintel, 2014). This being said, a report into snow sports and the UK (Mintel, 2014) stated that improving levels of consumer confidence and minor economic recovery in the UK contributed to a minor 0.6% growth in the market in the winter of 2012/13. The estimated value of the snow sports market also returned to growth in the 2012/13 season, increasing 1.4% against the previous year, likely driven by lapsed skiers and snowboarders returning to the market (Mintel, 2014). The report goes on to claim that over a quarter of snow sports holidaymakers say their last trip was their first snow sports holiday (Mintel, 2014) suggesting not only a younger demographic but also that the popularity of ski holidays is rising. However, the industry has struggled to encourage repeat business and that a third of people who have taken a snow sports holiday, are not interested in taking another.

A key theme in much of the secondary research is that the UK ski industry is growing. This is shown in the annual report of the 2014/15 season from the market's largest tour operator, Crystal ski, that claims the total market grew from 890,000 to 899,700 and the tour operator market mirrored this overall increase with a 1% growth from 510,000 passengers to 515,000 (SkiPedia, 2015).

Furthermore, consumer research from a winter holiday report (Mintel 2016) suggested that approximately 985,000 ski holiday trips were taken during the winter of 2015/16. The report used a sample of 525 internet users aged 16+ and found that 9% had taken or booked a snow sports holiday (as shown in figure 1) and interestingly, the report found that younger

**Base: 525 internet users aged 16+ who have taken/booked holidays abroad in winter 2015/16**

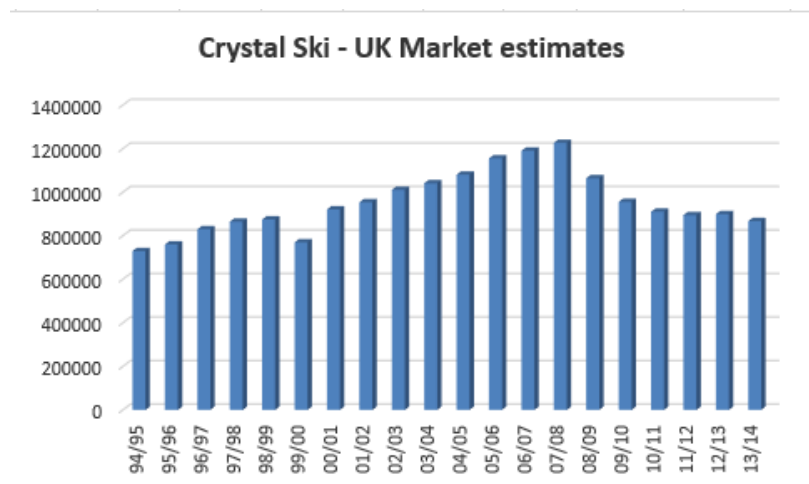
*"You've indicated that you have taken/booked holidays abroad this winter and/or last summer. Which, if any, of the following types of holiday abroad did you take/book?"*

	All	Beach holiday	City break	Cultural/historical/sightseeing holiday
	%	%	%	%
Beach holiday	26	100	11	16
City break	35	15	100	30
Cultural/historical/sightseeing holiday	17	10	15	100
Rural/countryside-based holiday	9	4	2	8
Sea/river cruise	7	2	2	3
<b>Snow sports holiday (eg skiing/snowboarding)</b>	<b>9</b>	<b>2</b>	<b>5</b>	<b>11</b>

consumers were the most likely to have taken a snow sports holiday during the season, with 15% of Millennials, rising to 19% of younger Millennials, compared to 9% of all adults (Mintel, 2016).

(Figure 1, Mintel report into UK winter holidays, 2016)

Figure 2 from the Crystal Ski (2015) annual report suggested the total UK market size peaked at 1.2 million in 2008 and has declined until last year, a figure that Vanat (2016) agrees with, as his figures suggest the UK has a total market of around 6.3 million, of which around 2 million are currently active (i.e. they have skied or snowboarded in the last 12 months).



(Figure 2, Crystal Ski UK Market estimates, 2015)

Total ski visits began to decline in 2007/8 as a result of the global financial crisis during the same year. Figure 3 represents the UK economy from 2000-2013 and clearly shows a direct correlation between the economy and total ski visits; as the economy declined, so did ski visits and as the economy begins to recover, visitor number begin to increase. Figure 2 and 3 share an almost identical trend.

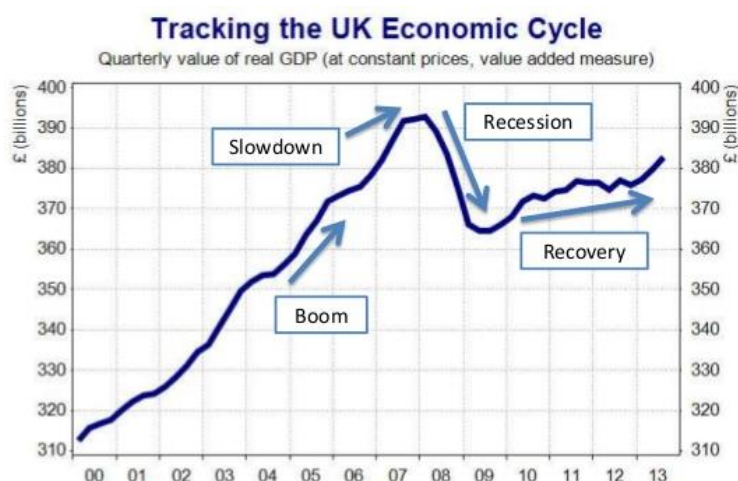


Figure 3, UK economic cycle (AC Macro-economics, 2015)

Concerning consumer motivation, the report on snow sports and the UK (Mintel, 2014) found that half of people interested in taking a snow sports holiday say they find the natural landscape appealing. Over-45s are the most likely to find the aesthetics of a ski resort appealing, so maintaining the ‘beauty’ of the natural landscape could be a key motivation among this demographic. Motivation of the consumer is ever changing, and although the market has a relatively affluent demographic, snow sports holidays are often seen as supplementary winter breaks taken in addition to ‘main holidays’ abroad (Mintel, 2015). Other effects to consumer motivation include “National or international mitigation policies – that is policies that seek to reduce GHG emissions – are likely to have an impact on tourist flows... They will lead to an increase in transport costs and may instill environmental attitudes that lead tourists to change their travel patterns, for example change of transport mode or destination choices” (Mintel, 2012). Motivations also change between demographics, this is shown in the winter holiday report (Mintel, 2016) that states 61% of Millennials (rising to 67% of younger Millennials) would be interested in trying additional winter sports activities to skiing and snowboarding on a winter ski holiday, compared to 43% of adults.

#### 4.2.1 Phase 1: Discussion

The findings from the secondary research has identified that UK ski market is beginning to see growth after 5-6 years in decline as a result of the global financial crisis in 2007/8, suggesting that economic stability plays a very important role in the consumer’s motivation to take a ski holiday. Another key theme throughout the findings in phase 1 is the motivational differences between demographics, alluding to the impression that natural beauty is a more important motivation for older skiers, whereas younger skiers are more motivated by the snow sport activities. This being said, it could be argued that due to the growing number of millennials visiting ski resorts, the number of environmentally-friendly tourists are therefore also increasing, given that younger generations are now well educated on the issue of climate change.

The key findings of Phase 1 supports Decrop’s (2006) notion that a number of factors will influence a consumer’s decision. Nonetheless it is clear that the most influential and therefore important factor for UK skiers is the financial aspect of a ski holiday, as represented by the clear correlation between the global financial crisis and total UK ski visitors. The researcher

expects these themes to continue into phase 2, including the popularity of eco-friendly tourists as a direct result of the increasing visits from a younger demographic.

#### 4.3 Phase 2: Questionnaire

The questionnaires were conducted at the French ski resort ‘Les Deux Alpes’ from 10<sup>th</sup>-16<sup>th</sup> December 2016. In total there were 40 questionnaires, of which all were completed by the respondents, chosen at random by the researcher in the town square of the resort. The questionnaire began with general information such as age and gender, then moved on to the decision making process of planning a ski holiday as well as the awareness of climate change and its effects on the ski industry. The final stage of the questionnaire then focused on what respondents would be willing to change for future trips. The researcher believed that the questions chosen would represent the general opinions of UK skiers.

Below is table 4.1, where it shows all of the questions that were asked to the respondents, the results were specified as a percentage and the data that are highlighted in red provided the answers that were selected the most from the respondents.

Table 4.1. – Questionnaire results

Question	Answer	Percentage
1. Gender	- Male	57.5%
	- Female	42.5%
2. Age	- 18-24	65%
	- 25-30	30%
	- 31-40	5%
	- 41-50	0%
	- 51+	0%
3. What is the average total price you pay per ski holiday (pp)?	- <£200	0%
	- £201-300	2.5%
	- £301-400	22.5%
	- £401-500	45%
	- £500-600	27.5%
	- £600+	2.5%
4. What are the 3 main factors you consider when planning a ski holiday?	- Price	97.5%
	- Tour operator	7.5%
	- Resort	42.5%
	- Not my decision	40%

	<ul style="list-style-type: none"> <li>- Time of year</li> <li>- Festival/event</li> <li>- Piste conditions</li> <li>- Eco-friendly</li> <li>- Other</li> </ul>	<p>7.5%</p> <p>52.5%</p> <p>45%</p> <p>7.5%</p> <p>0%</p>
5. How important is eco-friendliness to you when planning a ski holiday?	<ul style="list-style-type: none"> <li>- Not important</li> <li>- Impartial</li> <li>- Important</li> <li>- Very important</li> </ul>	<p>35%</p> <p>37.5%</p> <p>22.5%</p> <p>5%</p>
6. How many times have you visited Les Deux Alpes?	<ul style="list-style-type: none"> <li>- Once</li> <li>- 2-3</li> <li>- 4-6</li> <li>- 7+</li> <li>- Ski season</li> </ul>	<p>27.5%</p> <p>27.5% 29 in total have returned to resort</p> <p>12.5%</p> <p>10%</p> <p>10%</p>
7. (if more than once) How has the snowfall changed from the year of your first visit to the resort?	<ul style="list-style-type: none"> <li>- Less snow</li> <li>- Not changed</li> <li>- More snow</li> <li>- Don't know</li> </ul>	<p>65%</p> <p>25%</p> <p>0%</p> <p>10% (out of 29)</p>
8. Are you environmentally conscious during your ski holiday?	<ul style="list-style-type: none"> <li>- Yes</li> <li>- No</li> <li>- Don't know</li> </ul>	<p>42.5%</p> <p>57.5%</p> <p>0%</p>
9. Do you think climate change is effecting the ski industry?	<ul style="list-style-type: none"> <li>- Yes</li> <li>- No</li> <li>- Don't know</li> </ul>	<p>75%</p> <p>7.5%</p> <p>17.5%</p>
10. What mode of transport did you use to travel to Les Deux Alpes?	<ul style="list-style-type: none"> <li>- Bus</li> <li>- Car</li> <li>- Plane</li> <li>- Other</li> </ul>	<p>42.5%</p> <p>5%</p> <p>52.5%</p> <p>0%</p>
11. Did you acknowledge any eco-friendly practices in place at Les Deux Alpes?	<ul style="list-style-type: none"> <li>- Yes</li> <li>- No</li> <li>- Don't know</li> </ul>	<p>37.5%</p> <p>42.5%</p> <p>20%</p>

12. (if yes) what were they?	- Recycle bins	100% of 15 yes'
13. Within the ski industry, who do you think is the most responsible for the environmental impacts at Les Deux Alpes?	- Tourists - Residents - Travel operators - Accommodation sector - Other	67.5% 7.5% 25% 0% 0%
14. Would you change the way you prepare a ski holiday in order to help reduce the effects of climate change?	- Yes - No - Don't know	65% 25% 10%
15. (if yes) What factors would you be willing to change?  (Data represented as the factors that respondents were <i>not</i> willing to change)	- Transport - Resort - Tour operator - Location - Resort facilities - Not my decision - Time of year - Event - Piste conditions - Other	42% 38.5% 0% 38.5% 27% 0% 35% 46% 85% 0%
16. Would you pay more to visit Les Deux Alpes in an effort to help reduce the effects of climate change?	- Yes - No	47.5% 52.5%
17. (if yes) how much more would you pay?	- <£50 - £51-100 - £101-150 - £151-200 - £200+	47.5% 42.5% 10% 0% 0%
18. Climate change is the single biggest threat to the ski industry	- Strongly disagree - Disagree - Neutral	0% 0% 27.5%

	<ul style="list-style-type: none"> <li>- Agree</li> <li>- Strongly agree</li> </ul>	<p>55%</p> <p>17.5%</p>
19. Would you consider booking a more environmentally friendly ski holiday in the future?	<ul style="list-style-type: none"> <li>- Yes</li> <li>- No</li> </ul>	<p>92.5%</p> <p>7.5%</p>



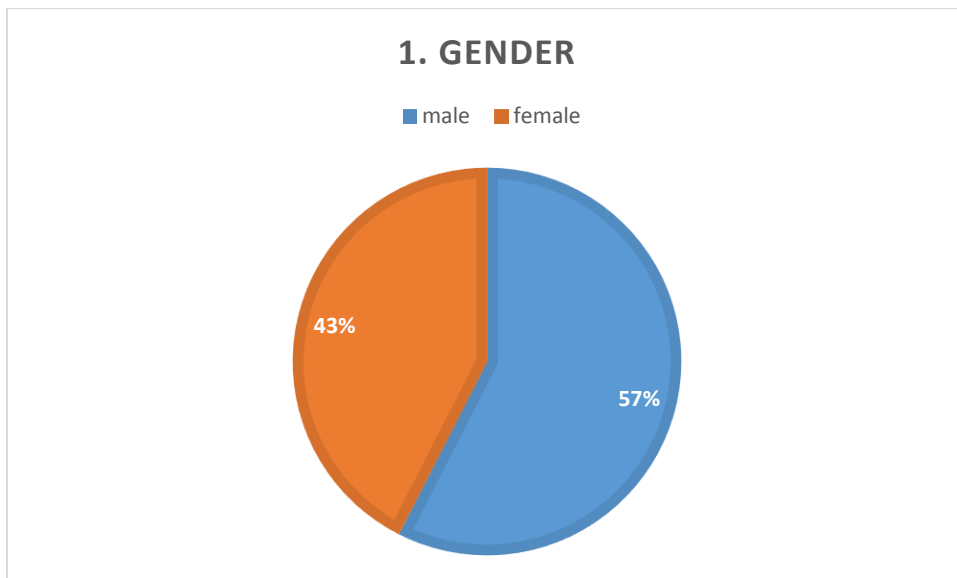
### 4.3.1 Questionnaire analysis

The questionnaire was completed by 40 respondents, 57% were male and 43% were female.

Table 4.1.2 - Gender

GENDER	
MALE	23
FEMALE	17
TOTAL	40

Figure 4a – Question 1 results



Although the respondents were chosen at random, the researcher tried to incorporate an even number of both male and female respondents in an attempt to collect more valid data that wouldn't be bias because of a gender majority. That being said, 57% of respondents were male, a statistic that fully represents the population during the time the researcher was conducting primary research at the resort.

Table 4.1.3. – Age

AGE	
18-24	26
25-30	12
31-40	2
41-50	0
50+	0

Figure 4b – Question 2 results

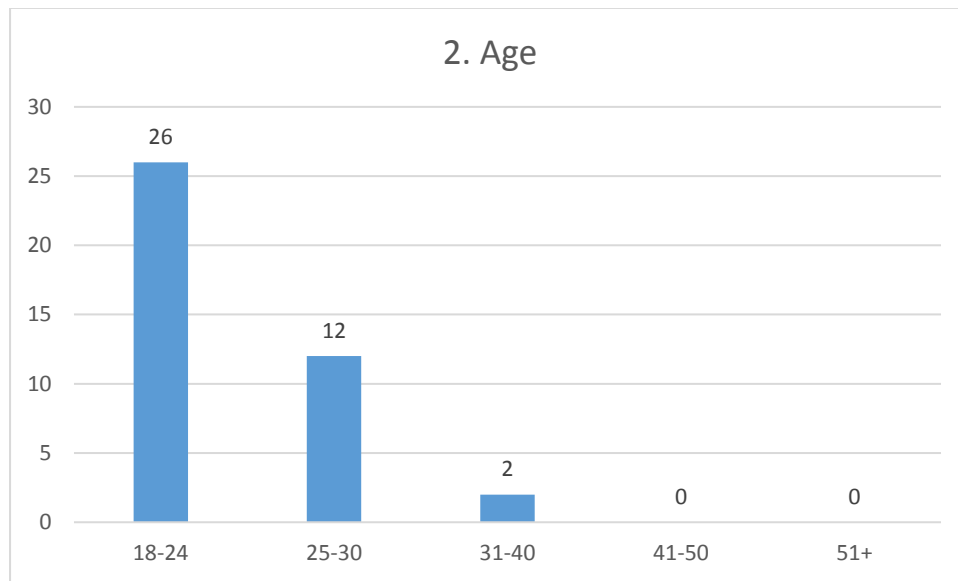


Figure 4b shows that 65% of the respondents were aged 18-24. This statistic supports the notion from the report on winter holidays (Intel, 2016) that the demographic of the UK skier is youthful, potentially due to growing millennial visitors. With only 40 respondents however, it may be difficult to conclude that the majority of UK skiers are aged 30 or below. A concerning factor that may have effected these results was that the questionnaires were conducted during a music festival at the resort that attracted a lot of younger UK consumers, this is something to be considered because the demographic may have been very difficult outside the timing of the festival.

Table 4.1.4. - What is the average total price you pay per ski holiday (pp)?

**AVERAGE PRICE**

**(PP)**

<b>&lt;£200</b>	0
<b>£201-300</b>	1
<b>£301-400</b>	9
<b>£401-500</b>	18
<b>£501-600</b>	11
<b>£600+</b>	1

Figure 4c – Question 3 results

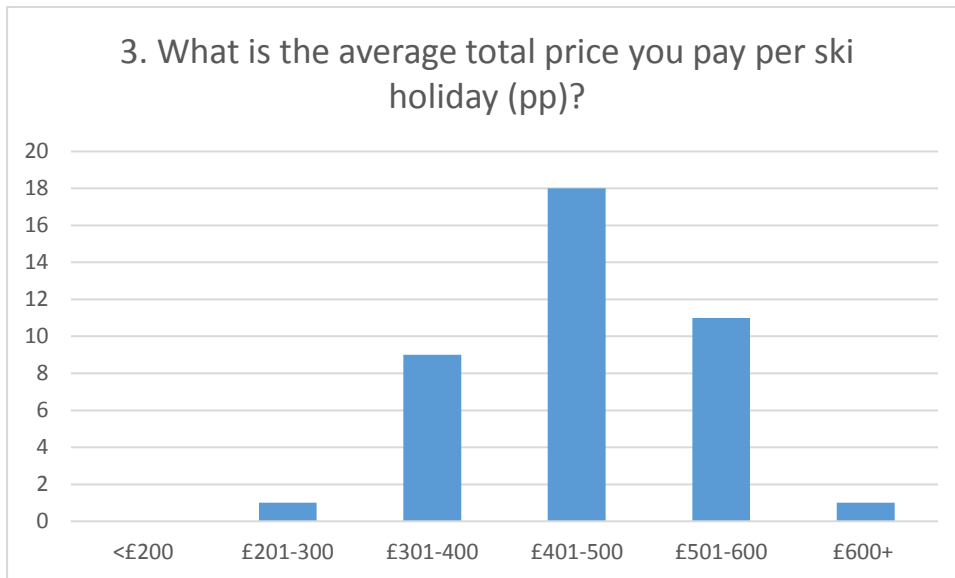
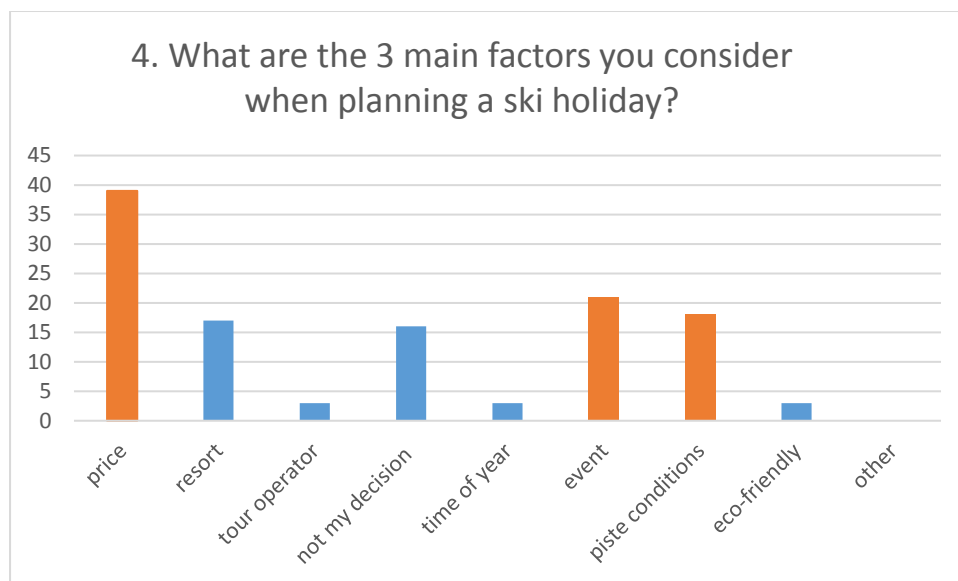


Figure 4c gives a good understanding of what UK consumers are paying for ski holidays. The graph shows that the average price that respondents were paying for their ski holiday was £401-500. This is not a surprising result, although the researcher expected the average would be closer to £501-600. The moderate price range (in context with ski holidays) may be due to the increase of flights from cheap airlines such as EasyJet, meaning consumers can now fly to nearby airports for as little as £40 (EasyJet, 2017).

Table 4.1.5 - What are the 3 main factors you consider when planning a ski holiday?

FACTOR	
PRICE	39
RESORT	17
TOUR OPERATOR	3
NOT MY DECISION	16
TIME OF YEAR	3
FESTIVAL/EVENT	21
PISTE CONDITIONS	18
ECO-FRIENDLINESS	3
OTHER	0

Figure 4d – Question 4 results



Question 4 begins to focus more on the consumers' decision making process. The question asked for the respondents' 3 main factors when planning a holiday and figure 4d shows that price, the event and piste conditions were the most popular. As expected, 92% of respondents said that price was a main factor when planning a ski holiday, this represents just how important cost is to UK skiers when deciding on a ski trip and can be linked to the findings in phase 1 that suggest price is the most important aspect to UK consumers. The second most popular factor was the event, an answer that was expected, given that the majority of

respondents were at the resort because of the music festival held during primary research. Thirdly, 45% of respondents chose piste conditions as a main factor when planning a ski holiday, showing that snow conditions are important to UK skiers, however it must be noted that an eco-friendly option was given to respondents, for which only 7.5% feel is a main factor when planning a ski trip. Although piste conditions is something the majority of UK skiers are concerned with, it appears the eco-friendly practices that could improve piste conditions is not.

Table 4.1.6. - How important is eco-friendliness to you when planning a ski holiday?

LEVEL OF IMPORTANCE	
NOT IMPORTANT	14
IMPARTIAL	15
IMPORTANT	9
VERY IMPORTANT	2

Figure 4e – Question 5 results



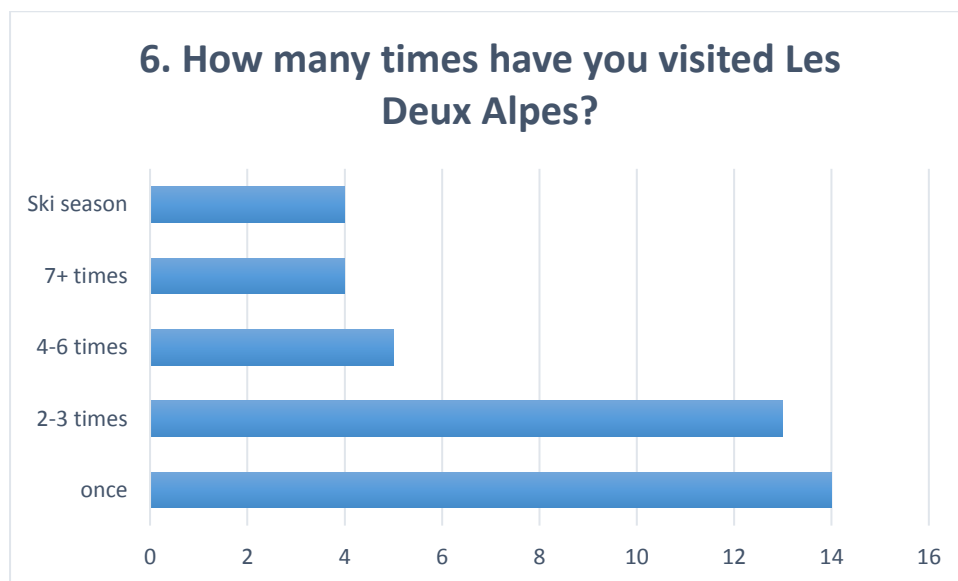
Continuing with eco-friendliness, respondents were asked how important the topic was to their decision making process and figure 4e shows that the majority were either impartial or

found it not important when they plan a ski trip. Again this somewhat contradicts their concern for piste conditions. The graph goes against what was expected by the researcher, who anticipated eco-friendliness to be important to UK skiers, particularly considering demographic of the questionnaire.

Table 4.1.7. - How many time have you visited Les Deux Alpes?

TIMES VISITED	
ONCE	11
2-3 TIMES	16
4-6 TIMES	5
7+ TIMES	4
SKI SEASON	4

Figure 4f – Question 6 results

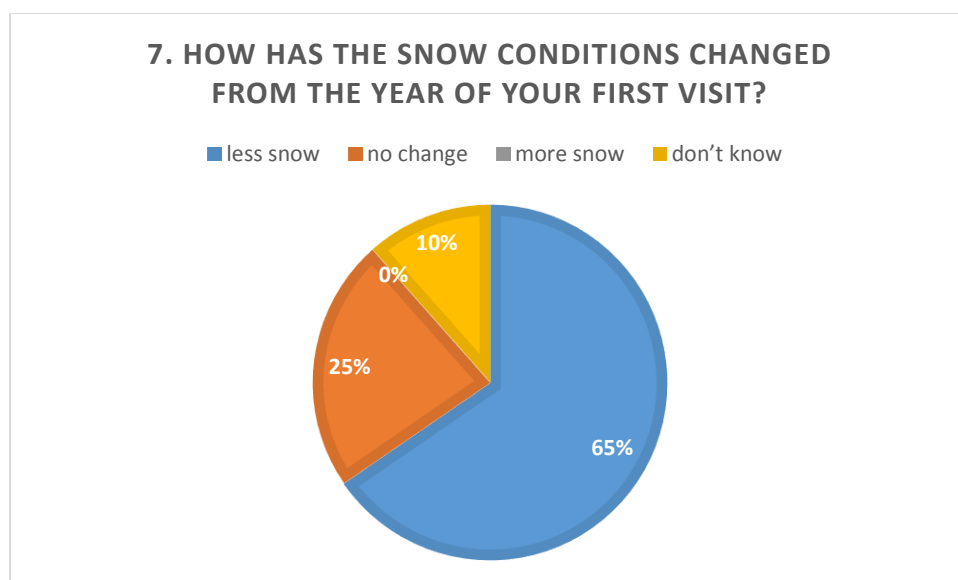


In order to find out if UK skiers were aware of the effects that climate change is having on the ski industry, question 6 aimed to find the respondents who had visited Les Deux Alpes before, as a set up question which will be discussed shortly. Figure 4f shows that of the 40 respondents who took the questionnaire, 26 had been to the resort more than once. An interesting statistic was that the majority respondents had only visited the resort once, which could be linked to the recent growth of the UK ski market as well as growing numbers of first time skiers mentioned by the (Mintel, 2014) report into snow sports and the UK

Table 4.1.8. - (If more than once) How has the snowfall changed from the year of your first visit?

CHANGE IN SNOWFALL	
LESS SNOW	17
NOT CHANGED	6
MORE SNOW	0
DON'T KNOW	3

Figure 4g – Question 7 results



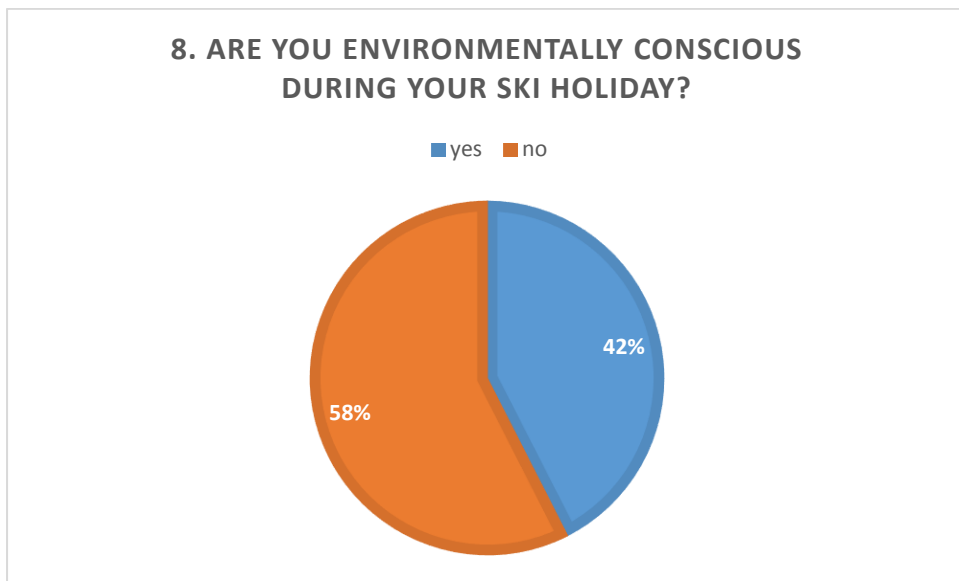
As already stated, 26 respondents had visited the resort on more than one occasion. Figure 4g shows that of the 26 respondents, 65% believed the snow conditions were better during their first visit to Les Deux Alpes. Furthermore, none of the respondents believed the snow to be in better condition, showing that UK skiers are therefore aware that snow conditions are declining. However, one cannot conclude that they are aware of the *reasons* for declining snow conditions i.e. climate change. Another factor the researcher must keep in mind is that snow conditions change from week to week at ski resorts, and given that respondents did not state what time of the season they previously visited the resort, it would be invalid to state that respondents have seen a great decline in snow conditions due to visiting at different

periods of a ski season (E.g. piste conditions will generally be better in February than in April)

Table 4.1.9. - Are you environmentally conscious during your ski holiday?

<b>YES</b>	<b>17</b>
<b>NO</b>	<b>23</b>

Figure 4h – Question 8 results



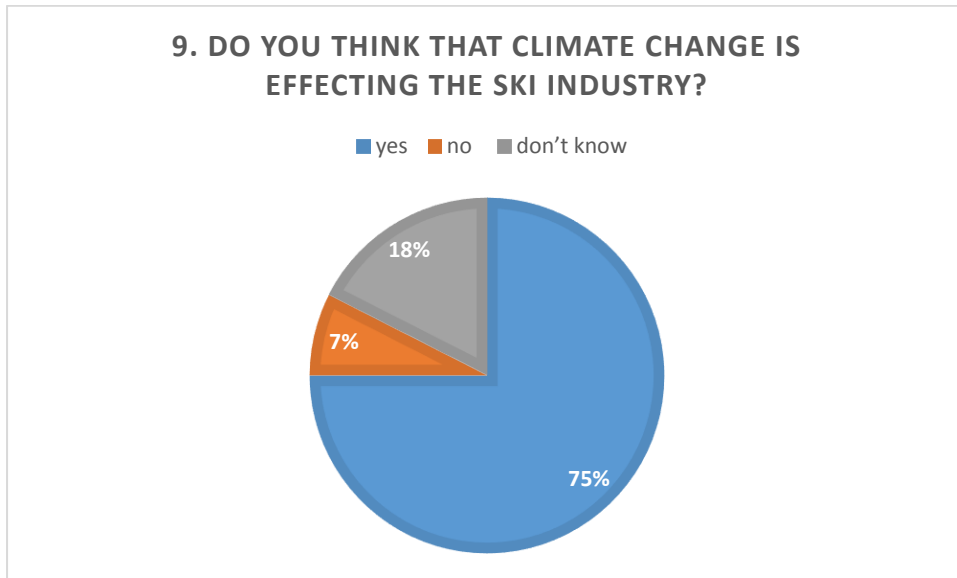
An important way to discover the importance of climate change to UK skiers was to ask the respondents if they were environmentally ‘conscious’ during their ski holidays, e.g. recycling waste. Figure 4h shows that 58% of respondents were not environmentally friendly during their stay at the resort, suggesting that the issue of climate change and its impacts to the environment is not relatively important to the majority of UK skiers. This also goes against the notion that the majority of UK consumers are not environmentally friendly tourists, as expected by the researcher.



Table 4.1.10. - Do you think that climate change is effecting the ski industry?

<b>Yes</b>	<b>30</b>
<b>No</b>	<b>3</b>
<b>Don't know</b>	<b>7</b>

Figure 4i. – Question 9 results



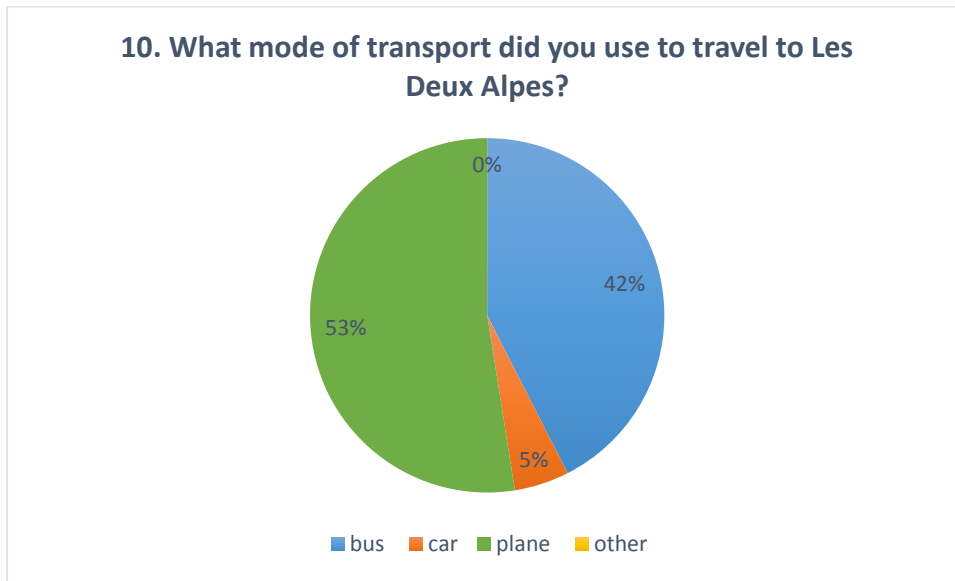
Results from questions 8 and 9 also begin to shape a recurring trend in the data, as figure 4i shows that 75% of respondents believe that climate change *is* effecting the ski industry, and only 7% believe it's not. This suggests that even though the majority of UK skiers are clearly aware that climate change is effecting the ski industry, they are still not being environmentally friendly during their holiday.

4.1.11. - What mode of transport did you use to travel to Les Deux Alpes?

**MODE OF  
TRANSPORT**

<b>BUS</b>	<b>17</b>
<b>CAR</b>	<b>2</b>
<b>PLANE</b>	<b>21</b>
<b>OTHER</b>	<b>0</b>

Figure 4j – Question 10 results



The researcher wanted to know what method of transport UK skiers are using to get to the ski resorts and gain a better understanding of their decision making process. Unsurprisingly, the majority (53%) of respondents travelled to the Les Deux Alpes via plane. Interestingly, 42% travelled by bus, a result that the researcher did not expect, however it may be linked to the music festival that has already been discussed, due to a number of tourists that had travelled with university tour operators, who use buses as the mode of transport (to cope with high numbers). If the questionnaires were conducted outside the timing of the festival, the researcher believes a greater majority of respondents would have flown to the resort.

Table 4.1.12. - Did you acknowledge any eco-friendly practices in place at Les Deux Alpes?

<b>Yes</b>	<b>15</b>
<b>No</b>	<b>17</b>
<b>Don't know</b>	<b>8</b>

Figure 4k –Question 11 results

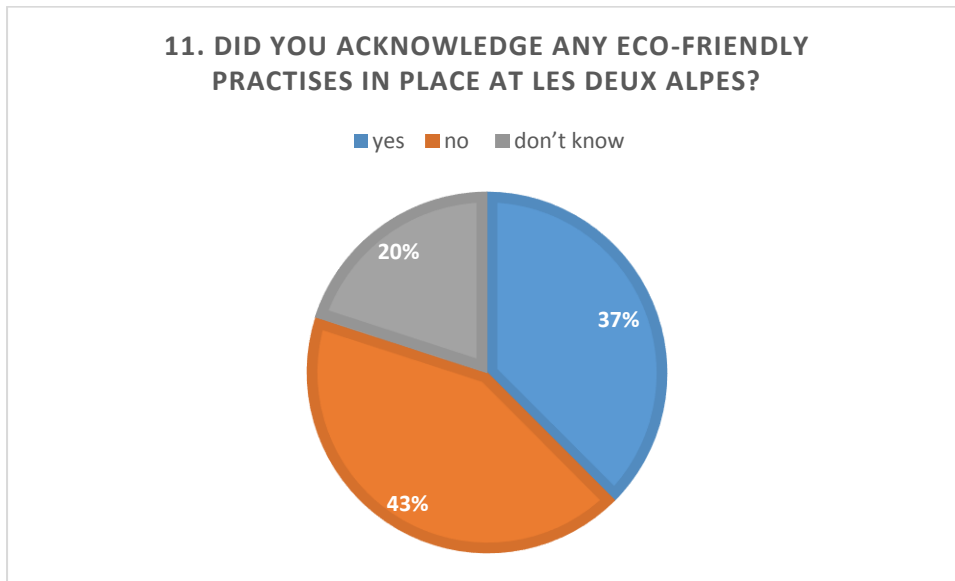


Figure 4k focuses back to the awareness of climate change to UK skiers, and shows that 43% of respondents did not acknowledge any eco-friendly practices in place during their stay in Les Deux Alpes, suggesting that eco-friendliness is not important to UK consumers, assuming that those who are environmentally ‘conscious’ would be more aware of practices in place. That being said, it may also suggest that the resort itself simply does not have many sustainable practices in place and therefore indicate that little effort is being made from ski resorts to mitigate the effects of climate change.

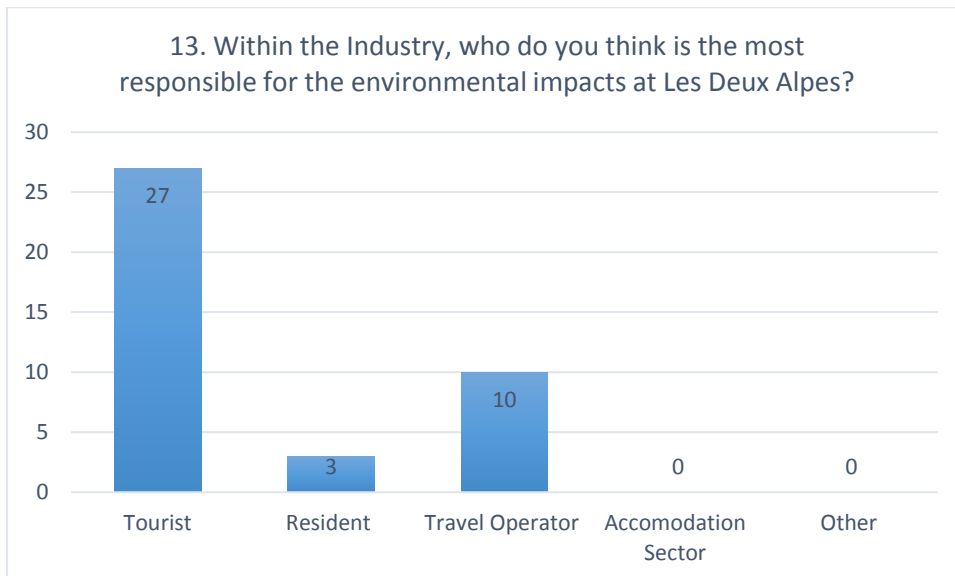
Question 12 - (If yes) what where they?

Of the 40 respondents asked about acknowledging eco-friendly practices 15 (37%) answered yes. Question 12 was unique in the questionnaire as respondents were required to write an answer (open question) instead of circling an option given to them. Interestingly only 1 practice was given by all 15 respondents, acknowledging recycling bins such as bottle banks located throughout the resort. Again this begs the question of whether ski resorts are not promoting or applying enough mitigating practices against climate change.

Table 4.1.13. - Within the ski industry, who do you think is the most responsible for the environmental impacts at Les Deux Alpes?

STAKE HOLDER	
<b>TOURIST</b>	27
<b>RESIDENTS</b>	3
<b>TRAVEL OPERATORS</b>	10
<b>ACCOMMODATION SECTOR</b>	0
<b>OTHER</b>	0

Figure 4L – Question 13 results

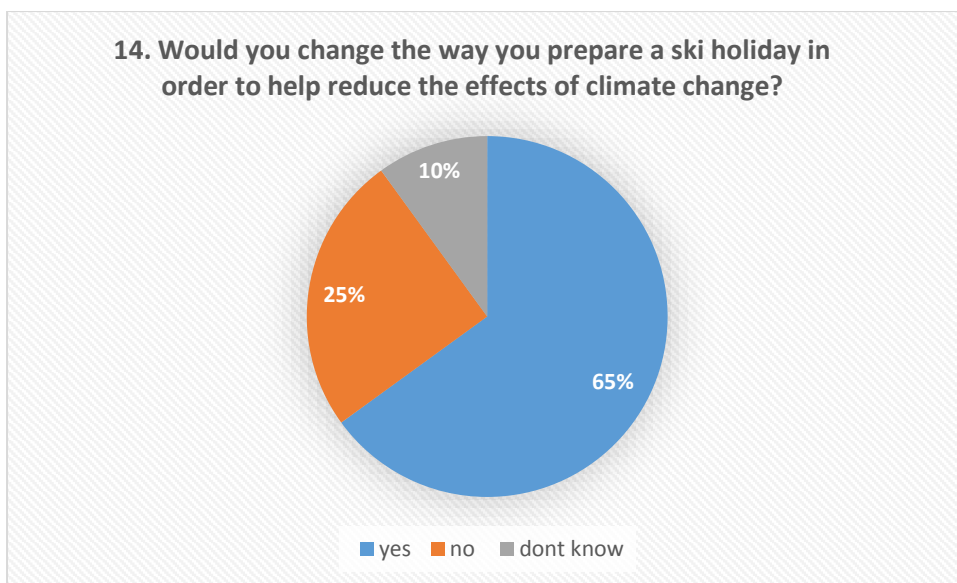


It was essential that the researcher gain a better understanding of not just how aware UK skiers are to the issue of climate change but also who UK skiers believe is most responsible for said issues (within the context of the ski industry). Figure 4L shows that the vast majority of respondents (67.5%) believe that they themselves are the most responsible. This correlates with a key theme of the questionnaire’s findings that imply that UK consumers are aware of the problem (to the extent that they believe themselves to be the most responsible cause to the problem) yet eco-friendliness is not important to them when planning or during their ski holidays.

Table 4.1.14. - Would you change the way you prepare a ski holiday in order to help reduce the effects of climate change?

<b>Yes</b>	<b>26</b>
<b>No</b>	10
<b>Don't know</b>	4

Figure 4m – Question 14 results



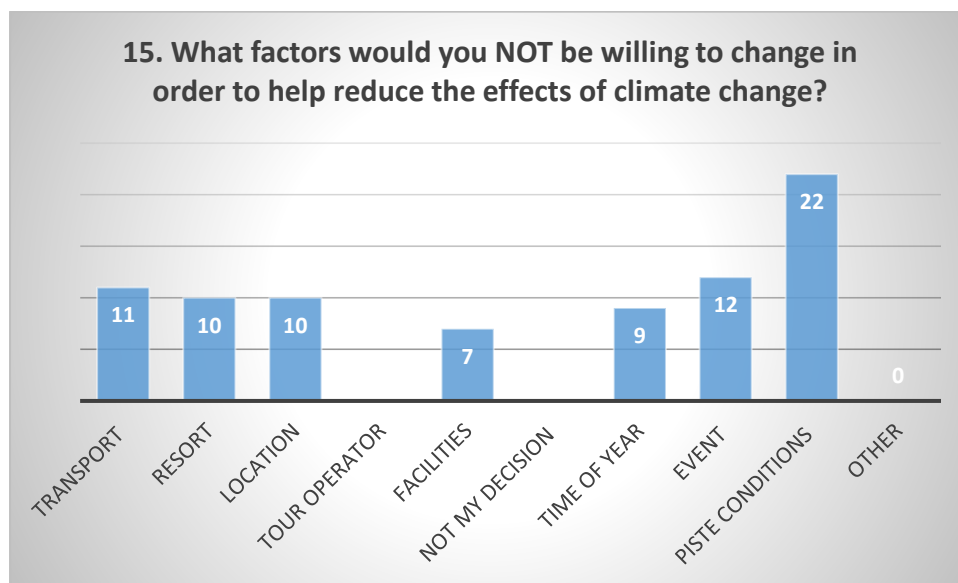
Question 14 moves on to the final stage of the questionnaire, concerning future ski holidays. The respondents were asked if they would change the way the plan a ski holiday in an effort to help mitigate the effects of climate change. The vast majority (65%) said that they would change the way they planned a holiday, suggesting that although UK consumers are not *currently* considering climate change when they plan a ski holiday, they *are* willing to change their decision process for future ski holidays.

After reviewing the findings of question 15, the researcher believed the data collected would be better represented by highlighting the factors that the respondents *wouldn't* be willing change. Results in this section therefore will be what the respondents did *not* circle.

Table 4.1.15. - (if yes) Circle all factors you would be willing to change

FACTOR	
TRANSPORT	11
RESORT	10
TOUR OPERATOR	0
LOCATION	10
RESORT FACILITIES	7
NOT MY DECISION	0
TIME OF YEAR	9
EVENT	12
PISTE CONDITIONS	22
OTHER	0

Figure 4n – Question 15 results



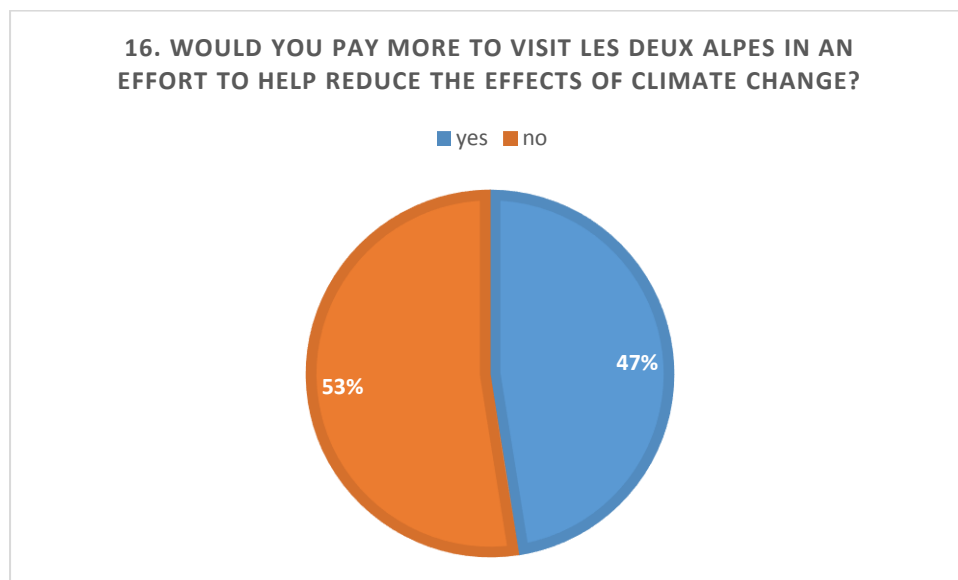
With question 14 in mind, question 15 goes more in-depth and looks to find what aspect of UK skiers’ holidays they would change. The respondents were given a multiple of options, and as already discussed, figure 4n shows the amount of times this option was *not* chosen. The graph shows that majority of respondents would not change piste conditions (85%). This was expected by the researcher given the results in question 4, even though becoming a sustainable tourist would benefit piste conditions. Following this, respondents were not willing to change the event, a statistic that seems fitting given the timing of the questionnaire being during a music festival. Thirdly, respondents were not willing to change the method of

transport they take to ski holidays, and with question 10 in mind, it is not surprising given the economic and time benefits of traveling by plane. A pattern of contradiction arises again due to the fact that respondents didn't want to change something that many argue is the biggest contributor to climate change within the ski industry.

Table 4.1.16. - Would you pay more to visit Les Deux Alpes in an effort to help reduce the effects of climate change?

<b>YES</b>	<b>19</b>
<b>NO</b>	<b>21</b>

Figure 4o – Question 16 results

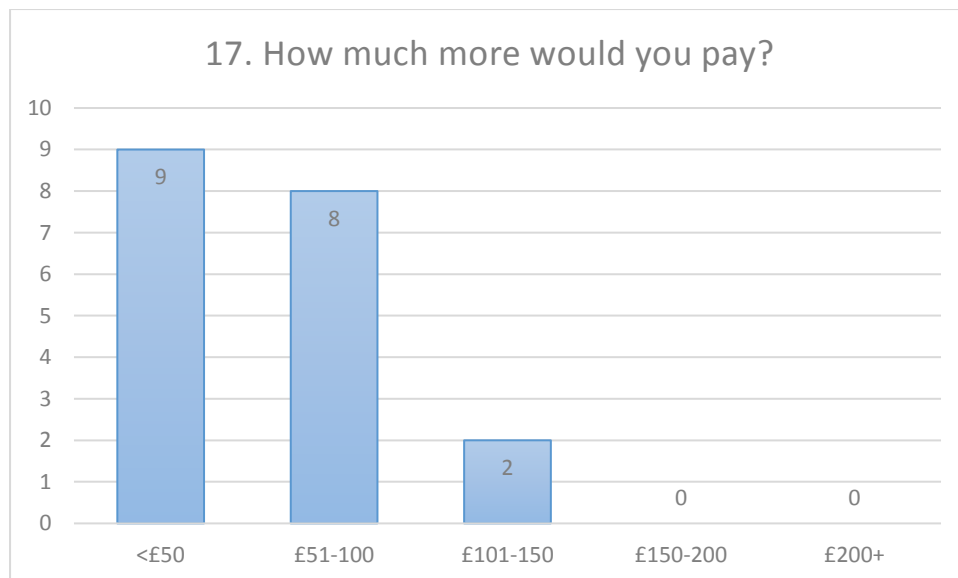


Respondents were not given price as an option in question 15 because the researcher anticipated that price would be the most influential factor in the decision making process (as shown in question 4). It seemed fitting that given the clear importance of price to UK skiers that this be a standalone question. Surprisingly, response to the question was evenly split, with 53% saying no. This is a very positive result that suggests nearly half of UK skiers would be willing to help mitigate climate change at their own expense. Nonetheless, the reliability of the results must be questioned, knowing that it is much easier to say something than to act upon it.

Table 4.1.17. (if yes) how much more would you pay?

AMOUNT	
<£50	9
£51-100	8
£101-150	2
£151-200	0
£200+	0

Figure 4p – Question 17 results



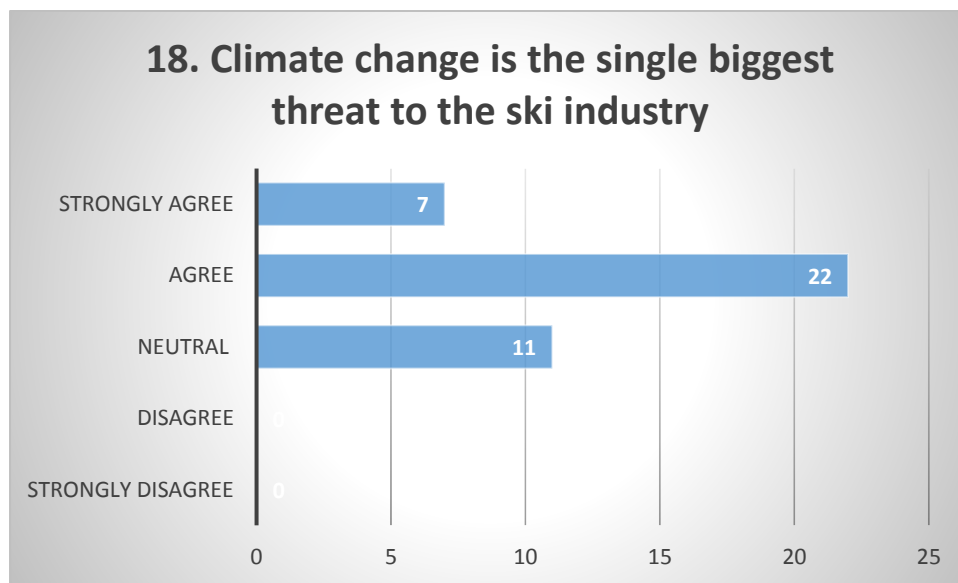
Continuing with question 16, respondents who were willing to pay more for eco-friendly ski holidays were then asked how much more they would be willing to pay. Of the 40 respondents, 19 said they would pay more. Of those 19, 90% would not pay more than £100. Although the majority selected the lowest amount given, the results from figure 4p are very positive, showing that respondents were willing to pay more than what they currently pay, even though price is the most important aspect of their ski holiday.



Table 4.1.18. - Climate change is the single biggest threat to the ski industry.

OPINION	
STRONGLY DISAGREE	0
DISAGREE	0
NEUTRAL	11
AGREE	22
STRONGLY AGREE	7

Figure 4q – Question 18 results

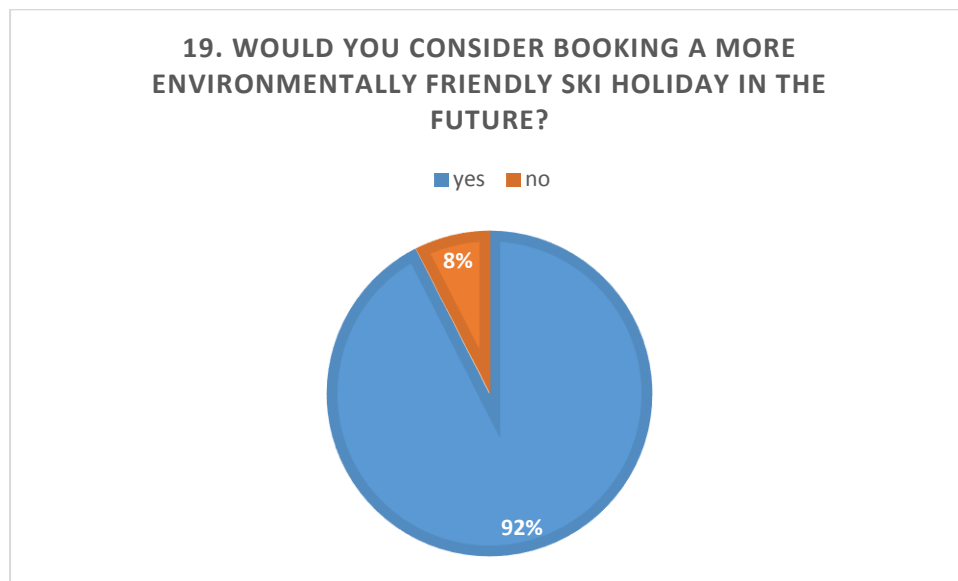


Although respondents have been asked about the threat of climate change on the ski industry (question 9) the researcher wanted a more in depth understanding of how much of a threat UK skiers believe this topic is. Figure 4q shows that 72.5% believe climate change is the single greatest threat to the industry, with 17.5% strongly agreeing. Furthermore, no respondent disagreed with the statement, suggesting that the vast majority of UK skiers acknowledge climate change as a serious threat. With the majority of respondents agreeing with the statement, one can only conclude that UK skiers are aware that climate change is effecting the ski industry.

Table 4.1.19. - Would you consider booking a more environmentally friendly ski holiday in the future?

<b>YES</b>	<b>37</b>
<b>NO</b>	<b>3</b>

Figure 4r – Question 19 results



The final question asked the respondents if they would consider more environmentally friendly ski holidays in the future, and in running with the key themes of these findings, 92% said that they would, suggesting that UK skiers are willing to change their decision process’ in the future.

#### 4.4 Interview analysis

The reason for this method of primary research was to gain a more in-depth understanding of the importance of climate change to UK skiers. The researcher used a semi-structured interviews within the context of the questionnaire to allow for both sources of primary data to be compared. The semi-structured nature of the interviews allowed conversation to flow and for other questions to be asked ‘in the moment’. Below is each question that all interviewees were asked, followed by a discussion of the key themes of interviewees’ answers, as well as quotations taken from the every interview to help better summarise each answer.

1. Have you seen a change in snow conditions since you began skiing?

All three interviewees recognised a change in snow conditions, particularly in the last 10 years, claiming that the ski season is starting much later than it used. One interviewee explained that

*“10 years ago, I went skiing in the middle of November... And around December 10<sup>th</sup>, I could go to ‘my’ resort (interview owns a small chalet) in Corrençon en Vercors-Villard de lans, around 1100 to 2000 meters-high.”*

The interviewee’s went on to say that big resorts are now opening later, and smaller resorts such as the one mentioned in quotations open as late as January.

*“[Corrençon en Vercors-Villard de lans] resort hasn’t opened before January in the past 3 years”*

When the researcher asked further into snow conditions, the majority agreed that the ‘quality’ of the snow isn’t different only that the season has become shorter and that good snow conditions are more unreliable.

2. (If yes) have the changes changed the way you decide on your ski trip?

As all interviewees had seen a change, all answered the second question with the key theme being that the factor of ‘time’ has become much more important when they book a ski holiday, as they now have to choose a time that not only suits themselves but also co-insides with good quality of snow. One interviewee even went as far as to say that

*“Planning a ski holiday has become much more stressful... because of family ties with school, I have to book the holiday in the school half term, which is very stressful given that snow conditions have become so unreliable. It’s a gamble booking family trips now.”*

3. Is climate change having a negative effect on the ski industry?

Again, all three interviewees believed climate change was threatening the ski industry. They went into detail about the unreliability of snow conditions as already discussed as well as the struggle for businesses within the industry. An interviewees touched upon the smaller businesses at resorts, stating that

*“Since the season is shorter, it is really difficult for ski renting shops to make money. It’s the same for people working in ski resorts: their contract lasts the time of the season, so they have to find another job to earn money for the time ‘wasted’.”*

4. What is the biggest change in the ski industry over the past 10 years caused by climate change?

The biggest change that the interviewees believed to have happened to the ski industry was that the ski season is starting later, finishing earlier and that consistent heavy snow fall is “a thing of the past”.

5. Do you think the effects are changing the way people decide on their ski holiday?

Question 5 saw relatively different approaches from the interviewees, as each respondent has different experiences as a UK skier. For example, one interviewee spends long ski holidays during the season and didn’t believe climate change was effecting the way he chose a ski holiday...

*“When I go to ski with family and friends, we often pick and choose the days of the week that have the best conditions.”*

However the other interviewees claimed that climate change was definitely changing the way people decide a ski holiday, one of them stating that

*“Apart from those who can only go during school holidays, no one can just point at a calendar and decide on a date anymore, and that goes with the resorts as well... skiers have to really plan a ski holiday these days, otherwise they could end up arriving at a resort with no snow in the middle of January!”*

6. Do you think this issue is being made aware to people who go skiing?

Again, opinion was split on this question. One respondent believed that there was very little awareness from UK skiers and that there needs to be more of an effort from the industry to get the message to “us” about how climate change is a serious threat. The others believed that UK skiers *are* aware of the issue, “albeit they might be ignoring it”, as one interviewee went on to say that

*“Tv news talks a lot about it every year so I think people are aware of it.”*

7. What do you think climate change will do to snow conditions in the next 10 years?

All interviewees answered with a theme of negativity to this question, expressing their concerns for declining snow conditions and over populating ski resorts. A respondent also mentioned his concern for the smaller ski resorts, asserting that “it will be really difficult for small resorts to survive” because of less money than bigger resorts, who can afford efficient snow cannons. The interviewee also mentioned that...

*“On the other hand, big resorts don’t have much to worry about in the next 10-20 years, if they’re high enough (2 to 3000m high such as les Deux Alpes or Tignes-Val d’Isere).”*

The interviewee went on to claim that prices will increase and become an activity for the rich, something another respondent clearly agrees with, stating that

*“When resorts start to close, the higher resorts are gonna become more exclusive and prices will rise”*

8. To what extent do you think skiers are at their own fault for enhancing the effects of climate change

All interviewees showed sympathy for the tourist, suggesting that tourists are not to blame as they are simply wanting to enjoy a ski holiday. They believed travelling by plane is not as damaging to the environment as perceived and that everyday use of electrical appliances and car travel left a far bigger footprint. One interviewee did however discuss how although the tourists are not necessarily to blame, himself (a tourist) feels some guilt towards the effect climate change is having on the industry. This contradicts the finding from a similar question in the questionnaire, which resulted in 67.5% of respondents believing the tourist is the most responsible stakeholder in the ski industry.

9. How effective are current sustainable practices at mitigating climate change?

The interviewees only all only discussed one ‘sustainable practises’ which was the use of snow cannons. All agreed that without this method of snow making, many resorts would have not had all its slopes open, possibly not even allowing entire resorts to be open. One interview spoke about the importance of snow machines, saying that

*“they’re a godsend, without those machines there’s no way we could have skied down to the resort this year, we would have had to have taken the gondola”*

Another touched upon the negatives of using the machines, explaining that...

*“The problem is that you need water to create the snow, so the farmers are not happy because they need this water during the summer (but they would be the first crying if there was no snow made by these machines.)”*

The information given by this interviewee can be linked to the negative impacts of snow cannons that were discussed in the literature review.

10. How important is climate change to people who go skiing?

The final question followed that of the key themes found in the entire primary research, as the interviewees believed this issue is not something that has a strong importance to UK skiers (when booking a ski holiday)

*“People don’t think about it when they book a ski trip, all they care about is what the snows like and how much it’s gonna cost”*

But did express a feeling of hope, saying that skiers are beginning to understand the enormity of this threat to the industry and that in the near future mitigating climate change will be of far more importance to consumers and their decision making process.

#### 4.5 Phase 2: Discussion

The majority of respondents in the questionnaire (65%) were aged 18-24, showing a link between the demographic of phase 2 and the findings of phase 1, that suggest that younger consumers are the most likely to have taken a snow sports holiday during the season, with 15% of Millennials, rising to 19% of younger Millennials, compared to 9% of all adults (Mintel, 2016). Findings in phase 1 also discussed how over-45s are the most likely to find the aesthetics of a ski resort appealing, and maintaining the ‘beauty’ of the natural landscape is a key motivation among this demographic (Mintel, 2014). Given that this demographic is a huge minority in phase 2, it would suggest that the appearance of the natural landscape (the environment) is not a motivation for the majority of UK consumers.

Results of question 4 showed that price is the most important factor to respondents when they plan a ski holiday. This can be linked to findings in phase 1, that concluded the most important aspect of a ski holiday to UK skiers was cost, supported by Mintel (2014) which claimed that the number of UK consumers taking snow sports holidays fell by 27% between the winter of 2007/08 and 2012/13 (Mintel, 2014) which is a clear correlation between the number of ski holidays and the global financial crisis in 2007/8. Another

An interesting finding in phase 2 was that eco-friendliness was not important to the majority of respondents in the questionnaire (shown in figures 4e and 4h) something that all the interviewees agreed with, suggesting climate change is therefore not important to UK skiers.

Another key finding from phase 2 is that the majority of UK consumers have seen a decline in snow conditions and are aware of the threat that climate changes poses on the industry. Figure 4m shows that 65% have seen a decline in snow conditions, agreeing with the statements of all three interviewees who believe that there has been a decline in the reliability of snow conditions. Interestingly, not only are 75% of consumers aware that climate change is effecting the industry and 72.5% believe it to be the industry's biggest threat, but 67.5% believe they are the most responsible stakeholder for the causing this effects. Nonetheless, aware of their own responsibility, the majority of UK skiers are not environmentally friendly.

Something positive to discuss about the findings in phase 2 however is that the vast majority of respondents (72.5%) are willing to take more environmentally friendly ski holidays in the future, to which all interviewees supported, saying that UK consumers are becoming more environmentally conscious and are beginning to change the way the take a ski holiday.

## Chapter 5: Conclusion

### 5.0 Conclusions

The aim of this dissertation was to explore the implications climate change is having on the ski industry, as well as look into the importance of climate change to UK skiers. To reach a conclusion of this study, the objectives set out in the introduction will be examined.

#### 5.1 Climate change and how it's effecting the ski industry

Through studying the literature, it is evident that climate change is causing a negative effect on the ski industry, with implications such as warmer temperatures causing shorter seasons and less snow fall. Climate change has led to unreliable snow conditions in the European Alps, which means demand for reliable snow is rising and the use of snow cannons has seen an unprecedented growth in recent years with 15% of French ski areas covered by the machines (2Alpesnet, 2016). Other demands due to increasing popularity of skiing has also led to the destruction of the environment to build more accommodation, facilities and lifts and in turn has created a 'catch 22' situation as the new developments pollute the atmosphere and contribute to the warmer climate that is shortening the ski season.

#### 5.2 UK consumer motivations

The second objective of this study was to investigate the consumer decision making process and the UK ski market to find out what motivates UK skiers to take a ski holiday. Through reviewing the literature it is evident that there are multiple decision processes for a consumer, and that the most relevant to ski holidays were external influences such as group decisions and the economic situation. The findings in phase 1 support the notion that economic stability is potentially the most influential aspect when planning a ski holiday, best shown through the clear correlation between the total UK ski visits and the global financial crisis; trends shown in figures 2 and 3 in chapter 4.

#### 5.3 How important climate change is to UK consumers

Acknowledging price as the most important part to a consumer's holiday, this objective was completed through primary research in phase 2 which found that UK consumers do not find this issue important to them when planning a ski holiday. Questions 4, 5 and 8 of the questionnaire are evidence of this, stating that the majority of consumers do not consider eco-friendliness to be important to them when planning a holiday. Furthermore, 57.5% are not environmentally friendly during their ski trip.



#### 5.4 The future of UK ski holidays

The researcher believes that although UK skiers are aware of the implications that climate change is having on the ski industry, they are not yet willing to change the way they take a ski holiday in an effort to mitigate the effects. Climate change will only become important to UK consumers when it damages the industry so much so that it cannot be ignored any longer.

#### 5.2 Recommendations

This study concluded that although UK consumers do not find climate change relatively important, the vast majority would be willing to take more environmentally-friendly ski holidays in the future. Further research must be done to identify when climate change will become important to the majority of consumers, and if by then it is not too late, how the industry can mitigate the implications of climate change and create sustainable winter holidays. Further research can also be undertaken into what an environmentally-friendly ski holiday is, including a more in-depth exploration into the current and future practices in place to diminish the effects that climate change is having on the ski industry. If the study was repeated, respondents could then be made aware of the practices and how they would change their future ski holidays. This would lead to a more accurate assessment of how much consumers would be willing to change their ski trips and therefore give a more reliable representation of how important climate change is to UK skiers.

Limitations of the study must be acknowledged, including the re-direction of the study due to language barriers and insufficient data collection, from the importance of climate change to *all* stakeholders within the industry, to solely focusing on UK consumers. As mentioned in the beginning of chapter 5, the questionnaires were conducted while the ski resort was hosting a music festival that attracted a specific demographic of UK skiers to the resort. The researcher believes this limitation to the study has greatly effecting the results of the questionnaire, therefore an additional recommendation would be to repeat the questionnaire with more controlled variables, in order to collect a more reliable set of results that better represent UK consumers.

## Appendices

### Appendix A: Questionnaire

Please circle your answer

1. Gender

Male

Female

2. Age

18-24

25-30

31-40

41-50

51+

3. What is the average total price you pay per ski holiday (pp)?

< £200

£201-300

£301-400

£401-500

£501-£600

£600+

4. What are the 3 main factors you consider when planning a ski holiday?

Price

Resort

Time of year

Piste conditions

Tour Operator

Not my decision

Festival/Event

Eco Friendly

Other

5. How important is eco-friendliness to you when planning a ski holiday?

Not Important

Impartial

Important

Very Important

6. How many times have you visited Les Deux Alpes?

Once

2-3

4-6

7+

Ski season

7. (if more than once) How has the snowfall changed from the year of your first visit to the resort?

Less snow

More Snow

Not changed

Don't know

8. Are you environmentally conscious during your ski holiday?

Yes

No



17. (if yes) How much more would you pay?

<£50    £51-100    £101-150    £151-200    £200+

18. Climate change is the single biggest threat to the ski industry

Strongly disagree    Disagree    Neutral    Agree    Strongly agree

19. Would you consider booking a more environmentally friendly ski holiday in the future?

Yes    No

## Appendix B: Interview Transcript

1. Have you seen a change in snow conditions since you began skiing?
2. (If yes) have the changes changed the way you decide on your ski trip?

Yes, snow conditions have definitively changed in the past 10 years. 10 years ago, I went skiing in the middle of November with my ski club in resort such as *les 2 Alpes* or *l'Alpe d'Huez*. And around December 10<sup>th</sup>, I could go to “my” resort, *Corrençon en Vercors-Villard de lans* (2 resorts reunited as one in Vercors, around 1100 to 2000 meters-high). Now big resorts opens at the beginning of December and my resort hasn't opened before January in the past 3 years. The “quality” of the snow isn't different but the season is a lot shorter since it ends around the same period (April). SO now, when I want to go skiing, I've got fewer week-end. In the same time, the cost of a ski pass increased (less open days → need for money in a shorter period + inflation). In a nutshell, I do not go as often as I used to (and now that I live in Nantes, it's gonna be even worse).

3. Is climate change having a negative effect on the ski industry?

There are consequences. Since the season is shorter, it is really difficult for ski renting shop to make money. It's the same for people working in ski resort: their contract lasts the time of the season, so they have to find another job to earn money for the time “wasted”.

4. What is the biggest change in the ski industry over the past 10 years caused by climate change?

Even if it is a little more difficult for big resorts, it is much worse for smaller resorts. For example, this year, my resort opened mid-January and closed last Thursday. During this period, a lot of slope remained closed. There was a little less snow than the previous years (I mean 5 years ago, last years were not that great), but the problem is that when snow fell, it was like 15°C 2 days after so it would melt right away (2 cm last Saturday, 18°C on Monday).

5. Do you think the effects are changing the way people decide on their ski holiday?

From my experience, people who live near a ski resort or are there for long parts of the season can go skiing whenever they please, and the effects from climate change are not such a worry. When I go to ski with family and friends, we often pick and choose the days of the week that have the best conditions. But I understand for people living far from the mountains (tourists) winter holidays are the only period of the year they can go to ski so it has effected them differently. But ski resorts are still full during the holidays. I think the reaction is very different between people.

6. Do you think this issue is being made aware to people who go skiing?

For people like myself or if you live near the mountains, you see the difference since you can't ski in November/December. And also Tv news talk a lot about it every year so I think people are aware of it.

7. What do you think climate change will do to snow conditions in the next 10 years?

I think that with climate change, it will be really difficult for small resorts to survive (less money than big ones → not enough ski cannon → no snow → people takes some habits in the big resorts). On the other hand, big resorts don't have much to worry about in the next 10-20 years if they're high enough (2 to 3000m high such as les Deux Alpes or Tignes-Val d'Isere). People will only go to these places; prices might increase a lot so ski will become an activity for rich people (even more than right now)

8. To what extent do you think skiers are at their own fault for enhancing the effects of climate change

I don't think the fact that they take a plane to go to ski really has an impact. Of course it pollutes and all, but taking the plane twice a year isn't the main problem. For example, almost everyone has a smartphone, a pc or a tab that you need to load every day (for the phone). People set their home at 25°C when 21 is more than enough (think I heard the "perfect" Temp is 19°), their fridge at 3-4°C when 6-7 is enough... It's more their daily habits that have an impact. Also, it is not the same if you go to a "natural" resort or in Dubai.

9. How effective are current sustainable practices at mitigating climate change?

Without snow cannon, most of the resorts near Grenoble wouldn't have opened this year. It's really effective, even the quality of the snow is not as good (you can tell the difference if you ski a lot). The problem is that you need water to create the snow, so the farmers are not happy cause they need this water during the summer (but they would be the first crying if there was no snow made by these machines. France as we love it ^^)

10. How important is climate change to people who go skiing?

You can't make any generalization I think, it's the same as in the society in general. Some people don't care at all but some good friends of mine are big ski addicts and very dedicated to climate change and environment (one is still looking for a job because he turns down the companies who are not really involved in this issue, even if he had offers). I'd say that most people say they care about it but when it comes to make efforts/sacrifices to change it, they often disappear without a word.

## Appendix C: Ethics Form

When undertaking a research or enterprise project, Cardiff Met staff and students are obliged to complete this form in order that the ethics implications of that project may be considered.

**If the project requires ethics approval from an external agency (e.g., NHS),** you will not need to seek additional ethics approval from Cardiff Met. You should however complete Part One of this form and attach a copy of your ethics letter(s) of approval in order that your School has a record of the project.

The document ***Ethics application guidance notes*** will help you complete this form. It is available from the [Cardiff Met website](#). The School or Unit in which you are based may also have produced some guidance documents, please consult your supervisor or School Ethics Coordinator.

Once you have completed the form, sign the declaration and forward to the appropriate person(s) in your School or Unit.

### PLEASE NOTE:

**Participant recruitment or data collection MUST NOT commence until ethics approval has been obtained.**

### PART ONE

Name of applicant:	Joseph Paley
Supervisor (if student project):	Emma Bettinson
School / Unit:	Cardiff Metropolitan University
Student number (if applicable):	St20041324
Programme enrolled on (if applicable):	International Tourism Management
Project Title:	An exploration into the effects of climate change on the ski industry and the importance of this issue to UK skiers.
Expected start date of data collection:	11/12/2016
Approximate duration of data collection:	2 Months
Funding Body (if applicable):	Click here to enter text.
Other researcher(s) working on the project:	If your collaborators are external to Cardiff Met, include details of the organisation they represent.
Will the study involve NHS patients or staff?	No



Will the study involve human samples and/or human cell lines?	No
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Does your project fall entirely within one of the following categories:	
Paper based, involving only documents in the public domain	No
Laboratory based, not involving human participants or human samples	No

Practice based not involving human participants (eg curatorial, practice audit)	No
Compulsory projects in professional practice (eg Initial Teacher Education)	No
A project for which external approval has been obtained (e.g., NHS)	No

If you have answered YES to any of these questions, expand on your answer in the non-technical summary. No further information regarding your project is required.

If you have answered NO to all of these questions, you must complete Part 2 of this form

In no more than 150 words, give a non-technical summary of the project

An investigation into climate change and the negative effects it is having on the ski industry, with a focus on the European Alps. Acknowledging these effects, further study [through primary research] into how important this issue is to UK skiers, represented through the significance climate change has during the decision making process on choosing their ski holidays.

**DECLARATION:**

**I confirm that this project conforms with the Cardiff Met Research Governance Framework**

**I confirm that I will abide by the Cardiff Met requirements regarding confidentiality and anonymity when conducting this project.**

**STUDENTS: I confirm that I will not disclose any information about this project without the prior approval of my supervisor.**

Signature of the applicant:

Date:

**FOR STUDENT PROJECTS ONLY**

Name of supervisor:

Date:

Signature of supervisor:

**Research Ethics Committee use only**

Decision reached:

Project approved

Project approved in principle

Decision deferred

Project not approved

Project rejected

Project reference number: [Click here to enter text.](#)

Name: [Click here to enter text.](#)

Date: [Click here to enter a date.](#)

Signature:

Details of any conditions upon which approval is dependant:

[Click here to enter text.](#)

**PART TWO**

**A RESEARCH DESIGN**

A1 Will you be using an approved protocol in your project?

No

A2 If yes, please state the name and code of the approved protocol to be used<sup>1</sup>

n/a

A3 Describe the research design to be used in your project

Methods of data collection

- Semi structured interviews to 3 experienced ski holiday-makers
- Closed questionnaire with sample size approx. 40 respondents

Methods of analysis

- Thematic analysis
- Content analysis

Will be visiting the resort over Christmas break to conduct the questionnaires. Already have a level of knowledge about the resort from numerous visits while studying on Erasmus programme in the region.

Interviews to experienced skiers to obtain a more in-depth information and importance of the issue to UK skier's therefore qualitative data more appropriate. 3 respondents chosen to ensure validity and reliability of data. To understand what attitude the industry has towards climate change. These stakeholders have seen both sides of the industry (have all been both consumer and worked in the industry) and to understand how the topic's issues have impacted the ski industry over the past 3 decades.

Thematic analysis will be used to analyse the qualitative data of the semi-structured interviews and find the more in-depth, core themes of UK skiers and their attitudes towards this topic.

Questionnaire targeted to the consumers. Closed questions. Self-completing questions. Sample will be those who are visiting Les Deux Alpes and are British. Target sample is young holiday goers who will experience the future changes of ski tourism. Access to the sample population will be handouts to the public at the resort.

Questionnaire aims to find out how much of a presence climate change has in the mind on the consumer and explore how far they would change their skiing holiday habits, through the case study resort Les Deux Alpes.

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<sup>1</sup> An Approved Protocol is one which has been approved by Cardiff Met to be used under supervision of designated members of staff; a list of approved protocols can be found on the Cardiff Met website here

Use content analysis of the quantitative data collected from the questionnaires so to analyse the 40 respondents sample size in a systematic manner and gain a brief understanding of UK skiers and the issue of climate change.

A4 Will the project involve deceptive or covert research?	No
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A5 If yes, give a rationale for the use of deceptive or covert research

[Click here to enter text.](#)

A6 Will the project have security sensitive implications?	No
---	----

A7 If yes, please explain what they are and the measures that are proposed to address them

[Click here to enter text.](#)

## **B PREVIOUS EXPERIENCE**

B1 What previous experience of research involving human participants relevant to this project do you have?

At A-level study (Geography) have experience of interviewing the public on field trips and creating appropriate interviews.

As a 3<sup>rd</sup> year student of Cardiff Metropolitan University, have conducted questionnaires and interviews in several modules including PDP.

**B2 Student project only**

What previous experience of research involving human participants relevant to this project does your supervisor have?

Experience of supervisory undergraduate and post graduates and undertaking PHD

## **C POTENTIAL RISKS**

C1 What potential risks do you foresee?

Potential risk of gaining biased information from primary resources.

Risk of not being able to get to the resort (logistical issues e.g. Delayed flights) to gather primary resources

Arranging interviews – causing inconvenience to interviewees during their working day.

Risks of not meeting the research deadlines

A risk to the participants would be the confidentiality of the data they provide.

Personal information and data storage must be taken into account.

Personal safety may also be at risk

C2 How will you deal with the potential risks?

Consent for the interviews will be gained via a participant consent form which will be signed before the interview. Interviews times will be arranged in advance at a time and place convenient for the interviewees. The researchers' whereabouts will be known to a third person.

The questionnaires will state terms of participation and confidentiality on the header.

Completion of the questionnaire is taken as consent and will be stated on the header.

If participants do not wish to contribute, then they need not complete the questionnaire.

If participants feel uncomfortable during any part of the research gathering process withdrawal from the process can be immediate.

Email/s confirming that key people have agreed to be interviewed are attached

All raw data will be held on a secure password protected external hard drive and paper copies will be kept in a locked cupboard. Access to the raw data will be restricted to the researcher

Interviews will take place in public places and mobile phone will be carried at all times.

When submitting your application you **MUST** attach a copy of the following:

- All information sheets
- Consent/assent form(s)

An exemplar information sheet and participant consent form are available from the Research section of the Cardiff Met website.

## **An exploration into the effects of climate change on the ski industry and the importance of this issue to UK skiers.**

### **Project summary**

An investigation into climate change and the negative effects it is having on the ski industry, with a focus on the European Alps. Acknowledging these effects, further study [through primary research] into how important this issue is to UK skiers, represented through the significance climate change has during the decision making process on choosing their ski holidays.

### **Why have you been asked to participate?**

You have been asked to participate because you fit the profile of the population being studied; that is, you are a current stakeholder in the ski industry

During the interview you will be asked about the sustainability efforts of the resort and future plans that are to be put in place against the issues of climate change. You will also be asked about your personal opinions of the resort and the effect of climate change on the ski industry. Your participation is entirely voluntary and you may withdraw at any time.

### **Project risks**

The research involves the completion of a questionnaire and participation in an interview and which will be recorded for later analysis. We are not seeking to collect any sensitive data on you; this study is only concerned with behaviours towards climate change and the ski industry and will not discuss any immoderate behaviours. We do not think that there are any significant risks associated with this study. However, if you do feel that any of the questions are inappropriate then you can stop at any time. Furthermore, you can change your mind and withdraw from the study at any time – we will completely respect your decision.

### **How we protect your privacy**

All the information you provide will be held in confidence. We have taken careful steps to make sure that you cannot be directly identified from the information given by you. Your personal details (e.g. signature on the consent form) will be kept in a secure location by the research team. When we have finished the study and analysed all the information, the documentation used to gather the raw data will be destroyed except your signed consent form which will be held securely for 5 years. The recordings of the focus groups/ interview will also be held in a secure and confidential environment during the study and destroyed after 5 years.

YOU WILL BE OFFERED A COPY OF THIS INFORMATION SHEET TO KEEP

If you require any further information about this project then please contact:

Joseph Paley, Cardiff Metropolitan University

Cardiff Metropolitan University email: [st20041324@cardiffmet.ac.uk](mailto:st20041324@cardiffmet.ac.uk)

## Appendix E: Participant consent form

### **PARTICIPANT CONSENT FORM**

Cardiff Metropolitan University Ethics Reference Number:

Participant name or Study ID Number:

Title of Project:

Name of Researcher:

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**Participant to complete this section:**

**Please initial each box.**

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. [ ]
  
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. [ ]
  
3. I agree to take part in the above study. [ ]
  
4. I agree to the interview / focus group / consultation being recorded [ ]
  
5. I agree to my quotes being attributed to me [ ] Yes No [ ] [ ]
  
6. I agree to my organisations being named in all publications [ ] [ ]

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Signature of Participant

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Date

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Name of person taking consent

---

Date

---

Signature of person taking consent

## Appendix F : Semi-Structure Interview

Order of semi structured Interview	Discussed
<b>1) Ask respondent approval to use recording systems</b> <b>Ask respondent to sign and acknowledge consent form</b>	
<b>2) Ask Background questions</b> Confirm information about; <ul style="list-style-type: none"> <li>• Experience of skiing</li> </ul>	
<b>3) Discuss about climate change</b> Probes <ul style="list-style-type: none"> <li>• What they know about climate change</li> </ul>	
<ul style="list-style-type: none"> <li>• Effects of climate change</li> </ul>	
<ul style="list-style-type: none"> <li>• How has industry changed because of it</li> </ul>	
<b>4) Discuss issues to ski holidays</b> Probes <ul style="list-style-type: none"> <li>• Is climate change important to skiers</li> </ul>	
<ul style="list-style-type: none"> <li>• Are skiers aware of the issues</li> </ul>	
<ul style="list-style-type: none"> <li>• Who are to blame?</li> </ul>	
<ul style="list-style-type: none"> <li>• Does climate change effect decisions on ski holidays</li> </ul>	
<b>5) Discuss the future of UK ski holidays</b>	
<ul style="list-style-type: none"> <li>• Will it change the way ski holidays are take</li> </ul>	
<ul style="list-style-type: none"> <li>• Will skiers be more eco-friendly in future</li> </ul>	
<ul style="list-style-type: none"> <li>• What will ski industry look like in the future</li> </ul>	



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