

**TOURIST UNDERSTANDING OF AND ENGAGEMENT WITH  
THE CLIMATE CHANGE IMPACTS OF HOLIDAYS**

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## **Abstract**

Climate change has become a very important global issue and has risen to the top of the international political agenda. Tourism's contribution to climate change has been the subject of considerable research and debate, with the UNWTO estimating the tourism industry generates 5% of global carbon dioxide emissions. Research shows air travel dominates the overall greenhouse gas emissions from the international tourism industry. The rapid growth of low-cost carriers has opened up international holidays to the masses, as well as enabling more wealthy members of society to become hyper-mobile tourists. The expansion in the aviation market has realised people's social and cultural aspirations for international travel and has resulted in air travel becoming firmly embedded in contemporary tourism practices. Although air travel contributes the bulk of tourism's greenhouse gas emissions, it is the wider tourism practice that needs to be addressed, as tourists engage in air travel in order to fulfil their desires for international holidays, rather than specifically consuming flights because of 'a love to fly'.

Treating holidays as a social practice, in which the type of holiday, destination and transport mode are considered integral to the holiday package, this research examines tourist understanding of and engagement with climate change. The aim of this study is to analyse the role that the climate change impacts of holidays play in the decisions of tourists in order to develop a conceptual framework of the barriers to behavioural change. A mixed methods strategy has been employed, based on a sequential exploratory design. The results of focus group research in the initial qualitative stage of data collection and analysis were used in the formulation of the questionnaire survey adopted in the second quantitative stage of the study. The survey generated 647 useable questionnaires and was conducted in the Bournemouth postcode area using a drop and collect technique. A cluster

sampling design was adopted based on postcode sectors and a probability sampling method was used at each stage of the process.

The findings of the research indicate that levels of awareness of the impacts of flying on climate change are high, but awareness and understanding of other ways that holidays contribute to climate change is low. Climate change impacts do not feature in the thoughts of the vast majority of tourists when they are planning their holidays, and only a very small minority of respondents in the questionnaire survey said that they think about the impacts their holidays have on climate change. Although there were high levels of awareness of the impacts of air travel on climate change, this did not manifest in tourists' holiday decisions and their attitudes towards behavioural change. The most salient barriers to behavioural change in a holiday context are a combination of internal, external and structural constraints. Cluster analysis shows that different barriers to action are more prominent for different groups and that some groups identify fewer barriers to behavioural change than others. A pattern reflected throughout the analysis was that respondents that had taken the most overseas holidays in the last 3 years were also those that exhibited lower levels of awareness of the contribution of holidays to climate change, were less likely to consider climate change impacts as being important when planning their holidays, and expressed the strongest reluctance to change their future holiday behaviour. The results of the research illustrate the magnitude of the barriers to action and demonstrate the enormity of the task facing policymakers in achieving significant changes in holiday taking behaviour.

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## **AUTHOR'S DECLARATION**

The findings of the focus group research conducted in the first stage of data collection have been published in the proceedings of a conference (TTRA 2009). The conference paper has been extended and published as a journal article (Hares et al. 2010). The contents of the journal article are re-produced in part in a number of chapters of this thesis (Chapters 2, 3, 4, 5 and 8). In particular, the results of the focus group research presented in Chapter 5 are based on the structure of the findings presented in the journal article. Acknowledgement of the journal article is again provided in Chapter 5, and copies of the article and the TTRA conference paper are included in Appendices 5.1 and 5.2.

# CHAPTER 1: INTRODUCTION

## 1.1 INTRODUCTION

The purpose of this research is to investigate the extent to which considerations about impacts on climate change feature in the holiday decisions of tourists. Climate change has become one of the most widely debated topics in political, scientific and media communities around the world. It is now common for climate change related articles to appear on the front pages of British newspapers and to feature on television news programmes. Tourism is increasingly being drawn into the climate change debate as the tourism industry is widely considered to be a significant contributor to the greenhouse gases (GHGs) that cause global climate change.

## 1.2 RATIONALE

Climate change has become a very important global issue and has risen to the top of the international political agenda over the last couple of decades. It has been suggested that climate change is the greatest challenge facing our generation (Benn 2007). Whilst some scepticism of the human influence on climate change still exists in certain scientific, political and media circles, the overwhelming consensus of scientific evidence suggests that human activity is causing global warming. According to the Intergovernmental Panel on Climate Change (IPCC 2007), the fact that the climate system is warming is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. The IPCC (2007, p.13) warns that:

“Continued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century”.



Carbon dioxide (CO<sub>2</sub>) is the most important of the anthropogenic GHGs due to the volume being released and the fact that it is such a long-lived gas in the atmosphere (Green 2009; Parker 2009). In addition to the environmental impacts of climate change, significant economic consequences have been identified. The Stern Review (Stern 2006) estimates that if governments do not respond to the risks of climate change, the overall costs to the global economy will be between 5% and 20% of global gross domestic product (GDP) each year, now and forever. In contrast, the costs of reducing GHG emissions to avoid the worst impacts of climate change will cost around 1% of global GDP each year.

As a result of the scientific evidence, governments have started to address the problems of global climate change. In 1992, the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) was the first step in the process of stabilising GHG concentrations. To make these carbon emission commitments binding, the UNFCCC countries agreed the Kyoto Protocol in 1997. Under the Kyoto Protocol, which finally came into force in 2005, developed nations pledged to cut carbon emissions as measured by six GHGs by at least 5% in the five-year commitment period 2008-2012, compared with the base year of 1990 (United Nations 1998). As GHG emissions continue to rise, more ambitious action and targets are required. The European Union (EU) has committed itself to reducing GHG emissions by 20% by 2020, compared with the base year of 1990 (European Commission 2007). In the United Kingdom (UK), the Climate Change Act 2008 outlines targets to reduce GHG emissions by 80% by 2050 against the base year of 1990 (Climate Change Act 2008). An interim target for the year 2020 has been set for the UK annual equivalent carbon budget to be 34% lower than the 1990 baseline (Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009). As of December 2012, the UK Government was still deferring the decision on whether to include international aviation and shipping emissions within these climate change targets (DECC 2012).

In terms of the relationship between tourism and climate change, early research studies focused on the impacts that climate change is having on tourism through changes in weather patterns affecting the conditions at tourist destinations (see, for example, Koenig and Abegg 1997; Wall 1998; Breiling and Charamza 1999).

More recently there has been a growing acknowledgement that more research needs to focus on the reciprocal impacts that the tourism industry is having on climate change (Becken 2007; Hunter and Shaw 2007). There is a growing body of research investigating the impacts of tourism on climate change, predominantly by attempting to measure the overall emissions of greenhouse gases from the tourism industry (see, for example, Gössling et al. 2005; Becken and Patterson 2006; Dubois and Ceron 2006b; UNWTO-UNEP-WMO 2008; Peeters and Dubois 2010). It is estimated that the tourism sector currently contributes 5% of global CO<sub>2</sub> emissions (UNWTO-UNEP-WMO 2008), with the majority of these emissions coming from air travel (Peeters and Dubois 2010). The contribution of tourism to global carbon emissions is widely predicted to increase in the future as the emissions from aviation continue to grow whilst other industry sectors reduce their emissions (Dubois and Ceron 2006b; Anable and Shaw 2007; Bows and Anderson 2007; Anger and Kohler 2010).

In addition to the scientific studies focusing on the technical or supply-side of the industry, a small number of studies have started to investigate the demand-side of the industry. These are mainly small-scale qualitative projects examining consumer attitudes towards climate change and air travel (see, for example, Becken 2007; Randles and Mander 2009; Cohen et al. 2011). According to the literature, the emissions from air travel dominate the overall GHG emissions from the international tourism industry (UNWTO-UNEP-WMO 2008; Peeters and Dubois 2010). Hence the focus of these studies has been on consumer attitudes towards flying. This research study differs by focusing more specifically on attitudes towards holidays and climate change impacts, rather than attitudes towards air travel and climate change impacts. From a social practices approach (Spaargaren and Van Vliet 2000; Spaargaren 2003) it can be argued that tourists engage in air travel as part of an overall holiday practice. In a leisure context, people undertake air travel because it is a means of transport to a holiday destination. Thus, air travel is a derived demand and to not investigate the wider reasons for flying is to miss the bigger picture. Therefore, this research examines whether thoughts about climate change impacts are affecting the holiday behaviour of tourists. Whilst air travel is still a major factor in this research, it is holidays that are the central focus.

The ability of tourists to reduce emissions from the tourism industry through direct action and changes in their consumption behaviour is a crucial area to explore (Dubois and Ceron 2006b). At a time when technological efficiencies with aircraft design and fuel burn are not keeping pace with increases in passenger volumes (Peeters et al. 2006; Lee et al. 2009; Anger 2010) and market-based changes such as taxation on jet fuel or aircraft emissions are politically difficult to enforce (Michaelis 1997), behavioural change by tourists in the way they engage in holiday practices, including their propensities to fly, could potentially offer a solution to the ever growing GHG emissions from the tourism industry (Gössling et al. 2007). However, achieving a significant degree of behavioural change amongst tourists is likely to be a challenging and protracted process (Böhler et al. 2006). This study explores tourists' awareness, attitudes and behaviour towards holidays and climate change impacts and provides valuable insights into this important area of research.

## **1.3 AIM AND OBJECTIVES**

### **1.3.1 Aim**

The aim of this research study is to analyse the role that the climate change impacts of holidays play in the decisions of tourists in order to develop a conceptual framework of the barriers to behavioural change.

In order to achieve this aim, six specific objectives were established.

### **1.3.2 Objectives**

1. To identify the levels of awareness amongst tourists of the impacts holidays have on climate change.
2. To establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists.

3. To explore the attitudes of tourists towards climate change and changing holiday behaviour.
4. To identify the behavioural changes that tourists are engaging with in a holiday context to reduce their individual impacts on climate change.
5. To analyse the major barriers to tourists adopting less carbon-intensive holiday practices and to determine which barriers are more salient for different groups of the population.
6. To develop a conceptual framework of the most salient barriers to behavioural change.

## **1.4 OVERVIEW OF THESIS**

The thesis consists of eight chapters. This section provides a brief overview of each of these chapters.

Chapter 1 contains the rationale for this research and sets out the aim and objectives of this study.

Chapter 2 is the first of two literature review chapters. This chapter focuses on the relationship between tourism and climate change impacts. The different ways in which the tourism industry contributes to global climate change is outlined and discussed. Particular attention is drawn to the dominant role of greenhouse gas emissions from air travel. The predicted future growth in air travel is detailed and the implications of this on the subsequent forecasted increases in greenhouse gas emissions from the tourism industry assessed. Potential options for reducing tourism's contribution to climate change are outlined. The limitations with technological efficiencies and market-based changes are discussed. The argument is made that significant behavioural change by tourists is required if GHG emissions from the tourism industry are to be contracted in the future.

Chapter 3 is the second literature review chapter and concentrates more on the theoretical and conceptual aspects relating to behavioural change and holidays. Previous studies that have investigated tourists' awareness of the relationship between tourism and climate change are evaluated. Barriers to behavioural change identified in the climate change engagement and pro-environmental behaviour literature are identified and their relevance to the holidays and climate change context discussed. A number of prominent psychology theories relating to behavioural change are examined and their applicability to this study considered. Environmental sociology and sustainable consumption perspectives are also reviewed. The Social Practices Model (Spaargaren 2003), with its emphasis on structural constraints in society in addition to the agency of an individual to act, is identified as having particular relevance to this research study. The chapter concludes by establishing the research gaps discovered in the literature review.

Chapter 4 details the methodology and research methods applied in this study. The research approach is outlined and the justifications for using a mixed methods strategy are demonstrated. The study was conducted in two stages and employed a sequential exploratory design (Creswell 2003; Saunders et al. 2007). The first stage involved qualitative data collection and analysis. Focus groups were conducted as an exploratory research tool to identify any important factors not already highlighted in the limited tourism and climate change literature. The results of the focus group research were used in the second quantitative stage of the study. A questionnaire survey was designed that was informed by the findings of the literature review and the focus group research. The questionnaire built on the rich qualitative findings of the focus groups and produced more generalisable results. Thorough analysis of the questionnaire survey enabled all six objectives of the research to be achieved.

Chapter 5 presents the findings of the focus group research conducted in Stage One of data collection. The focus group findings contributed to four of the six research study objectives. Participants' understanding of climate change was investigated. Discussions then moved on to exploring how holidays might contribute to climate change. As a task in the focus groups, participants were asked to identify all the important factors they think about when planning their holidays. This task was

included to see if climate change was a factor considered by tourists and, if it was, to reveal what role thoughts about climate change impacts play. The final part of the group discussions concentrated on exploring ways that holiday and travel behaviour could potentially change in the future in order to reduce the impacts of tourism on climate change.

Chapter 6 is the first of two chapters discussing the results of the questionnaire survey implemented in Stage Two of data collection. Chapter 6 begins with descriptive data on the demographic characteristics and holiday taking activities of respondents. Awareness of the impacts of holidays on climate change is examined and the role that climate change considerations play in holiday decisions is established. Attitudes towards changing holiday behaviour for climate change reasons are analysed and behavioural change activities currently being engaged in by respondents are reported. The findings presented in this chapter illustrate a pattern of results concerning the most frequent overseas tourists.

Chapter 7 focuses on the analysis of the barriers to action preventing tourists engaging more fully with the climate change impacts of their holidays. The barriers to action were identified in the literature review and focus group research, and their strength determined in the questionnaire survey. The saliency of the internal, external and structural barriers to behavioural change is assessed. The results of a factor analysis conducted on the barriers to action are presented. A cluster analysis was also performed on the barriers to action. A profile of the different cluster groups is produced and the means of factor scores by cluster calculated.

Chapter 8 is the conclusion chapter of the thesis and fully integrates the findings of the qualitative and quantitative research conducted. It begins with the presentation of the conceptual framework of the barriers to behavioural change in a holidays and climate change context. The rationale justifying the design of the conceptual framework is provided. The findings of the study are then reviewed with respect to the objectives of the research. The empirical and theoretical contributions of the research are outlined and discussed, followed by the practical implications of the

study for policymakers and the tourism industry. The limitations of the study are then acknowledged and suggestions made for further research.

## **CHAPTER 2: TOURISM AND CLIMATE CHANGE**

### **2.1 INTRODUCTION**

The literature review related to this research is divided into two chapters. The first of these chapters begins with an overview of the relationship between tourism and climate change. The ways in which the tourism industry contributes to climate change are detailed. In particular, the contribution of air travel to tourism's impact on greenhouse gas emissions is assessed. Potential options for reducing tourism's contribution to climate change through the reduction of emissions from aviation are then outlined. The chapter ends with a conclusion section on the literature evaluated and discusses the need for behavioural change by tourists. This leads into the second chapter of the literature review, which focuses on the engagement of tourists with climate change issues and presents a more theoretical application of models and theories relevant to behavioural change in a tourism and climate change context.

### **2.2 THE RELATIONSHIP BETWEEN TOURISM AND CLIMATE CHANGE**

#### **2.2.1 Introduction**

Global climate change has significant implications for the tourism industry. The impacts of changing weather patterns and climatic conditions at tourism destinations could have a devastating impact on the volumes of tourism arrivals and receipts in the coming decades. Despite the potentially high-risk scenarios for the tourism industry, until recently relatively little attention was paid to tourism and climate change (Becken 2007; Hunter and Shaw 2007). Early research publications on tourism and climate change initially focused on the threat of climate change to tourism destinations, and in particular on the potential impacts of climate change on tourism activities (Koenig and Abegg 1997; Wall 1998; Breiling



and Charamza 1999). Studies have also investigated the implications of global climate change for tourism flows and seasonality (Maddison 2001; Gössling and Hall 2006; Amelung et al. 2007). The relationship between tourism and climate change is not one-way however. Whilst changes in global climatic conditions will undoubtedly have an impact on the tourism industry, the tourism industry is itself having a direct impact on climate change.

### **2.2.2 Tourism's contribution to climate change**

Tourism is a highly energy-intensive industry and has only recently attracted attention as an important contributor to climate change through GHG emissions. In recent years, academic research has begun to investigate the impacts tourism is having on global climate change (Gössling et al. 2005; Becken and Patterson 2006; Dubois and Ceron 2006b). International tourism organisations have also recognised the importance of climate change to the tourism industry and have convened a number of conferences and summits to debate the issues. In 2007, the United Nations World Tourism Organization (UNWTO), the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), with the support of the World Economic Forum (WEF) and the Swiss Government, convened the Second International Conference on Climate Change in Davos, Switzerland (UNWTO 2007a).

The Second Conference built on the results of the First International Conference held in Djerba, Tunisia in 2003. Whilst the First Conference acknowledged the two-way relationship between tourism and climate change and accepted that the tourism industry has an obligation to minimise its emission of greenhouse gases, the output of the conference, the Djerba Declaration (UNWTO 2003), focused its message on adaptation to climate change rather than mitigation of the industry's impacts. In contrast, the declaration from the Second Conference, the Davos Declaration (UNWTO 2007a), called for governments and international organisations, the tourism industry and destinations, tourism consumers, and research and communication networks to all work towards mitigating greenhouse gas emissions from tourism, particularly from transport and accommodation.

### **2.2.3 Air travel**

Early studies suggested that transport may be responsible for over 90% of tourism's overall contribution to global climate change (Gössling 2002). Within the tourism transport sector, research shows that air travel dominates GHG emissions. Gössling and Peeters (2007) conclude that in an average holiday or short break involving air travel, 60-95% of its contribution to global warming will be caused by the flight. Focusing specifically on European tourism, Peeters et al. (2007) estimated that air transport was responsible for 80% of total tourism GHG emissions in the EU in 2000. In a more recent study that investigated CO<sub>2</sub> emissions from tourism, rather than total GHG emissions, Peeters and Dubois (2010) found that transport contributes 72% of all CO<sub>2</sub> emissions from tourism (domestic and international), with air travel alone contributing 43% of the total, even though it is only used in 17% of total tourist trips. When determining figures for international tourism trips only, Peeters and Dubois (2010) calculated that air travel contributes 63% of total CO<sub>2</sub> emissions.

The most comprehensive research to date into tourism's overall contribution to human-induced climate change was undertaken as a commissioned report in advance of the Second Conference on Climate Change in Davos. This UNWTO-UNEP-WMO (2008) report was used to inform the discussions at the conference and was later published to a wider practitioner and academic audience. The report divides the tourism industry (which includes domestic and international tourism) into three main sub-sectors – transportation, accommodation and activities, and bases its calculations and estimates on data from 2005. In terms of CO<sub>2</sub> emissions, the report estimates that the tourism industry contributes 5% of global CO<sub>2</sub> emissions (UNWTO-UNEP-WMO 2008). Transport generated the largest proportion of CO<sub>2</sub> emissions (75%) from tourism in 2005. Carbon dioxide emissions from accommodation constituted 21% of the total, and emissions from activities 4%. The 75% total contribution of CO<sub>2</sub> emissions from transport is made up by a 40% contribution from air transport, 32% contribution from car transport and 3% contribution by other transport modes (UNWTO-UNEP-WMO 2008).

Carbon dioxide is the most important greenhouse gas from human activities in terms of the impact on climate change (Parker 2009). This is because CO<sub>2</sub> is a long-lived greenhouse gas (remaining in the atmosphere for between 50 and 200 years) and is also the gas produced in the greatest quantities (Green 2009; Parker 2009). In addition to CO<sub>2</sub> emissions, however, other greenhouse gases also make significant contributions to anthropogenic climate change (IPCC 2007). The release of other greenhouse gases is particularly relevant for the emissions from aviation (UNWTO-UNEP-WMO 2008). Air travel contributes to climate change through the emissions of CO<sub>2</sub>, nitrogen oxides (NO<sub>x</sub>), sulphur dioxide, aerosols and their precursors (soot and sulphate), and increased cloudiness in the form of persistent linear contrails and induced cirrus cloudiness (Lee et al. 2009; Anger 2010). As CO<sub>2</sub> emitted at altitude is no more damaging than CO<sub>2</sub> emitted at ground level, the multiplying factor that is often applied in the literature to the climate change impacts of aviation is due to the other greenhouse gases and water vapour emitted from air travel (Kemp 2009). This multiplying factor, widely referred to as ‘radiative forcing’, is applied due to the increased impacts on global warming through the radiative energy absorbed by the Earth’s surface by the release of water vapour and greenhouse gases from aircraft directly into the upper troposphere and lower stratosphere (Kemp 2009; Lee et al. 2009).

The results of the UNWTO-UNEP-WMO report support the findings of the other research studies examined and demonstrate that mitigation initiatives in the tourism sector will need to strategically focus on certain specific forms of tourism, particularly those connected with air travel, if substantial reductions in GHG emissions are to be achieved.

The growth, and predicted future growth, in demand for air travel is also a major concern. International tourism, and to a lesser extent domestic tourism, play a major role in the growth of air travel (Becken 2002). In 2006, 46% of all international tourist arrivals were by air (UNWTO 2007b). Five years on, the proportion of tourists using air to travel to their international destination had increased to over half (51%) (UNWTO 2012). Global growth rates of air travel have been in the order of 5-6% per year in the period 1970-2000, and are predicted to continue growing at annual rates of 5% up to 2020 (Gössling and Peeters 2007).

Predicted increases of CO<sub>2</sub> emissions from aviation between 1990 and 2050 are generally in the range of 400-1000% (Anable and Shaw 2007), and indicate that CO<sub>2</sub> emissions from air travel could rise to more than 15% of total CO<sub>2</sub> emissions from all sources by the middle of the century (Dubois and Ceron 2006b). In addition to the increasing demand for flights, one of the main reasons that emissions from air travel are predicted to rise so rapidly when other industries are reducing their overall contributions is that emissions from international aviation are not covered by the UNFCCC international policy control, and thus are not included in national GHG inventories (Michaelis 1997).

Whilst air travel clearly dominates tourism's contribution to climate change, putting this into perspective against total global GHG emissions from all sources, aviation contributes between 3.5% (Penner et al. 1999) and 4.6% (Gössling and Peeters 2007). Proponents of the airline industry use the small proportion of total global GHG emissions from aviation as evidence that air travel receives disproportionate blame for global warming from the media, non-governmental organisations (NGOs), governments and international bodies (Lawrence 2009). Defenders of the aviation industry (see, for example, Lawrence 2009) also use the argument that air travel should not be limited because it underpins the world's largest economic sector, tourism, and to do so would have profound economic and social consequences. Whilst these points may have some validity, according to Bows and Anderson (2007), the aviation industry is the fastest growing source of carbon emissions of any sector in the UK economy, and is also the fastest growing source of greenhouse gas emissions in the EU (Bows et al. 2009a). In addition, Chapman (2007) argues that the high levels of emissions from aviation, coupled with the forecasted growth for the sector, make it the most unsustainable mode of transport currently available. Therefore, reducing the GHG emissions from air travel is fundamental to reducing the overall emissions from tourism.

#### **2.2.4 Hyper-mobility and increasing volumes of international travel**

International tourist arrivals grew to 983 million in 2011 and are forecast to grow to 1.8 billion in 2030 (UNWTO 2012). With the exception of occasional shocks, such as the global financial crisis that led to a reduction in international travel in

both 2008 and 2009, international tourist arrivals have shown virtually uninterrupted growth from 277 million in 1980 to 528 million in 1995, and 983 million in 2011 (UNWTO 2012). Tourism in developed countries has changed substantially in the past decade, with a general trend towards more frequent, but shorter trips, and trips to more distant locations (Gössling and Peeters 2007), a pattern referred to by Høyer (2000) as hyper-mobility. This view is supported by the case of the UK, where, in the period 2002-2006, long-haul holidays grew at the fastest rate. The average annual increase in the number of holidays to European countries by UK residents between 2002-2006 was 2.3%, compared with 2.5% for North America and 11.3% for other long-haul countries (ONS 2008). Holidays abroad by UK residents remained static in 2007 and 2008, as the economic downturn took effect, with the number of holidays per year peaking at a high of 45.5 million in 2008 (ONS 2010).

In 2009 and 2010, the number of overseas holidays taken by UK residents fell as the impacts of the global financial crisis were felt strongly in the UK (ONS 2011). Although the number of overseas holidays taken fell during the period 2006-2010, the decrease in holidays to long-haul destinations was less than the fall in holidays to short-haul destinations. The number of holidays taken in Europe by UK residents fell by 6.1% during this period, compared with a reduction of 3.9% for North America and just 1.0% for other long-haul destinations (ONS 2011). Despite these recent declines in international holidays by UK residents, the long-term trend is still of high growth in international travel over the last 40 years. The number of overseas holidays taken has grown substantially from 5.7 million in 1970 to 21.3 million in 1990, and 36.4 million in 2010 (ONS 2011). The proportion of long-haul holidays has increased from 11.1% in 1970 to 15.7% in 1990, and 23.4% in 2010 (ONS 2011). The length of stay has also decreased during this period, despite the increase in the proportion of long-haul holidays. The average number of nights per overseas trip has decreased from 16 nights in 1970 to 10.9 nights in 2010 (ONS 2011).

Hyper-mobility has been facilitated by the availability of relatively low-fare air travel. This low-fare air travel has spread the idea that international travel is possible at virtually no financial cost (Gössling and Hall 2008). Air travel in the

UK has been made easier by the cheaper and more abundant flights being offered by low-cost airlines, with the added convenience of flying from regional airports (Chapman 2007). In the UK, low-cost airlines have opened up new opportunities for international holidays and short-breaks for middle-income groups and others that were previously excluded from air travel (Shaw and Thomas 2006). In the UK, access to air travel has become affordable to many residents; one half (50%) of adults flew in 2008, with 23% making one return flight, and 27% two or more return flights (Department for Transport 2008). The proportion of UK adults who used air travel fell slightly in 2010 to 47% (Department for Transport 2010). The proportion of UK adults making one return flight in 2010 was 20%, with 27% making two or more return flights (Department for Transport 2010).

It is not just in the UK and Europe, however, where air travel has turned from a luxury form of mobility for the wealthy into a contemporary form of transport for the masses, as a result of the rise of the low-cost carrier. The growth in low-cost carriers across the world has resulted in a reduction in air fares for passengers and has increased the opportunities to travel (Nilsson 2009). The low-cost carrier concept was developed by Southwest Airlines in the USA in 1971, and the model has been adopted by other operators in North America, Europe, Asia and Australasia (Liang and James 2009). The potentially very large emerging markets for air travel, such as China and India, are an additional barrier to the mitigation of emissions from aviation (Bows et al. 2009a). Since 2003, low-cost carriers have grown substantially in Asia, with the most dynamic growth in India (Liang and James 2009). A number of low-cost carriers have also launched in China, but it was the decision of the Malaysian airline AirAsia to reposition itself as a low-cost operator that has had the most marked impact on the Asian airline market (Liang and James 2009).

According to the UNWTO (2012), China recorded a 32% annual increase in expenditure on international tourism in 2011, making it the third largest outbound tourism market. India also experienced a large growth in international tourism expenditure (33%) in 2011, moving up two places to become the 22<sup>nd</sup> largest source market (UNWTO 2012). The other two BRIC (Brazil, Russia, India and China) countries also saw substantial expenditure growth, with Russia becoming

the seventh largest outbound market as a result of annual growth of 22%, whilst Brazil jumped six places to twelfth position due to annual growth of 30% (UNWTO 2012). The expansion of low-cost airlines serving the BRIC nations and the fast developing Asian economies, in addition to the established low-cost operators in Europe and North America, will only add to the growth in international tourism and the subsequent increases in GHG emissions from aviation. In addition to the inter-regional international tourism facilitated by low-cost airlines, there has also been a considerable expansion in the network of long-haul flights offered by traditional scheduled airlines to and from the BRIC nations. For example, between 2001 and 2011, the number of direct flights between the UK and the four BRIC nations more than doubled (Department for Transport 2012). In 2011, there were 11 destinations in the BRIC nations that were connected directly to Heathrow by daily services (Department for Transport 2012).

The demand for air travel by leisure tourists is very much a derived demand for holidays and short breaks. The increasing demand for holidays is driven by a number of factors, including rising disposable income, decreasing insularity and more frequent exposure to the exotic sights and sounds of once-remote locations through television and the Internet (Shaw and Thomas 2006). In addition, extended travelling is seen to reflect social status (Dubois and Ceron 2006b). It can be argued that access to tourism has become viewed as a right by consumers in the developed (and increasingly the developing) world (Becken 2007; Gössling et al. 2009; Barr et al. 2010), with the taking of one or more international holidays being transformed from an aspiration to an expectation. As Böhler et al. (2006, p.652) suggest:

“Holidays and short stay trips have become a part of modern societies. Whereas in the past travelling used to be a privilege, nowadays tourism is a mass phenomenon of the western world”.

Statistically, only 2-3% of the world's population participate annually in international air travel and, within these travellers, sub-groups of frequent (hypermobile) travellers account for a large share of the overall kilometres travelled (Peeters et al. 2006). Past trends suggest that the peak of hyper-mobility is still to be attained, with the continued attraction of remote destinations and

ecotourism, the acceleration of life, high-speed travel technologies and easy information access (Dubois and Ceron 2006b).

## **2.3 POTENTIAL OPTIONS FOR REDUCING TOURISM'S CONTRIBUTION TO CLIMATE CHANGE**

### **2.3.1 Introduction**

The tourism industry needs to significantly reduce its GHG emissions if it is to move onto a sustainable emissions path. This view is echoed by the UNWTO's Davos Declaration which states that:

“The tourism sector must rapidly respond to climate change, within the UN framework and progressively reduce its GHG contribution if it is to grow in a sustainable manner” (UNWTO 2007a, p.2).

As air travel contributes the vast majority of GHG emissions from international tourism, aviation has been identified as the most important area for reducing these emissions. There have been a number of potential options proposed for reducing the impact of air travel on climate change. These include technological changes, market-based policy changes and behavioural (lifestyle) changes (Peeters et al. 2006; Gössling et al. 2007).

### **2.3.2 Technological changes to aviation**

There are a number of areas where technical and infrastructure innovations could potentially lead to reductions in the emissions from aviation. These include engine performance, airframe design, air traffic management, increasing load factors, use of slower non-jet aircraft, use of larger jet aircraft, changing cruise altitudes, fuel efficiencies and low-carbon fuels (Williams et al. 2002; Bows and Anderson 2007; Green 2009; Lee et al. 2009; Morrell 2009; Givoni and Rietveld 2010). The UK Government is involved in collaborative programmes with Airbus in the design of next generation composite wing aircraft, and with Rolls Royce in the development



of low carbon engine technologies (Department for Transport 2012). However, the impact of all of these potential technological and infrastructural innovations is widely considered to be limited and not sufficient to address the increasing levels of GHG emissions from the aviation industry (Peeters et al. 2006; Lee et al. 2009). It has been predicted that the aviation sector will not be able to reduce emissions by more than 1% to 1.5% per km flown per annum from improvements in fuel efficiency using current technologies (Anger 2010).

Alternatives to kerosene, such as liquid hydrogen and biofuels, are only prospects in the longer-term (Bows et al. 2009b; Lee et al. 2009). Lee et al. (2009) highlight fundamental questions in terms of the future viability of liquid hydrogen and biofuels. The production of liquid hydrogen would need to be carbon neutral (energy from renewable sources) in order to offer any real advantages over kerosene in terms of mitigating future climate change impacts from aviation. There is consensus that development of liquid hydrogen technologies is at least a decade away and will only be pursued if there is a more general move to a hydrogen-based fuel economy (Lee et al. 2009). The use of liquid hydrogen as a fuel source would also require large scale changes within the aviation industry in terms of infrastructure and airframe design (Bows et al. 2009b).

There are concerns regarding the economic and ecological feasibility of producing significant quantities of biofuels, in addition to the on-going land-usage conflicts between food and fuel production in developing nations (Bows et al. 2009b; Lee et al. 2009). Although test flights incorporating non-kerosene fuel have taken place, as aviation is a highly safety conscious and risk-adverse industry (Bows et al. 2009a) the mass uptake of these alternative fuel sources is a distant realisation. Another significant point, raised by Bows and Anderson (2007), is that the long design life of aircraft locks the industry into current technology for the next 30-50 years. Bows and Anderson (2007) argue that although there are a number of technical options available for improving aircraft fuel efficiency and decarbonising the fuel source, the impacts will be incremental and unlikely to have a significant effect on aircraft fleets before 2030 at the earliest.

In a special report for the IPCC, Penner et al. (1999) conclude that emission reductions from technological changes to aircraft engine design could be in the order of 20% by 2050. Similar figures are given by Peeters et al. (2006) who suggest technology improvements are likely to lead to efficiency gains of less than 25% by 2040-2050. Although the efficiency of aviation is improving year-on-year, emission rates are still increasing due to the increasing volume of flights. As a result, future total aviation emissions will depend more strongly on the growth rates of air travel and less on the rates of technological and fleet improvement (Lee et al. 2009). Given that air travel is estimated to grow by 5% per annum on average over the next 20 years (Gössling and Peeters 2007) and that efficiency gains to reduce GHG emissions are estimated to be between 1% and 1.5% per annum (Anger 2010), it is clear that technological changes in aviation alone will not be sufficient in solving tourism's climate change problem.

### **2.3.3 Market-based changes**

There are also limitations with the impacts market-based policy changes could have on emissions from air travel. Market-based changes, such as taxes on jet fuel or aircraft emissions, are hugely unpopular with the airline industry and politically very difficult to enforce due to a 1950 resolution by the International Civil Aviation Organisation (ICAO) to exempt fuel for international air travel from taxation (Michaelis 1997). Despite discussions on market-based options taking place within the ICAO, consensus amongst the global member states of the organisation on the introduction of economic instruments has not been reached thus far (Lee et al. 2009). Research shows that even if emission or fuel taxes on civil aviation were introduced, they would have to be very high in order to have a serious impact on the demand for air travel (Michaelis 1997; Olsthoorn 2001; Brons et al. 2002; Dubois and Ceron 2006b; Tol 2007). According to Brons et al. (2002), the price elasticity of demand for air travel is directly related to the possibilities of substitution. Long-haul flights suffer from a smaller number of substitute modes than short-haul flights, particularly for intercontinental ocean crossing flights, so travellers become less price sensitive as flight distances increase (Brons et al. 2002). Therefore, price increases as a result of

environmental taxes would have to be substantial in order to curb demand for air travel, especially for long-haul flights.

The likelihood of the UK Government introducing new policies that would have a significant impact on the volume of air travel, and hence emissions, could be considered unlikely in light of the current aviation strategy. The Draft Aviation Framework (Department for Transport 2012) explicitly states that the UK Government's primary objective is to achieve long-term economic growth and that as the aviation sector is a major contributor to the economy, it supports growth within a framework which maintains a balance between the benefits of aviation and its costs, particularly climate change and noise. The Draft Aviation Framework communicates the UK Government's commitment to ensure the aviation sector makes a significant and cost effective contribution towards reducing global greenhouse gas emissions. However, the Government does not intend to take any direct action that could jeopardise the UK's position as a major global hub or create a competitive disadvantage for the UK aviation industry. Instead, the UK Government seeks to make progress, through the ICAO, on the establishment of a global emissions deal and more ambitious technology standards (Department for Transport 2012). The Framework acknowledges that current airport capacity will not be sufficient to maintain the UK's international connectivity beyond 2020 and that further airport expansion will be required in the future, particularly in the South East of England.

Government forecasts for air passenger demand at UK airports, which include adjustments for passengers paying increased air fares in the future to reflect climate change costs, predict that annual passenger numbers will increase from 228 million in 2005 to 490 million in 2030 (Department for Transport 2006). Although the UK Government introduced, and then increased, the Air Passenger Duty it has been criticised for implementing "a revenue-raising tax reform, promoted under the guise of climate policy" (Mayor and Tol 2007, p.512). In their study, Mayor and Tol (2007) found that the UK Air Passenger Duty has the perverse effect of increasing CO<sub>2</sub> emissions from aviation, albeit only slightly, because the relative price difference between short-haul and long-haul holidays is reduced. They

suggest that rather than operating a boarding tax, the UK Government should introduce an emissions tax if their aim is to reduce emissions from air travel.

Although air travel has been protected from international agreements designed to reduce GHG emissions, a number of individual governments and the European Union are attempting to start integrating aviation into international climate change policy. In 2006, the EU voted to integrate all domestic and international flights between EU airports into the EU Emissions Trading Scheme (ETS) in 2011, with all international flights departing from or landing at EU airports being covered from 2012 (European Commission 2006). However, the inclusion of aviation in the EU ETS will not necessarily limit total GHG emissions from aviation. As the EU ETS is a 'cap and trade' scheme, it is predicted that the CO<sub>2</sub> emissions from aviation will continue to rise and the industry is expected to cover its increasing emissions by purchasing allowances from other sectors (Anger 2010; Department for Transport 2012).

The inclusion of aviation in the EU ETS is not expected to reduce demand growth or carbon emissions significantly in the future (Scheelhasse and Grimme 2007; Anger and Kohler 2010). Based on future scenarios for aviation growth in the EU, Anger and Kohler (2010) predict that aircraft emissions will account for the majority of CO<sub>2</sub> emissions covered by the EU ETS by 2020. If international air travel continues to be allowed a softer treatment than other sectors, over-proportionally large reductions in GHG emissions by other sectors will be required if the EU is to meet its climate change reduction targets (Gössling et al. 2007). Although including aviation in the EU ETS could be viewed as a step in the right direction towards making the industry more accountable for its emissions, it appears that current market-based policies will not be sufficient in curbing the increasing levels of GHGs emitted by European air travel.

Another form of market-based mechanism, albeit a voluntary one, that has been proposed as a means of curbing GHG emissions from aviation is carbon offsetting. Providers of carbon offset schemes offer to neutralise emissions caused by a flight through compensation in another sector, for instance by investing in renewable energy, energy efficiency or afforestation or reforestation projects (Gössling et al.

2009). A number of airline companies, including British Airways and Qantas, offer the purchase of voluntary carbon offsets at the click of a button during the online booking process (Mair 2011). Despite the ease with which carbon offset purchases can be made, tour operators and airlines offering voluntary carbon offset schemes report that customers show limited interest in them (Gössling et al. 2009).

The uptake of voluntary offset schemes is very low and the amount of aviation emissions currently compensated for by these providers is negligible (Gössling et al. 2009). Carbon offset schemes could, thus, be considered as being of minor importance in tackling aviation's contribution to global climate change (Gössling et al. 2007). Whilst research has shown that a majority of air passengers are prepared in principle to purchase carbon offsets (see, for example, Brouwer et al. 2008; Gössling et al. 2009; MacKerron et al. 2009), when it comes to actually following up their intentions, only a very small minority of air passengers actually do so. In their survey of Swedish air passengers, Gössling et al. (2009) found that only 2% had previously offset their flights. In their study based in Canada, Dodds et al. (2008) found that there was a relatively low overall awareness of the concept of carbon offsetting amongst tourists and within the travel trade. This supports the findings of Becken (2004) and Gössling et al. (2007) that there is a lack of knowledge amongst tourists when it comes to carbon offsetting.

In addition to low levels of awareness, part of the reason for the low uptake by air passengers of carbon offsets could be due to some of the criticisms regarding the credibility of the schemes. There are substantial differences in the approaches of the various carbon offsetting organisations to calculating and compensating for emissions (Boon et al. 2007; Gössling et al. 2007). These differences in calculations, along with different pricing levels and degrees of accountability, affect the credibility of the schemes (Gössling et al. 2007; Daley and Preston 2009). Additionality is also an issue for carbon offset schemes (Broderick 2009; MacKerron et al. 2009), whereby offset organisations need to ensure that claimed reductions would not have occurred anyway even in a project's absence. Voluntary carbon offset schemes have also been criticised for fostering the idea that there are simple solutions to unsustainable lifestyles, although they could be

argued to have educational benefits in terms of creating more carbon conscious societies (Gössling et al. 2007; MacKerron et al. 2009).

Gössling et al. (2009) argue that carbon offset schemes do nothing to reduce emissions or reduce the volume of air travel taking place, and should not become a means of justifying further growth in air travel. Böhler et al. (2006) and Mair (2011) suggest that offsetting schemes could increase the volume of air travel taking place by removing the guilt from excessive individual flight-taking. Academics researching carbon offsetting schemes for aviation are in general agreement that voluntary offsets on their own are not a solution to the climate change problems associated with air travel (Böhler et al. 2006; Boon et al. 2007; Gössling et al. 2007; Dodds et al. 2008; Broderick 2009; Daley and Preston 2009; Gössling et al. 2009; Mair 2011). Whilst there are some benefits to carbon offsetting schemes, offsetting should be accompanied by measures aimed at changing holiday travel behaviour (Böhler et al. 2006). An avoided flight is better than a compensated flight for climate change (Gössling et al. 2009).

#### **2.3.4 Behavioural change possibilities**

The third of the options, behavioural (or lifestyle) change, is considered to have the most important role to play in leading to reductions in GHG emissions from air travel associated with tourism (Dubois and Ceron 2006b; Gössling et al. 2007). Chapman (2007) concurs with this view and argues that behavioural change is the key factor for reducing GHG emissions from the transport sector. Peeters et al. (2006) stress the importance of changing the behaviour of hypermobile tourists towards less energy-intensive patterns, while also preventing less frequent travellers from entering hypermobile lifestyles. Peeters et al. (2006) argue that individual choices, which are ultimately embedded in lifestyles, can have a substantial impact on the overall emissions caused by tourism. Although behavioural change has been identified as potentially a key policy option, inducing behavioural change amongst tourists in the developed world will not be an easy, straightforward task. Böhler et al. (2006) argue that the potential to alter tourist behaviour might be small due to the high individual and social importance of holidays. In addition, they suggest that the current conditions of relatively low priced air fares,

increasingly flexible working hours and the symbolic dimension of holiday destinations stimulates short stay holidays to long-haul destinations facilitated by air transport (Böhler et al. 2006). Whilst major societal changes in tourism consumption behaviour may be unobtainable in the near future, there are still a number of potential behavioural changes available to tourists that do not require them giving up their freedom to travel or right to fly.

Changes in tourism behaviour by individuals such as taking fewer holidays a year of longer duration, travelling shorter distances to destinations, and using alternative modes of transport to air travel could, if adopted by a significant proportion of travellers, have a substantial impact on tourism GHG contributions (Böhler et al. 2006; Peeters et al. 2006; Miller et al. 2007). One area where GHG emissions could be reduced is by using rail travel, rather than air travel, for short-haul trips. Chapman (2007) argues that there is a pressing need to make long distance rail travel more financially attractive than short-haul flights in order to induce a change in travel behaviour. A study by Kemp (2009) suggests that for journey lengths between 200 and 1,000 kilometres alternative ground transport modes, such as rail and coach, can be time-competitive with air travel. Kemp (2009) argues that the alternatives facing a tourist may not necessarily be a choice of transport modes to the same holiday destination, but may involve a choice between different destinations accessed by different modes – each providing an equally satisfactory holiday experience.

Encouraging behavioural change through the substitution of rail travel for air travel will be more likely if ground transport modes are able to compete more effectively in terms of price and travel time. For this to happen considerable investment in rail infrastructure will be required and governments may need to subsidise fares (Chapman 2007). Peeters et al. (2006) and Peeters and Schouten (2006) recommend that innovation in the tourism sector should be directed at the development of less long-haul trips in favour of short-haul trips by rail and coach, as well as increases in the length of stay of trips. The transformation of holiday products offered by the industry, brought about by infrastructure innovations, may be as important as changes in the mindset of individual travellers in bringing about significant behavioural change. As a way of encouraging trips with a longer length

of stay, Peeters et al. (2006) suggest the tourism industry advertises holiday prices based on 'per trip day' rather than the current method of price 'per trip'. This would have the effect of longer stay holidays appearing as the lowest price offer, rather than short stay holidays; a reversal of the current situation whereby short duration trips are marketed as the cheaper option. The benefits of slow travel, such as the ability to stop at multiple points on the journey to the eventual holiday destination when travelling by train, and to gain a more authentic travel experience, could also be promoted by tour operators and travel agents (Dickinson et al. 2010).

Engaging the tourism industry in encouraging tourists to change their current holiday behaviour, in providing the infrastructure enabling lower carbon holiday options, and disrupting the status quo, may prove a challenge. This point is illustrated by examination of the current stance of the UNWTO. The Davos Declaration (UNWTO 2007a) calls for tourists, when choosing their holiday destination and choice of travel mode, to consider the climate, economic, societal and environmental impacts of their options before making a decision and, where possible, to reduce their carbon footprint or offset emissions that cannot be directly reduced. However, there is a potential conflict of interests with the main priority of the organisation, which is to promote tourism as a driver of economic growth, inclusive development and environmental sustainability (UNWTO 2011). This is illustrated by the statement presented at the United Nations Conference on Climate Change in Bali in December 2007 by the Secretary-General of the UNWTO. In his published statement, the Secretary-General declared:

“Those who say: “do not travel far from home and avoid taking planes to save several tons of carbon emissions”, should think twice. Because these long-haul trips are often to countries that are home to the planet’s poorest populations, which – we know – will already be the first victims of warming. These communities, like Bali, would be doubly affected if we also deprive them of the economic contribution of tourism” (UNWTO-UNEP-WMO 2008, p.21).



## 2.4 SUMMARY

This chapter outlined the contribution of the tourism industry to climate change. Although tourism only contributes 5% of global CO<sub>2</sub> emissions (UNWTO-UNEP-WMO 2008), this proportion is widely predicted to increase in the future due to the continued growth of the aviation market (Dubois and Ceron 2006b; Anable and Shaw 2007). It is the aviation sector that constitutes the majority of greenhouse gas emissions from international tourism (Peeters and Dubois 2010) and, as a result, reducing emissions from air travel is seen as the most important factor in reducing tourism's contribution to climate change.

The three most widely proposed options for reducing tourism's contribution to climate change have been outlined and discussed. All three options relate to reducing the impact of air travel on climate change. Considerable developments are taking place in terms of technological and infrastructural innovations in the airline industry. Despite achieved efficiencies in fuel burn as a result of these improvements (Penner et al. 1999; Anger 2010), they are not sufficient to reduce the overall emissions from aviation due to the sustained growth in global air travel (Peeters et al. 2006; Lee et al. 2009). Technical innovations still have an important role to play but, in isolation, they are inadequate in tackling increasing GHG emissions from tourism.

A wide range of market-based policy options were evaluated. The process of introducing fuel taxes and emission taxes is very complicated due to ICAO resolutions (Michaelis 1997), and is unlikely to take place in the near future. Including aviation in the EU ETS is the first attempt to start integrating the sector into international climate change policy. However, the inclusion of European aviation in the ETS will not necessarily reduce emissions from air travel due to the ability of airlines to buy credits from other industries (Scheelhasse and Grimme 2007; Anger and Kohler 2010). Voluntary carbon offsetting schemes were also analysed. Whilst they are considered to offer some benefits in mitigating the emissions from air travel, they have been widely criticised as only a very small minority of emissions are currently offset and the schemes do nothing to actually

reduce emissions from air travel (Boon et al. 2007; Gössling et al. 2007; Gössling et al. 2009).

As a result of the predicted limited impacts of technological innovations and market-based policies, behavioural change is considered to present the most important option in leading to reductions in emissions from air travel and tourism (Dubois and Ceron 2006b; Gössling et al. 2007). Whilst behavioural change by tourists offers the potential for substantial reductions in the contribution of tourism to climate change, achieving a significant degree of behavioural change is unlikely to be a simple and rapid process (Böhler et al. 2006). The next chapter examines the potential for behavioural change in international tourism practices, as well as analysing the potential barriers to engagement with climate change in a holidays and travel context.

## **CHAPTER 3: BEHAVIOURAL CHANGE**

### **3.1 INTRODUCTION**

This second literature chapter focuses more on the theoretical aspects of the tourism and climate change relationship. The chapter begins with a review of the general public's awareness of tourism and climate change, followed by a more in-depth evaluation of the research conducted on tourists' understanding of the connection. The barriers to engagement with climate change that have been identified in previous studies are then examined, and discussed in terms of their relevance to tourism and holidays. Theories relating to behavioural change are reviewed and their applicability to the research study assessed. The relevance of a number of psychology theories are discussed, before environmental sociology and sustainable consumption are examined. The Social Practices Model (Spaargaren 2003) is identified as having particular pertinence to this research study. The chapter closes with a section concluding the literature reviewed in this and the previous chapter, and detailing the research gaps identified.

### **3.2 TOURISTS' ENGAGEMENT WITH CLIMATE CHANGE**

#### **3.2.1 Introduction**

In the last decade in particular, climate change has aroused much interest amongst social researchers. The high levels of political and media attention given to climate change has increased its profile as a global phenomenon. As a result, numerous studies have been conducted to explore the public's understanding of and engagement with climate change. This section highlights some of the research most applicable to the study of tourism's contribution to climate change.

### **3.2.2 The general public's awareness of tourism and climate change**

A number of opinion polls and quantitative attitude surveys have been conducted which provide insights into the public's attitudes towards flying and climate change. These polls have been conducted by numerous organisations including Channel 4 (2005), the BBC (2007), the Guardian (2007), Ipsos MORI (2007), the Department for Transport (2010) and the National Centre for Social Research (2012). These surveys are conducted to investigate a number of different areas, such as the public's experiences of and attitudes towards air travel in general (Department for Transport 2010), the public's attitudes towards flying and environmental concern (National Centre for Social Research 2012), and the public's general attitudes towards climate change related issues (Ipsos MORI 2007). In most cases these surveys contain only a small number of attitude statements relating to air travel and the impacts on climate change.

In the most recent Department for Transport (2010) study, which was based on a module of questions included in the Office for National Statistics' Omnibus Survey in February 2010, 62% of respondents agreed that air travel harms the environment. The proportion agreeing with this statement in 2010 is lower than the 66% that agreed in the 2008 survey and the 70% that agreed in 2006 (Department for Transport 2010). Of the 62% of respondents that agreed air travel harms the environment, 45% of them mentioned climate change/global warming/ozon damage as one of the environmental impacts (Department for Transport 2010). The survey results indicate that the majority of UK residents have a general awareness that air travel harms the environment, although awareness levels have dropped over the last four years, with just over a quarter of respondents (28%) identifying an impact on climate change.

Similar questions to those asked in the Department for Transport study are also asked as part of The British Social Attitudes Survey. The British Social Attitudes Survey has been undertaken annually since 1983 and has included questions on air travel and climate change since 2003 (National Centre for Social Research 2012). A question about belief in climate change was included for the first time in the 2011 survey. Over three quarters of respondents (76%) believed that climate

change is happening and that humans are, at least partly, responsible (National Centre for Social Research 2012). A further 16% believed that climate change is taking place but not as a result of human actions, and 7% did not believe that climate change is taking place (National Centre for Social Research 2012). This suggests that public acceptance of the scientific consensus on human-induced climate change is quite high. The percentage of respondents agreeing that the current level of air travel has a serious effect on climate change was 64% in 2011; the same figure as when the question was first asked in 2005. This result is consistent with the findings of the Department for Transport (2010) study.

Whilst providing a snapshot of the public's views, these surveys do not explore deeper beliefs and focus on stated attitudes rather than measuring actual behaviour. For example, in The British Social Attitudes Survey (2012) 24% of respondents said they were prepared to travel less by plane, with a further 5% claiming they have already reduced their air travel to help tackle climate change and 23% insisting they never fly at all. It can be argued that these surveys may be suffering from elements of social desirability bias (Sterngold et al. 1994). This proposition is supported by the results of the Guardian/ICM poll (2007), which reported that 13% of passengers said they had given up flying as a result of climate change, with a further 34% reducing their number of short-haul flights and 31% reducing long-haul flights. The Guardian article acknowledges that "the growing number of air travellers suggests that the reality may differ". The poll also reported that 29% of passengers have used a carbon offsetting scheme, forcing the Guardian to comment "Again, that claim may be running ahead of what is actually happening".

In a review of existing research into public attitudes to climate change and transport behaviour, Anable et al. (2006) claim the evidence suggests that recognition of the concept of climate change among the UK population is extremely high, but a sophisticated understanding appears to be random and inconsistent. When it comes to air travel, the authors conclude that the evidence suggests that only one third of the UK population identify air travel as a cause of climate change. Examining the growth in air travel by UK residents over the past few decades, Anable et al. (2006) argue that to date very little research has been carried out to understand the real motivations for the changing patterns of air

travel. As a result, knowledge of the link between air travel, climate change and the decision-making processes of UK residents with respect to flying is also low.

### **3.2.3 Tourists' awareness of tourism and climate change**

To date, there has been limited specific research undertaken to investigate whether tourists are aware of the impacts their travel and holidays have on climate change. However, a small number of studies have been published in the tourism and transport literature that offer some insight into tourists' awareness, attitudes and behaviour towards climate change. Research conducted with tourists suggests that there is generally a low level of awareness of the impacts holidays, and particularly air travel, have on climate change (Gössling et al. 2006; Shaw and Thomas 2006, Becken 2007; Randles and Mander 2009; Barr et al. 2011; Dickinson et al. 2011). In Becken's (2007) study amongst international tourists in New Zealand, participants showed a low awareness of air travel's impact on climate change. Participants did acknowledge climate change as a 'massive problem' and 'happening now' but links between their own travel behaviour and climate change were rarely made. Similar to Becken's (2007) findings, Randles and Mander (2009) concluded that, on the whole, interviewees in their study had a very low level of awareness and understanding of the science of climate change, but were of the opinion that something significant was happening. Barr et al. (2011) found in their focus group research that most participants expressed concern about global climate change, but there was general debate and uncertainty regarding the cause of climate change and the role of humans. These studies suggest that overall awareness of climate change is high, but the link between holidays and climate change is rarely made by tourists.

This view is further supported by the findings of Gössling et al. (2006) and Shaw and Thomas (2006). In their study conducted with international tourists holidaying in Zanzibar, Gössling et al. (2006) concluded that the majority of visitors surveyed were unaware of their contribution to climate change and the consequences of their travel. When asked about environmental problems associated with tourism, responses focussed on local, visible and immediate problems, such as waste, fresh water availability and land development. Only a small minority of respondents

(17%) mentioned emissions of greenhouse gases from air travel (Gössling et al. 2006). Shaw and Thomas (2006) conducted qualitative research with a small group of international students studying in the UK and found that very few expressed any concern about the environmental costs of air travel. Of the minority of participants that were aware that air travel contributes to climate change, none of them believed that there was much that an individual could do to combat the problem (Shaw and Thomas 2006). Signs of increased tourist awareness of the impacts of holidays and flying on climate change were evident in a more recent study of attitudes towards long-haul holidays in New Zealand amongst UK participants. In this qualitative study, Cohen and Higham (2011) found a spectrum of awareness of the impacts of air travel on climate change. This spectrum ranged from participants who were largely unaware of air travel's climate change impact to several who were aware and beginning to show signs of what Cohen and Higham (2011) label 'consuming air travel with a conscience'. Cohen and Higham concluded that most of the participants in their study were aware to some degree of the impact of air travel on climate change.

Research into tourists' awareness of and attitudes towards holidays, air travel and climate change has revealed a general unwillingness to accept personal responsibility for tourism's contribution to climate change. In Becken's (2007) study, a large number of tourists did not feel accountable for the GHG emissions from their air travel and did not consider mitigation of aviation's impacts as a personal responsibility. Instead, responsibility for addressing the climate change impacts of air travel was seen to lie with airlines, governments and international organisations. A similar view was expressed by the participants in Randles and Mander's (2009) study. Other people and groups were considered more to blame for the climate change impacts of flying than they were as individuals. As a consequence, they were unwilling to change or restrain their air travel behaviour. These findings are supported by Cohen et al. (2011) who found that the responsibility for mitigating the climate change impacts of flights and holidays was placed on others, such as governments, rather than with individual tourists. In their survey of Swedish air travellers, Gössling et al. (2009) found that air passengers put their own responsibility for dealing with the environmental impacts of aviation last; after aircraft producers, airlines, governments and intergovernmental

organisations. Only a third of air travellers surveyed accepted any personal responsibility for aviation emissions (Gössling et al. 2009). It is possible that some tourists may be genuinely unaware of the impacts that their holidays and air travel are having on climate change, whilst others may have a greater level of awareness but choose to deny or play down their own personal responsibility either by not accepting that their actions are having a significant impact or by passing on the responsibility and blaming others. Böhler et al. (2006, p.667) highlight the fact that levels of awareness and propensities for denial are closely related when they state that:

“The motivation for the long-haul traveller to get into contact with foreign cultures, to explore foreign landscapes or to exhibit a lifestyle different from the mainstream population might be stronger than the realisation that air travel causes environmental damage”.

A small number of researchers have also found that some individuals are relatively comfortable with participating in environmental behaviours in and around the home but are less prepared to do so in a holiday situation (Böhler et al. 2006; Becken 2007; Bergin-Seers and Mair 2009; Barr et al. 2010; Dickinson et al. 2011). Becken (2007) found that tourists perceived environmental responsibility differently in the holiday context compared with their everyday situation at home. In this study, tourists indicated that GHG mitigation should focus on the home environment rather than on travel, which was perceived to be an extraordinary and therefore negligible contribution to overall emissions. Barr et al.'s (2010) study suggested that, for some individuals, being environmentally conscious at home could be used to justify or trade-off their lack of commitment whilst on holiday. Randles and Mander (2009), Dickinson et al. (2010), and Cohen and Higham (2011) also found evidence of participants demonstrating their pro-environmental behaviours around the home as a way of 'legitimising' air travel for holidays and short breaks. Barr et al.'s (2011) research illustrated a major difference in attitudes towards climate change and air travel, as opposed to conventional, home-based environmental practices. The most committed individuals to home-based environmental activities were of the view that flying has a negative impact for the environment. However, these individuals continued to fly regularly despite recognising the potentially contradictory behaviour (Barr et al. 2011).



The unwillingness of tourists to engage in environmentally friendly practices in a holiday context is particularly pronounced when it comes to air travel. Studies suggest that tourists are extremely resistant to changing their flying behaviour patterns in order to reduce the impacts on climate change (Becken 2007; Randles and Mander 2009; Barr et al. 2010). These studies indicate that many tourists consider the right to fly and freedom to travel as an integral part of their lives that they would not be willing to give up. Gössling et al. (2009) found that a considerable share of air travellers perceive it as difficult or irrelevant to fly less often. The authors argue that flying is now a contemporary form of travel that is an integrated and unquestionable part of many people's lifestyles. Randles and Mander (2009) concluded that, for the vast majority of their participants, flying has become a habit when it comes to making overseas holidays and trips. Rather than engaging in considered decision-making through a process of rational evaluation of the alternative transport modes, participants were automatically choosing to fly (Randles and Mander 2009). Cohen et al. (2011) argued that some of their participants were unable to disentangle air travel from the notion of taking a holiday and consequently viewed tourist air travel as an embedded way of life. This supports the findings of Randles and Mander (2009) that many tourists automatically think of flying when planning their holidays.

Studies also demonstrate that awareness of the impacts of holidays and flying on climate change does not necessarily lead to changes in behaviour. Cohen and Higham (2011) found that several participants were aware of air travel's impact on climate change, but were unwilling to change their behaviour in response. These participants expressed perceived positive benefits of tourism as a reason for continuing their air travel behaviour and attached too high of an importance on their holidays to consider adapting them. The participants in Barr et al.'s (2011) study were also keen to emphasise the positive benefits that they had realised by travelling with low-cost carriers and were unwilling to change their flying behaviour. In their study with Hong Kong residents, McKercher et al. (2010) found that tourists who took the most frequent international holidays were more aware of climate change than less frequent travellers, but also the least willing to change their flying and holiday patterns.

Randles and Mander (2009) discovered that participants were strongly against the introduction of restrictions limiting their ability to fly as much as they desired or could afford, but were less resistant towards higher taxes on air travel. However, in order to accept higher taxes, participants wanted to see clear and direct evidence that the revenue raised would be used to address the climate change impacts of aviation. Becken (2007) and Barr et al. (2010) also found evidence that objections to increased taxes were not as strong as opposition to quotas or limits on air travel, as participants stated they would simply 'pay the tax' and keep flying anyway. Despite an intention to pay increased environmental taxes in the future in order to continue current flying patterns, Barr et al. (2010) discovered there was scepticism of green taxes amongst the participants in their research and doubts expressed as to whether the proceeds were being used to directly tackle environmental problems.

Although, overall, the research studies discussed have unearthed a strong resistance to tourists' changing their current holiday and flying practices, there are a few indications that small adjustments to future travel behaviour could be made. In Becken's (2007) study, some participants differentiated between what they perceived as 'legitimate holidays' and 'dispensable trips', such as short breaks or shopping trips. The interviewees in Randles and Mander's (2009) study elaborated further on this distinction between types of holiday. Randles and Mander (2009) found participants considered some flights as indispensable, for a range of different reasons, but envisaged some flights 'around the margins' that could be substituted for different transport modes or even trips that did not need to be made at all. The core trips, which were considered as 'no-go' areas in terms of being targeted for emissions reduction included regular trips to visit family and friends living abroad, special events such as weddings, and the long-planned major annual overseas holiday. Participants expressed a view that they would be prepared to reduce their flying for some of the spontaneous 'bargain' short break trips they took using air travel, but only as a result of externally imposed restrictions on the number of flights they could take. They were not prepared to voluntarily reduce the number of flights and short breaks they took.

In their qualitative research with participants from the UK and Norway, Cohen et al. (2011) found evidence of shifting consumer discourses towards negative

valuations of frequent air travel. However, the participants in the study were themselves regular flyers. Some of the participants were critical of the over-consumption of short-haul flights using low-cost airlines, whilst maintaining that annual holidays involving air travel were sacrosanct (Cohen et al. 2011). Cohen and Higham (2011) report a number of participants that exhibited a ‘carbon conscience’ about flying and a desire to change their future air travel behaviour. But these were future intentions and, at present, these participants were still continuing to fly to holiday destinations.

### **3.3 BARRIERS TO ENGAGING WITH CLIMATE CHANGE**

A number of studies have examined reasons why the public at large have not engaged more fully with the concept of climate change and the behavioural changes that could lead to lower greenhouse gas emissions (Stoll-Kleemann et al. 2001; Anable et al. 2006; Lorenzoni et al. 2007). Lorenzoni et al. (2007) refer to the term ‘engagement’ as a personal state of connection with the issue of climate change. They argue that:

“A state of engagement is understood here as concurrently comprising cognitive, affective and behavioural aspects. In other words, it is not enough for people to know about climate change in order to be engaged; they also need to care about it, be motivated and be able to take action” (Lorenzoni et al. 2007, p.446).

These studies have looked at climate change and individual lifestyles, and have not focused on a tourism or holiday context. However, many of the barriers to engaging with climate change identified in these studies will have significant relevance to this study. Research has also been conducted to investigate the barriers to the public engaging in more general pro-environmental behaviours (Blake 1999; Kollmuss and Agyeman 2002). A considerable number of barriers have been identified and most researchers classify them into groups. Most authors categorise each barrier as being at an individual (internal) or social (external) level (Blake 1999; Kollmuss and Agyeman 2002; Anable et al. 2006; Lorenzoni et al. 2007).

Researchers argue that the barriers to engagement are interdependent and often work in conjunction to exacerbate the constraints (Anable et al. 2006; Lorenzoni et al. 2007). Many of the barriers identified revolve around denial and dissonance related to the attitude-behaviour gap. Lorenzoni et al. (2007) believe that some of the barriers they found could be interpreted as mechanisms of denial to cope with an internal discrepancy at an individual level between the demands to engage with climate change and reluctance for personal behavioural change. The dissonances experienced are heightened, for many people, by the challenge to change high-consumption lifestyles in order to reduce greenhouse gas emissions (Stoll-Kleemann et al. 2001). Lorenzoni et al. (2007) identified a reluctance to change lifestyles as a significant barrier to engaging with climate change. Participants in their study considered that changes to their lifestyle would only be achievable with great discomfort and sacrifice of standards of living and social image. As the climate change problem is fundamentally linked to energy consumption, the authors argue that resistance to change and the degree of cognitive dissonance experienced are likely to be far greater than for other environmental issues. The reluctance to change lifestyles appears to be a key issue and (as discussed in Section 3.2.3) has already been identified in the context of holidays and travel (Becken 2007; Randles and Mander 2009; Barr et al. 2010).

In addition to the studies discussed above, a number of other studies have identified barriers to engaging with climate change, even though it was not necessarily one of the primary research objectives. In their study examining the future travel behaviour intentions of young people (aged 11-18), Line et al. (2010) found that although participants were aware of climate change, their understanding of the link between transport and climate change was weak. Participants displayed apathy towards changing their future travel behaviour intentions to reduce their impacts on climate change. The authors found that the timing and intangibility of climate change were key to this apathy, along with feelings of self-efficacy and the influence of social dilemmas (Line et al. 2010). Semenza et al. (2008) investigated public perception of climate change and voluntary mitigation measures in Oregon and Texas, USA. They identified a number of barriers to action in their research including lack of knowledge, scepticism, self-efficacy, and instrumental factors (lack of time and money, and inconvenience).

Table 3.1 presents the different barriers identified from the literature discussed in this section. In accordance with the literature, the barriers have been categorised into internal and external barriers.

**Table 3.1: Barriers to engaging with climate change**

	Lorenzoni et al. (2007)	Anable et al. (2006)	Stoll-Kleemann et al. (2001)	Kollmuss and Agyeman (2002)	Blake (1999)
<b>Internal Factors</b>					
1. Lack of knowledge	X	X	X	X	
2. Uncertainty and scepticism	X				
3. Distrust in information sources (including media)	X	X			
4. Externalising responsibility and blame (governments and industry)	X			X	X
5. Reliance on technology (technology will save us)	X		X		
6. Climate change perceived as a distant threat (in space and time)	X	X			
7. Importance of other priorities	X				
8. Reluctance to change lifestyles	X		X		
9. Fatalism (it is too late to do anything)	X				
10. Helplessness (drop in the ocean feeling)	X				
11. Environmental values / attitudes / frames		X		X	
12. Moral norms / non-acceptance of personal responsibility		X	X		X
13. Perceived behavioural control (believed ability to act)		X			
14. Self-efficacy / agency / locus of control (sense of individual powerlessness)		X	X	X	X
15. Denial		X		X	
16. Affective attitudes (excitement, pleasure, boredom etc.)		X			
17. Self-identity and image (status)		X			
18. Habits and past behaviour		X		X	
19. Importance of personal freedom to choose			X		
20. Rejection of blame			X		
21. Metaphor of displaced commitment (I protect the environment in other ways)			X		
22. Motivation / laziness				X	X
23. Emotional involvement / lack of interest				X	X
24. Resistance against non-conforming information				X	
<b>External Factors</b>					
1. Lack of political action / distrust in governments	X	X	X		X
2. Lack of action by business and industry	X	X			
3. Free rider effect / social dilemmas	X	X	X		X
4. Pressure of social norms and expectations (expectation to consume)	X	X		X	
5. Lack of enabling initiatives	X				X
6. Contextual / situational factors		X		X	
7. Instrumental attitudes (time, cost, convenience etc.)		X		X	X

It can be seen in Table 3.1 that a number of the barriers identified by the various authors are quite similar but titled differently (for example, 4. Externalising responsibility and blame (governments and industry), 12. Moral norms / non-acceptance of personal responsibility and 20. Rejection of blame can all be considered as relating to ‘Denial of personal responsibility’). In addition, although the studies examining tourists’ awareness of climate change (discussed in Section 3.2.3) did not set out specifically to investigate barriers to action, unlike the studies included in the table above, a number of barriers were nonetheless discovered. These included reluctance to change holiday lifestyles (Becken 2007), a belief that technology will solve the problems of emissions from aviation (Barr et al. 2010), a feeling of helplessness that individual actions do not make a difference (Shaw and Thomas 2006), denial of personal responsibility and blaming others (Randles and Mander 2009), and protecting the environment in other ways (Barr et al. 2010; Dickinson et al. 2010). By looking at similarities between barriers in Table 3.1, and by examining the barriers identified in the tourism literature, a shortlist of the potentially most relevant barriers to engaging with climate change in a holiday context were derived. It is important to refine the list of potential barriers as the different barriers will vary in their saliency depending on different environmental behaviours and situations (Blake 1999; Anable et al. 2006) and thus they are not all of equal relevance to this study. The key barriers identified to this research are given below.

Most relevant barriers to engaging with climate change in a holiday context identified from the literature:

Internal:

1. Lack of knowledge/uncertainty/scepticism of climate change
2. Lack of environmental values and attitudes
3. Denial of personal responsibility/blaming others
4. Reluctance to change lifestyles/freedom of choice
5. Self-efficacy/locus of control (fatalism/powerlessness)
6. Reliance on technology to solve problem
7. Habits and past behaviour
8. Protecting the environment in other ways

External:

1. Lack of political action
2. Lack of action by business and industry
3. Social dilemmas/free-rider problem
4. Social norms and expectation to consume
5. Contextual/situational factors
6. Instrumental factors (time, cost, convenience etc.)

‘Denial’ has not been included as a specific barrier because a number of the barriers in the shortened list could be considered as forms of denial (for example, Denial of personal responsibility/blaming others; Self-efficacy/locus of control (fatalism/powerlessness); Reliance on technology to solve problem; Protecting the environment in other ways). The following two sub-sections of this chapter explain the justification for the eight internal and six external barriers to action identified as being the potentially most salient to holidays and climate change, resulting from the literature reviewed.

### **3.3.1 Internal barriers to action**

1. Lack of knowledge:

The first internal barrier relates to a potential lack of knowledge of the causes and consequences of climate change and the potential effectiveness of actions (Lorenzoni et al. 2007). This barrier is closely related to ‘Uncertainty and scepticism’ and ‘Distrust in information sources’ (see Table 3.1). Studies examining tourists’ attitudes towards holidays and climate change have identified generally low levels of knowledge and awareness of tourism’s impact on climate change (Gössling et al. 2006; Becken 2007; Randles and Mander 2009) and, thus, lack of knowledge of climate change could potentially be a strong barrier to changing holiday behaviour.

2. Lack of environmental values and attitudes:

The importance of environmental values and attitudes as a precursor for pro-environmental behaviour came out strongly in the studies of Kollmuss and Agyeman (2002) and Anable et al. (2006). According to Anable et al. (2006),

values are essentially enduring beliefs about behaviours and end states which an individual strives to attain and, as such, they may provide a basis for the formation of attitudes. When investigating a potential attitude-behaviour gap in a holidays and climate change context, it is important to ascertain whether pro-environmental values and attitudes are held.

### 3. Denial of personal responsibility:

Denial of personal responsibility was identified as a barrier to action in all five of the studies contained in Table 3.1. In addition, the denial of personal responsibility for contributing to climate change and blaming others was also highlighted in a number of the tourism studies discussed in Section 3.2.3 (Becken 2007; Gössling et al. 2009; Randles and Mander 2009; Cohen et al. 2011).

### 4. Reluctance to change lifestyles:

Lorenzoni et al. (2007) and Stoll-Kleemann et al. (2001) highlighted a reluctance to change lifestyles as a significant barrier preventing engagement in behaviour that would reduce an individual's personal carbon contribution and subsequent impact on climate change. When it comes to changing flying behaviour, tourism studies (Becken 2007; Randles and Mander 2009; Barr et al. 2010) have shown that tourists are extremely resistant to voluntarily changing their air travel consumption or having restrictions enforced upon them. Holiday lifestyles and the freedom to travel are very important to tourists and there is a strong reluctance to change current practices (Becken 2007).

### 5. Self-efficacy:

Self-efficacy, agency and locus of control essentially share the same meaning: a notion of perceived belief about what can be achieved (Anable et al. 2006). When it comes to tackling global environmental problems, all five studies outlined in Table 3.1 identify a sense of powerlessness held by individuals as a barrier to action. There is evidence of this barrier to action when it comes to the contribution of air travel to climate change. Shaw and Thomas (2006) found that many of the participants in their study did not believe that there was much that an individual could do to make a difference to overall emissions from flying.



#### 6. Reliance on technology to solve the problem:

The studies of Stoll-Kleemann et al. (2001) and Lorenzoni et al. (2007) both identify a reliance on technology to solve the problem of anthropogenic climate change as a justification for inaction at an individual level. Stoll-Kleemann et al. (2001) consider the belief in technological solutions to solve the problem as a form of climate change denial. In terms of aviation's impact on climate change, Barr et al. (2010) found that there was a sense of 'denial' of air travel's impact on climate change amongst participants and a conviction that technological innovations were the most effective means of reducing emissions from air travel.

#### 7. Habits:

Kollmuss and Agyeman (2002) and Anable et al. (2006) argue that habits and past behaviour is a strong barrier to pro-environmental behaviour. With regards to tourism and climate change, Randles and Mander (2009) propose that air travel has become a habit for UK tourists when taking overseas holidays and trips. Similarly, Cohen et al. (2011) found that some participants in their study were unable to extricate the association of air travel with holidays, leading them to conclude that air travel is an embedded way of life. Automatic thoughts of flying and the dismissal of alternative transport modes is potentially an important barrier to action in a tourism context, especially when, given the evidence in Chapter 2, transport is the tourism industry's largest contributor to climate change.

#### 8. Protecting the environment in other ways:

In their study of psychological denial concerning climate change mitigation, one of the forms of denial Stoll-Kleemann et al. (2001) identified was the 'metaphor of displaced commitment'. The authors found that participants justified their lack of action in tackling climate change in certain parts of their lifestyle by claiming that they protect the environment in other ways. A number of authors (see, for example, Becken 2007; Randles and Mander 2009; Barr et al. 2010; Dickinson et al. 2010; Cohen and Higham 2011; Dickinson et al. 2011) discovered this same justification and denial mechanism when it comes to adjusting holiday behaviour. These studies found a belief amongst participants that engaging in environmental practices in and around the home, in order to reduce their carbon footprint, could

be used as a means of justifying their international holidays and counteracting the subsequent emissions from their air travel.

### **3.3.2 External barriers to action**

#### **1. Lack of political action:**

Lack of political action and distrust in governments to take responsibility is a barrier to action identified in the literature on engagement with climate change mitigation and pro-environmental behaviours. Blake (1999) argues that governmental institutions are seen by the public as being most responsible for causing environmental problems and, thus, they are also viewed as being most responsible for solving them. Participants in Lorenzoni et al.'s (2007) study referred to a lack of commitment to mitigate greenhouse gas emissions and a lack of evidence of substantial action by the British Government, as a reason why they were not concerned about reducing their personal contributions to climate change. Becken (2007), Randles and Mander (2009) and Cohen et al. (2011) found evidence of tourists placing the responsibility for addressing the climate change impacts of air travel and holidays on governments and international institutions.

#### **2. Lack of action by business and industry:**

A similar barrier to lack of political action is lack of action by business and industry. Lorenzoni et al. (2007) discovered that the vast majority of survey respondents in their quantitative research agreed that industry and business should be doing more to tackle climate change. Participants in their qualitative research blamed industry and company greed for causing climate change, rather than individual consumers (Lorenzoni et al. 2007). Similarly, respondents in Gössling et al.'s (2009) study placed responsibility for the climate change mitigation of air travel with aircraft producers and airline companies, rather than with individual tourists. Becken (2007) and Randles and Mander (2009) also found evidence that tourists view airlines as being responsible for reducing emissions from aviation.

#### **3. Social dilemmas:**

Social dilemmas, or the free-rider problem, were identified as a barrier in all three studies examining climate change engagement in Table 3.1 (Stoll-Kleemann et al.

2001; Anable et al. 2006 and Lorenzoni et al. 2007). There is a reluctance for individuals to change their behaviour if they feel others will not follow suit. This perceived inaction by others is used as justification for not changing individual behaviour (Lorenzoni et al. 2007). Stoll-Kleemann et al. (2001) make reference to the 'tragedy of the commons', and state that individuals are unlikely to change behaviour in situations where the perceived self benefits are greater than the perceived costs to society. This barrier has particular relevance for holidays, considering the reluctance of tourists to change tourism lifestyles (Becken 2007; Randles and Mander 2009). The perceived personal benefits of holidays to tourists (Barr et al. 2011; Cohen and Higham 2011) could outweigh the perceived cost to society in terms of the contribution to climate change from greenhouse gas emissions.

#### 4. Social norms:

Whether or not people adopt a new behaviour is influenced to some extent by what others do (Anable et al. 2006). Lorenzoni et al. (2007) identify social norms and expectations to consume as a barrier to changing behaviour for climate change reasons. The authors propose that socially-acceptable ways of behaving, and expectations requiring carbon-dependent lifestyles, become ingrained unconscious habitual behaviours. Included in the examples they give, of social expectations to consume, are frequent long-haul holidays and weekend breaks (Lorenzoni et al. 2007). Urry (2002) makes the argument that holidays and travel are a marker of status and, thus, there are societal pressures to engage in holidays as a way of accumulating cultural capital.

#### 5. Contextual/Situational factors:

It can be argued that many pro-environmental behaviours can only take place if the necessary infrastructure is provided (Kollmuss and Agyeman 2002). In their research into the attitude-behaviour gap, Anable et al. (2006) state that contextual or situational barriers emerged as an extremely important consideration. An example of a situational barrier, highlighted by participants in Lorenzoni et al.'s (2007) study, is a perceived lack of affordable and reliable public transportation in a locality. Situational barriers could potentially be very powerful in a holidays and climate change context, as there are no realistic transport alternatives to flying for

travelling to many long-haul holiday destinations. This dearth of alternative options will require tourists to make more significant changes in their holiday practices in order to reduce the impacts on climate change.

#### 6. Instrumental factors:

Instrumental factors, such as the time involved, the financial cost and the degree of inconvenience, can also be a barrier to pro-environmental behaviour (Blake 1999; Kollmuss and Agyeman 2002; Lorenzoni et al. 2007). Kollmuss and Agyeman (2002) hypothesise that primary motives to act, such as altruistic and social values, are often over-powered by more immediate, selective motives, such as personal comfort and saving time and money. Instrumental factors could be a barrier to action when it comes to changing flying behaviour, particularly for holidays to medium and long-haul destinations.

## **3.4 THEORIES RELATING TO BEHAVIOURAL CHANGE**

### **3.4.1 Introduction**

A number of studies have evaluated the different psychological theories of behaviour with regards to their relevance and value when examining sustainable consumption (Jackson 2005), transport behaviour (Anable et al. 2006) and personal responsibility (Halpern et al. 2004). A wide range of conceptual theories have been developed, utilising various social, psychological, subjective and objective variables in order to model consumer behaviour (Jackson 2005). These theories of behavioural change operate at a number of different levels, including the individual level, the interpersonal level and the community level (Halpern et al. 2004). A number of theories have been designed specifically to examine pro-environmental behaviour, whilst more general consumer behaviour theories have also been used to predict behaviour in a climate change context. Many studies have investigated an inconsistency between people's attitudes and behaviour (Blake 1999; Kollmuss and Agyeman 2002; Barr 2004). This inconsistency is commonly referred to as the attitude-behaviour gap or the value-action gap and is particularly prevalent when

examining behavioural change related to environmental issues (Nickerson 2003). Anable et al. (2006) consider this attitude-behaviour gap as one of the greatest challenges facing the climate change agenda.

### **3.4.2 Overview of relevant psychology theories**

This section highlights some of the most influential and commonly applied theories that have been developed to model behaviour and to explain the attitude-behaviour relationship. In addition to the theories discussed in this section, there are a profusion of other psychological theories relating to behavioural change. For a more detailed review of these psychological theories see Halpern (2004), Jackson (2005), Anable et al. (2006) and Darnton (2008).

One of the best known and most widely applied psychology models is the Theory of Planned Behavior (Ajzen 1991). The theory is an extension of the earlier developed Theory of Reasoned Action (Ajzen and Fishbein 1980). In the Theory of Planned Behavior, intention to act is believed to be the key determinant of behaviour. In turn, intention to act is determined by three components: attitude towards the behaviour, subjective norm and perceived behavioural control. As Ajzen and Fishbein developed a mathematical equation that expressed their model and enabled researchers to conduct empirical studies, this resulted in the Theory of Planned Behavior becoming the most influential attitude-behaviour model in social psychology (Kollmuss and Agyeman 2002). The Theory of Planned Behavior has been applied in a wide range of areas including studies examining recycling behaviours (see, for example, Barr 2004), personal travel mode choice (see, for example, Haustein and Hunecke 2007) and water conservation (see, for example, Lam 1999).

The Norm Activation Theory (Schwartz 1977) is another widely applied model and was designed specifically to provide a framework for understanding altruistic behaviour. The theory is based on the belief that a personal norm (feeling of strong moral obligation) to act in a pro-social way is activated by awareness of the consequences of one's actions and the acceptance of personal responsibility for them. Norm Activation Theory has been applied and theoretically tested in a

number of studies relating to general pro-environmental behaviours (see, for example, Nordlund and Garvill 2002), recycling behaviours (see, for example, Hopper and Nielsen 1991) and personal car use (see, for example, Bamberg and Schmidt 2003). The Value-Belief-Norm Theory (Stern et al. 1999; Stern 2000) builds on the Norm Activation Theory by incorporating a more sophisticated relationship between values, beliefs, attitudes and norms. The theory proposes that in order for an individual to engage in pro-environmental behaviour they first have to hold biospheric, altruistic and egoistic values consistent with acceptance of the new environmental paradigm (NEP) (for further information on the NEP see Dunlap et al. 2000). Acceptance of the NEP then feeds into the awareness of consequences, ascription of responsibility and the personal norm of the Norm Activation Theory. The Value-Belief-Norm Theory has been applied in studies examining conservation behaviour (see, for example, Kaiser et al. 2005), personal car use (see, for example, Eriksson et al. 2006) and energy consumption in the home (see, for example, Steg et al. 2005).

One of the most relevant theories to the attitude-behaviour gap is the Theory of Cognitive Dissonance (Festinger 1957). In this theory, Festinger argues that where there are inconsistencies between an individual's attitudes and behaviour resulting in internal feelings of discomfort, the individual will adjust either their attitudes or behaviour to reduce this discrepancy. Jackson (2005) suggests that the publication of Festinger's theory was instrumental in establishing the attitude-behaviour gap that has since plagued behaviour theory. As well as offering a valuable insight into the attitude-behaviour gap, the theory is also relevant to a number of the barriers to action related to denial identified in Section 3.3. In their research into engagement with climate change, Stoll-Kleemann et al. (2001) reported a number of socio-psychological denial mechanisms created by participants to overcome the cognitive dissonance created in their minds. These mechanisms heightened the costs of lifestyle changes, set blame on the inaction of others, and emphasised doubts regarding the immediacy of personal action when the effects of climate change seemed uncertain and far away. Stoll-Kleemann et al. (2001) suggest that individuals experiencing dissonance seek to resolve it, deny it or displace it. From their research they conclude that, for the most part, denial or displacement act powerfully to maintain the gap between attitude and behaviour with regard to

climate change. An alternative interpretation of how dissonance can be reduced is offered by Self-Perception Theory (Bem 1967). Self-Perception Theory proposes that in certain situations attitudes are inferred on the basis of observations about one's own overt behaviour. By suggesting that behaviour can inform attitudes, the theory is counterintuitive to conventional psychology theories that postulate attitudes affect behaviour.

These psychology theories offer useful insights for this study, as their variables and constructs are closely related to many of the barriers identified in Section 3.3. For example, the Theory of Planned Behavior offers insight through its tenet that attitudes towards a specific behaviour (attitude towards holidays) should be examined rather than examining environmental attitudes in general. One of the constructs of the Theory of Planned Behavior, perceived behavioural control, is relevant to some of the structural barriers. In the context of this study, perceived behavioural control could relate to how feasible tourists' feel it is for them to change their holiday behaviour by flying less or using alternative transport modes, as opposed to the actual physical feasibility. The Norm Activation Theory and Value-Belief-Norm Theory offer insight to the barriers identified through their constructs of awareness of consequences (awareness of impacts holidays and flying behaviour have on climate change) and ascription of responsibility (accepting personal responsibility for the emissions and climate change contribution of one's holidays and travel). As mentioned earlier, the Theory of Cognitive Dissonance is of relevance to a number of the barriers related to denial mechanisms, such as not accepting personal responsibility and blaming others, reluctance to change lifestyles, and self-efficacy (powerlessness).

Although the theories discussed are relevant to the study of behavioural change in a tourism and climate change context, this research will not apply or empirically test a specific theory. This decision has been made for two reasons. First, authors have suggested that no single theory has yet been developed that comprehensively explains behavioural change. Kollmuss and Agyeman (2002) conclude that the question of what determines pro-environmental behaviour is such a complex one that it cannot be visualised through one single framework or diagram. Anable et al. (2006, p.64) concur with this view and state that there is no "grand unified

theory” that provides a definitive explanation of behavioural change. Secondly, and related to the first argument, the psychology theories discussed in the previous section do not include all of the variables that would comprehensively explain the attitude-behaviour relationship in a tourism and climate change context. In particular, the role of past habits has been shown to be a key variable in pro-environmental behaviour (Aarts et al. 1998; Ouellette and Wood 1998). Psychology theories have been criticised for tending to study and model behaviour as a function of processes and characteristics which are conceived as being internal to the individual, such as attitudes, values, and personal norms (Jackson 2005). Jackson (2005) argues that they generally neglect processes and characteristics external to the individual, such as institutional constraints, fiscal and regulatory incentives, and social norms. Shove (2010, p.1274) suggests that:

“Framing the problem of climate change as a problem of human behaviour marginalises and in many ways excludes serious engagement with other possible analyses, including those grounded in social theories of practice and transition”.

The analysis of the potential barriers to action in Section 3.3 suggests that external variables are of significant relevance to this research and should not be neglected or under represented. External variables are covered more explicitly in the environmental sociology literature. Section 3.4.4, which discusses the Social Practices Model, addresses external constraints in more detail.

### **3.4.3 Sociology and sustainable consumption**

The impacts of tourism on climate change can also be explored from a sociological perspective. It is widely believed that current levels of consumption in affluent societies are unsustainable (Southerton et al. 2004). This unsustainable consumption has particular relevance for holidays and travel, as the modern global tourism industry is encapsulated by the phrase ‘high carbon lifestyles’ (Burns and Bibbings 2009). Shove (2010) and Hargreaves (2011) suggest that the challenges of climate change are so great that many familiar ways of life and many of the patterns of consumption associated with them are fundamentally unsustainable and, as a result, large-scale changes to everyday life across all sectors of society



will be required. Shove (2003) argues the focus of environmentalists aiming to tackle climate change problems should not be on the consumption of energy resources, but on the services and experiences they make possible. Concentrating on energy intensities results in missing the bigger picture and failing to detect cultural and generational shifts of expectation and practice (Shove 2003). According to Southerton et al. (2004, p.40):

“Focusing on the choices that people make when going about singular acts of consumption is to miss the broader and more important point that it is not in acts of consumption that environmental problems are located, but in the engagement in social practices that are interconnected in terms of the type of consumption involved, and the cultural meanings and significance of the practice”.

There is disagreement amongst social practice theorists when it comes to defining exactly what a practice is. Hargreaves (2011) suggests that some theorists focus on the various components or elements that make up a practice (see, for example, Reckwitz 2002), some concentrate on the connections between these elements (see, for example, Warde 2005), whilst others consider practices as a bridge between individuals’ lifestyles and broader socio-technical systems of provision (see, for example, Spaargaren and Van Vliet 2000). Warde (2005) proposes that consumption itself is not a practice but is, rather, ‘a moment in almost every practice’.

Shove (2010) argues that social theories of practice and linear theories of behaviour are contrasting paradigms, and that elements of the two sets of theories should not be merged or integrated. Others (see, for example, Hargreaves 2011) question whether the terms ‘practice’ and ‘behaviour’ should be viewed as incompatible. Hargreaves (2011) argues that given the contemporary ‘doing’ of numerous ‘pro-environmental behaviour change interventions’, and the large body of research investigating behaviour change, it would be empirically misleading to call behaviour change interventions by another name. Thus, it can be argued that there is scope to use the terms ‘practice’ and ‘behaviour’ in the same study examining engagement with environmental problems, such as climate change. Indeed, Warde (2005, p.140) suggests that:

“The principal implication of a theory of practice is that the sources of changed behaviour lie in the development of practices themselves”.

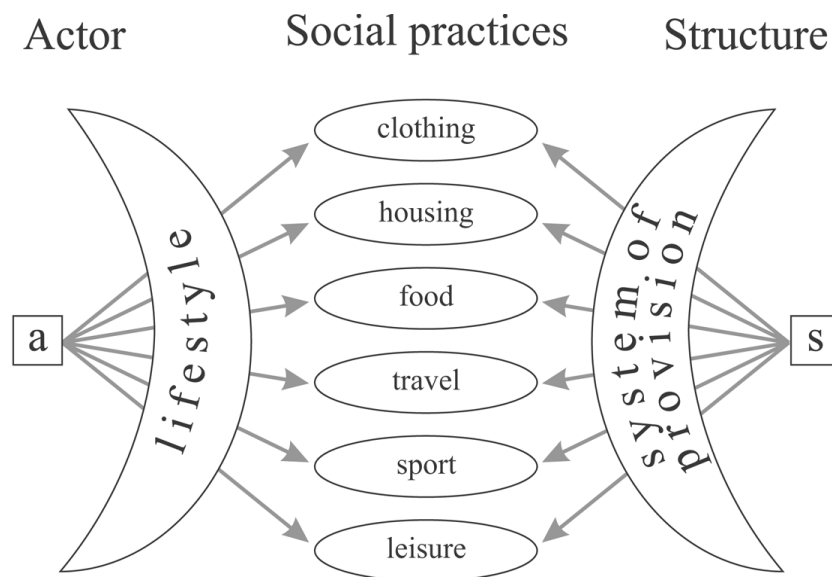
Theories of social and cultural capital may help explain why tourism consumption differs from other areas of consumption. Larsen et al. (2006) suggests that travel can be understood through its role in the formation of social capital – connections among individuals. Where people have wide networks of family and friends, they engage in tourism and travel as a means of visiting them and keeping in touch. Urry (2002) argues that travel is a marker of status and that by not engaging in travel people lose status. According to Urry (2002, p.5) “It is a crucial element of modern life to feel that travel and holidays are necessary”. Urry (2010) refers to the notion of ‘touring the world’, and argues that many people living in richer countries are connoisseurs and collectors of places. This connoisseurship results in the further amplification of mobility and applies to very many places, such as good beaches, clubs, views, walks, mountains, unique history, surf, music scene, food, landmark buildings and so on (Urry 2010). According to Urry (2010), the end of the 20<sup>th</sup> century and beginning of the 21<sup>st</sup> century have been characterised by the excess consumption of travel or, as he also refers to it, ‘binge mobility’. Participation in tourism and travel is also a way of gaining what Bourdieu (1984) calls cultural capital. By engaging in particular tourism practices an individual can seek to demonstrate belonging to a particular social class or group. From a cultural capital viewpoint, it is the symbolic value of holidays and travel which differentiates tourism consumption from other less visible and conspicuous forms of consumption and social practice.

#### **3.4.4 Social Practices Model**

Spaargaren (2003) developed the Social Practices Model as a sociological and contextual approach to examining sustainable consumption. In the context of this model, social practices are conceived as being routine-driven, everyday activities situated in time and space and shared by groups of people as part of their everyday life (Spaargaren and Van Vliet 2000). Verbeek and Mommaas (2007) argue that although holidays are not a day-to-day experience, they are characterised by routinised behavioural patterns. Most people, they suggest, have a routinised way

of booking their holiday, and many tourists do not question which transport modes they will use and in what type of accommodation they will stay.

The Social Practices Model is a conceptual model derived from Structuration Theory (Giddens 1991). The Social Practices Model differs from the commonly adopted psychology attitude-behaviour models in a number of respects. Rather than having individual attitudes or norms at the centre of the model, social practices are at the core of the model (see Figure 3.1). The Social Practices Model does not focus on individual behavioural items (for example recycling or car use) but looks at the possibilities for people to reduce the overall environmental impacts of their normal daily routines involving clothing, housing, food, travel, sport and leisure. The Social Practices approach is not a model that predicts the direction of change, nor a model that assumes a transition to sustainable development (Verbeek and Mommaas 2007). Verbeek and Mommaas (2007) argue that it is an ontological framework that provides a theoretical perspective and that needs empirical analyses.



Source: Spaargaren (2003, p.689)

**Figure 3.1: The Social Practices Model**

An important element of the model is the role of systems of provision, which means social structures are not treated as external variables but are brought into the centre of analysis. The responsibility of an individual towards environmental change is analysed in conjunction with the levels and modes of green provisioning (Spaargaren 2003). The levels of provisioning for sustainable alternatives differ among the various social practices. When there is a high level of green provisioning, individuals are more likely to be in a position where the greening of a lifestyle segment becomes a feasible option. Equally when there is a low level of green provisioning in terms of infrastructural arrangements, the greening of relevant lifestyle segments becomes more challenging. For example, a UK tourist who wants (or needs) to travel to Switzerland on holiday, but also has strong environmental concerns, has a choice between flying and the lower carbon emitting option of taking a train (higher level of green provisioning). On the other hand, a UK tourist who wants (or needs) to travel to Tenerife, but also has strong environmental concerns, may have no option but to fly to Tenerife due to a lack of provisioning of alternative 'greener' transport modes.

In the Social Practices Model, lifestyle is the centre of analysis. Giddens (1991, p.81) defines the lifestyle of an individual agent as an:

“Integrated set of practices which an individual embraces, not only because such practices fulfil utilitarian needs, but because they give material form to a particular narrative of self-identity”.

Lifestyles consist of lifestyle segments that may vary considerably in terms of the contribution they make to the net environmental impact of the lifestyle of the individual. Spaargaren (2003) argues that some people deliberately insulate specific lifestyle segments from the environmental considerations they accept and apply in most other segments of their lifestyle. This view is supported by Becken (2007), who found that some tourists perceived environmental responsibility differently in the holiday context compared with their everyday situation at home. Tourists in the study expressed a view that climate change mitigation should focus on the home environment rather than on travel, which was often perceived to be extraordinary and therefore a negligible contribution to overall emissions. Becken's (2007) study also found evidence of respondents 'greening' other parts of

their lifestyle by, for example, belonging to environmental organisations or supporting conservation projects. Similar findings are reported by Barr et al. (2010) and Dickinson et al. (2010), whose studies suggest that some individuals use environmentally conscious activities at home to justify a lack of commitments whilst on holiday.

According to Spaargaren and Martens (2005), there are likely to be major obstacles to consumers transitioning to new sustainable routines if these new routines result in a negative impact on existing levels of comfort, convenience and cleanliness. In their Low-Cost High-Cost Model, Diekmann and Preisendörfer (2003) argue the costs of behaviour (in a broad sense, not just financial) are a key variable in explaining discrepancies between environmental attitudes and behaviour. The basic premise of the Low-Cost High-Cost Model is that environmental attitudes influence environmental behaviour in situations and under conditions connected with low costs and little inconvenience for an individual. The hypothesis suggests that individuals are much more likely to engage in environmental behaviour relating to low-cost and low-inconvenience domains, such as recycling household waste, than they are with high-cost and high-inconvenience domains, such as giving up flying or changing holiday practices.

A small number of recent studies have used the Social Practices Model when researching tourism behaviour. Verbeek and Mommaas (2008) apply a social practices approach to the study of sustainable tourism mobility. Whilst not focusing specifically on tourism's impact on climate change, the study does have some important findings for the climate change debate. Verbeek and Mommaas (2008) argue that the overall holiday is a social practice, not the chosen transport mode. When planning holidays, people are not focused on transport modes as such; rather the transport mode is part of an overarching holiday practice. In other words, the choice of type of holiday, destination and transport mode should be considered as part of an integrated holiday package. Verbeek and Mommaas (2007) suggest that producers and consumers shape each other and that, in order to be successful, socio-technical innovations need to fit with tourists' routines and lifestyles as well as providers' routines and structure of supply.

Dickinson et al. (2010) investigated the justifications of travel mode choice by slow travellers and non-slow travellers, in light of the climate change debate, using the Social Practices Model to explore how holiday travel is constrained by both individual agency to act and the structures that exist within the tourism industry. They conclude that structures of provision in the tourism industry have been influential in the development of socially embedded rules for travel such that most people automatically assume they will fly to certain destinations, although they acknowledge that holiday time constraints and the travel distances involved also have an impact. In addition, they argue that this situation is enforced by slow travel holiday options not being readily available through the institutional structures of tour operators.

Randles and Mander (2009) conducted a study amongst frequent flyers and analysed the responses from a sociological perspective. They focus on the consumption of, rather than demand for, air travel. They argue that for many consumption behaviours, the causal explanations lie deep within the interactions between social practices, the supply and circulation of products and services; and physical technical infrastructures. These three dimensions co-construct each other and create a propensity for 'lock-in', which creates an inherent resistance to change. Behaviour is seen as constituted through practice, and practice becomes the primary unit of analysis.

The Social Practices Model is relevant to this study for a number of reasons. First, it places emphasis on structural constraints in society, an area often overlooked by psychology theories. Many of the barriers to engaging with climate change in a holiday context are situational and instrumental factors, as detailed in Section 3.3. Thus, the model provides a theoretical framework in which to examine holidays and climate change engagement that incorporates both the agency of an individual to act and the structural constraints within tourism. Secondly, the proposition in the model that some people apply different environmental considerations to different segments of their lifestyle provides insight into the 'reluctance to change lifestyles' and 'protecting the environment in other ways' barriers with relation to holidays and climate change. Thirdly, the model advocates the decision in this

study to treat holidays as the social practice to explore rather than focusing specifically on flying behaviour.

### **3.5 CONCLUSIONS AND RESEARCH GAP**

The review of the literature has highlighted that the tourism industry is a significant contributor to global climate change and that the predicted future growth in international tourism is a major concern. Air travel has been shown to dominate GHG emissions from the tourism industry and is thus the most important area to address in terms of reducing tourism's impact on climate change. Research suggests that reductions in GHG emissions from technological innovation and market-based policy changes will be insufficient on their own in preventing the overall levels of emissions from air travel continuing to increase in the future. The main reason for this is that the predicted growth in demand for air travel is widely believed to be greater than the emissions efficiencies that can be achieved. As a result, behaviour change by tourists is seen, by some researchers, to be key in reducing tourism's contribution to climate change. However, the limited research conducted on tourists' awareness and attitudes towards air travel and climate change suggests that behavioural change will not be a straightforward or readily accepted process. Many tourists appear reluctant to consider changing their travel behaviour and a number of potential barriers to engagement have been highlighted. The most potentially relevant barriers to action in a holiday and climate change context have been identified from the literature. These barriers have then been discussed with reference to psychology and environmental sociology theories of behavioural change.

While tourism's contribution to climate change is unquestionably an important area of study, very little research has been undertaken on exploring tourists' awareness of and attitudes towards holidays and climate change, and their likelihood to engage in behavioural change. The tourism and climate change literature calls for more research into the awareness of tourists and their reactions to climate change impacts (Dubois and Ceron 2006a), and the tracking of travel

behaviour and opinions on the sustainability of air travel (Shaw and Thomas 2006). Similarly, Böhler et al. (2006, p. 668) state that:

“More precise information about the existing level of knowledge concerning the environmental consequences of holiday mobility and the individual requirements for a behavioural change is needed”.

The small number of studies that have investigated tourists’ awareness of and attitudes towards climate change (see, for example, Shaw and Thomas 2006; Becken 2007; Randles and Mander 2009; Cohen et al. 2011) have tended to focus on air travel. As advocated by a Social Practices approach, there is a need to also explore tourists’ awareness of and attitudes towards holidays and climate change, rather than flying and climate change, as this may offer new insights into the tourism and climate change problem. Furthermore, there appears to have been no research undertaken on the potential for behavioural change and barriers to action in a tourism and climate change context. Thus, there is much scope for dedicated research into the potential for behavioural change towards less carbon-intensive holiday practices, and the identification of possible barriers preventing this change.



# CHAPTER 4: METHODOLOGY

## 4.1 INTRODUCTION

The chapter begins with the research aim and objectives and then discusses the research approach. Justifications for using a mixed methods strategy are presented. The rationale for the selection of focus group research as the qualitative method and questionnaires for the quantitative method are outlined. Stage One of the research approach is presented in detail, from the initial research design of the focus groups through to the data analysis and interpretation stages. The questionnaire survey in the second stage of data collection is then described. Ethical considerations and the limitations of each method are also discussed. The chapter concludes with a brief overview of the presentation of the findings in the subsequent chapters.

### 4.1.1 Research aim and objectives

The aim of this research is to analyse the role that the climate change impacts of holidays play in the decisions of tourists in order to develop a conceptual framework of the barriers to behavioural change.

In order to achieve this aim, six specific objectives were established:

1. To identify the levels of awareness amongst tourists of the impacts holidays have on climate change.
2. To establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists.
3. To explore the attitudes of tourists towards climate change and changing holiday behaviour.
4. To identify the behavioural changes that tourists are engaging with in a holiday context to reduce their individual impacts on climate change.

5. To analyse the major barriers to tourists adopting less carbon-intensive holiday practices and to determine which barriers are more salient for different groups of the population.
6. To develop a conceptual framework of the most salient barriers to behavioural change.

## **4.2 RESEARCH APPROACH**

A mixed methods strategy has been adopted in this study, based on a sequential exploratory design (Creswell 2003; Saunders et al. 2007), in which an initial stage of qualitative data collection and analysis was followed by a second stage of quantitative data collection and analysis that built on the results of the first qualitative stage. Stage One of data collection involved focus groups. The findings of the focus groups were then analysed and used in the formulation of the questionnaire survey employed in Stage Two of data collection. The results of the questionnaire were then analysed after the surveys had been conducted. The results and analyses of the two data collection methods were then integrated at the interpretation stage of the study (Creswell 2009), and are reported in Chapter 8. Consideration has to be given to the weighting or priority of the qualitative and quantitative research (Punch 2005; Creswell 2009). In this study, the two stages complemented each other and both provided a valuable contribution to the research questions. Therefore, the two methods were afforded equal status.

A mixed methods approach has been adopted for a number of reasons. First, in terms of addressing the specific aim and objectives of this study, a mixed methods strategy is considered to be superior to a mono-method strategy. Gillham (2000) argues that a multi-methods approach to real-life questions is important because a single approach is rarely adequate. However, mixed methods research is not necessarily superior to mono-method research for all research questions (Saunders et al. 2007; Bryman 2008). As very little research has been conducted to date on tourists' awareness of the relationship between holidays and climate change, a mixed methods approach has the advantage of providing rich qualitative data as

well as more generalisable quantitative data, and thus generating a more comprehensive picture. The combination of both forms of research method is considered to provide a more complete answer to the research questions (Creswell 2009). In this study, the research aim and objectives have informed the decision on research approach and choice of research methods (Punch 2005; Saunders et al. 2007).

Secondly, in addition to the completeness argument, a mixed methods approach was adopted as it allows for a triangulation process to take place (Bloor et al. 2001; Saunders et al. 2007). If the results of different methods converge then there is greater confidence in the findings (Gillham 2000). One of the ways that triangulation can be employed is by cross-checking the findings derived from a method associated with a quantitative strategy with the findings from a method associated with a qualitative strategy (Bryman 2008). Triangulation is particularly relevant for this study as previous research using a qualitative approach to investigate tourists' awareness of and attitudes towards climate change (see, for example, Becken 2007) have found somewhat contradictory results compared to the findings of quantitative surveys and opinion polls (see, for example, Department for Transport 2008).

Finally, an equally important justification for using a mixed methods approach is the instrument development argument (Bryman 2008; Creswell 2009). The findings from the qualitative research method employed in Stage One provided valuable contextual knowledge (Bloor et al. 2001) of the research problem which was then used in the design of the survey questions in Stage Two of the research. As a very limited amount of prior research has been conducted on tourists' understanding of how tourism can impact on climate change, it was important that a qualitative research stage preceded the questionnaire survey so that a clearer picture could be obtained of the language used by tourists and their levels of understanding related to climate change and holidays. As a result, the questionnaire survey is grounded in the views of the focus group participants (Creswell 2003).

In addition to the arguments already made for adopting a mixed methods strategy, with a sequential exploratory design (Creswell 2003; Saunders et al. 2007), the choice of research approach was also influenced by the approach used in previous studies (Punch 2005). Table 4.1 provides information on the research strategies and methods adopted in previous studies related to tourism and climate change.

**Table 4.1: Methods used in previous studies related to tourism and climate change**

Author	Publication Date	Location	Research Strategy	Research Method(s)	Sample Size
Böhler et al.	2006	Germany	Mixed Methods	Survey Interviews	1,991 84
Gössling et al.	2006	Tanzania	Quantitative	Survey	252
Shaw and Thomas	2006	England	Qualitative	Focus Group Interviews	18 18
Becken	2007	New Zealand	Qualitative	Interviews Focus Groups	63 32
Randles and Mander	2009	England	Qualitative	Interviews	20
Barr et al.	2010	England	Mixed Methods	Survey Focus Groups	202 12

In previous studies, qualitative, quantitative and mixed methods approaches have all been used. There is no consistently preferred approach and thus it is difficult to conclude that any one approach is superior or more applicable than the others. The use of qualitative and quantitative research methods in previous studies supports the view expressed in the previous section that a mixed methods approach may provide a more complete answer to the research question. Table 4.1 also shows that the research methods used in this study, focus groups and a questionnaire survey, have also been employed in previous studies investigating tourism and climate change.

Mixed methods research enables the different strengths of qualitative and quantitative research to be capitalised on and the associated weaknesses with each method to be somewhat balanced (Punch 2005; Creswell 2009). However, there is not universal agreement that integration of the two methods is desirable or feasible

(Bryman 2008). Bryman states that the arguments against adopting mixed methods tend to be based around two lines of thought:

1. The idea that research methods carry epistemological commitments
2. The idea that quantitative and qualitative research are separate paradigms

The first argument, referred to as the embedded methods argument, considers research methods as being inescapably rooted in epistemological and ontological commitments. However, Bryman (2008) argues that the idea that research methods carry with them fixed epistemological and ontological implications is difficult to sustain when qualitative and quantitative methods are both capable of being put to a wide variety of tasks. The second argument, the paradigm argument, is closely related to the first one. This argument centres on the view that qualitative and quantitative research are paradigms in which epistemological assumptions, values and methods are inextricably intertwined and incompatible between paradigms. In response to this argument, Bryman (2008) suggests that it is not clear that qualitative and quantitative research are in fact paradigms.

#### **4.2.1 Rationale Stage One**

At the start of this study, relatively little research had been undertaken with respect to tourism and climate change (Becken 2007; Hunter and Shaw 2007). Therefore, exploratory focus group research was chosen as it has the potential to highlight important factors and variables that are not evident in the limited tourism and climate change literature. It can be argued that focus groups offer a more natural environment than that of individual interviews, as participants are interacting with other people, just as they do in real life (Krueger and Casey 2000). The literature also suggests that group interaction will lead to a wider range of views, as participants seize and develop on the comments of other group members (Bryman 2008). Group discussion can result in participants defending and more fully explaining their views, thus providing a greater insight into their thoughts and beliefs. Another advantage with focus groups is that there is more freedom for participants to bring to the fore issues they consider important to a topic than there is in individual interviews (Bryman 2008), which helps to reduce the social

desirability effect which can distort this kind of research. However, there is scope for group bias. To minimise potential group bias individual tasks were integrated with group discussion.

#### **4.2.2 Rationale Stage Two**

While the aim of the focus group research in Stage One was to generate rich qualitative data on tourists' awareness of and engagement with climate change, the aim of the quantitative research in Stage Two was to produce more generalisable findings. As a result, a survey was chosen as the most appropriate research method. According to Sarantakos (2005), surveys are the most commonly used method of data collection in the social sciences. There are two main types of survey method: the structured interview and the questionnaire (Saunders et al. 2007; Creswell 2009). Each has advantages and disadvantages over the other. Mainly as a result of time and cost considerations, written questionnaires were chosen for this study. Questionnaires are a relatively inexpensive method of data collection (Oppenheim 1992), can produce quick results (Sarantakos 2005) and enable the researcher to identify attributes of a large population from a small group of individuals (Creswell 2009). However, there are a number of limitations to the use of questionnaires. These include the inability to probe or clarify answers given and correct any misunderstandings respondents may have (Oppenheim 1992; Sarantakos 2005). The questionnaire survey undertaken in Stage Two was cross-sectional (Saunders et al. 2007; Creswell 2009).

### **4.3 STAGE ONE: FOCUS GROUPS**

#### **4.3.1 Research design**

The rationale for undertaking a series of focus groups as an exploratory phase of data collection was two-fold. First, there were three specific objectives of the focus group research:

1. To identify the levels of awareness amongst tourists of the impacts holidays have on climate change.
2. To establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists.
3. To identify the major barriers to tourists adopting less carbon-intensive holiday practices.

The first two objectives of the focus group research are the same as the first two objectives of the overall study. The third objective of the focus groups provided insight into the fifth and sixth objectives of the study.

The second aim of the focus groups was to provide a contextual basis (Bloor et al. 2001) for the design of the questionnaire survey to be implemented in the second quantitative stage of data collection. The role of the focus groups was to provide information on the language used and understood by participants, as well as their levels of awareness and understanding of the subjects discussed (Morgan 1998), thus enabling the design of a questionnaire that is grounded in the views of the focus group participants. The focus groups were also undertaken to generate new ideas for the questionnaire that were not identified from the literature review (Morgan 1998).

However, there are a number of drawbacks with using focus groups rather than individual interviews in this research situation. These include the increased length of time it takes to transcribe focus groups, in part due to difficulties in identifying participants and also from participants talking at the same time (Morgan 1998; Bloor et al. 2001). It can also be more difficult and time consuming to organise and recruit for focus groups compared with individual interviews (Bryman 2008). In addition, the focus group moderator can have the additional challenge of having to deal with dominant participants and rather shy participants in the same group (Krueger and Casey 2000). Despite these drawbacks, the advantages of focus groups were considered to outweigh the disadvantages in this research situation, and thus focus groups were adopted as the method of qualitative data collection.

### **4.3.2 Focus group design**

The focus group discussions followed a sequenced topic guide (Appendix 4.1). The focus group design consisted of largely open questions and tasks that proceeded from the general to the more specific (Krueger and Casey 2000) as follows:

- a) Understanding of climate change (open question)
- b) How lifestyles might impact on climate change (task)
- c) Important factors when planning a holiday (task)
- d) Climate change as a factor in holiday decisions (open question)
- e) Ways holidays might impact on climate change (open question)
- f) Barriers to behavioural change (open questions)

The questions asked and tasks set were designed to stimulate discussion and group interaction. The topic guide was informed by the objectives of the research and the literature reviewed. The aim was to introduce sufficient structure to ensure the groups addressed the research topic whilst not inhibiting the natural flow of group interaction (Bloor et al. 2001). The group discussions began with an introduction to the focus group by the researcher, followed by a short, uninterrupted statement by each participant of an autobiographical nature (Morgan 1998). At the end of each focus group, participants were invited to ask any questions they had to the researcher (Krueger and Casey 2000).

### **4.3.3 Focus group protocol**

It has been argued that participants should receive adequate information on the focus group during recruitment, so that they are able to give their informed consent to take part (Bloor et al. 2001). Potential participants were told that the focus group discussion would be about climate change and people's everyday lives. Mention of holidays and travel were deliberately avoided in the recruitment process so as not to create a connection in the participants' minds between holidays and climate change if one did not already exist. By disclosing that climate change was the main theme of the group discussions, the researcher was aware that this



could potentially lead to social desirability bias (Sterngold et al. 1994; Chung and Monroe 2003). In addition, there was the possibility that the participants recruited may be more interested in, and knowledgeable about, climate change than the population in general as they volunteered to take part. However, failure to disclose this information would not only have raised concerns regarding covert recruitment methods (Lugosi 2006), it may also have resulted in the recruitment of participants who felt misled and were then unwilling to discuss climate change. As an incentive to recruitment (Bloor et al. 2001), each participant was given a £10 Marks and Spencer voucher at the end of the focus group. Details of the vouchers were communicated to potential participants before they were recruited and were offered as a small token of appreciation for their time (Krueger and Casey 2000). Refreshments (tea, coffee and biscuits) were provided for participants at the start of each focus group. Snacks and drinks have been found to promote conversation and communication within the group (Krueger and Casey 2000).

#### **4.3.4 Sampling**

The focus group research was a cross-sectional study (Saunders et al. 2007). Four focus groups were conducted in Bournemouth, UK, in July 2008. The researcher made initial contact with a key person belonging to a pre-existing group. This person then helped facilitate the recruitment of other participants from within this social network. Recruiting a focus group through an established social network reduces recruitment effort for the researcher (Bloor et al. 2001). Methods used to inform potential participants of the focus groups included emails, posters, and word of mouth. Recruitment from within the pre-existing groups was based on self-selection by participants responding to the emails and posters. The intention was to conduct focus groups consisting of between 6 and 8 participants (Krueger and Casey 2000; Bloor et al. 2001). To achieve this, a small amount of over-recruitment took place to allow for people dropping out in advance or not showing up on the day (Bloor et al. 2001). Morgan (1998) recommends over-recruiting by 20%. When 10 participants had come forward and volunteered to take part in each focus group, recruitment was halted. The attrition rates for the focus groups were lower than predicted in the literature. There were 8 participants in the first focus group, 7 participants in the second focus group, 10 participants in the third focus

group, and 9 participants in the fourth focus group. In total, 34 participants took part in the focus group research

Each group was relatively homogeneous and the participants were recruited from pre-existing groups. Bloor et al. (2001) argue that groups should be reasonably homogeneous, as groups that are too heterogeneous may result in conflict and the repression of views of certain individuals. The first group consisted of students (Student Group), the second group consisted of parents with young children (Family Group), the third group consisted of working professionals (Professionals Group) and the fourth group consisted of relatively affluent retirees (Retired Group). The aim was not for a representative sample or to make comparisons between groups, but to cast a wide net to embrace a diversity of understandings and experiences of travel and overseas holidays. Whilst potential participants were not screened prior to selection on their income or travel habits, the intention was to recruit people with differing socio-demographic profiles. The Family Group was recruited from an economically deprived area of Bournemouth and, along with the Student Group, contained relatively less affluent participants. The Professionals and Retired Groups contained relatively affluent participants. The results of the focus groups revealed that not only were the participants in the Professionals and Retired Groups regular travellers (more than one overseas trip a year), so were most of the participants in the Student Group. Participants in the Family Group were less frequent travellers, but all had taken at least one holiday in the last two years and all but one of the participants had taken at least one overseas holiday in this period.

#### **4.3.5 Data collection**

Consideration was given to the accessibility of the focus group venues for participants (Bloor et al. 2001). The first focus group, which consisted of PhD students, was held in room D265, Dorset House, Talbot Campus, Bournemouth University. The first focus group took place on Wednesday 2<sup>nd</sup> July at 10:30am. As this was the first focus group conducted, participants were asked at the end of the discussion to provide feedback on how they found the focus group and to make any recommendations on how it could be improved. The participants provided

positive feedback on the focus group experience. They were happy with the content of the focus group discussion, they thought the discussion was well organised and controlled, and they were happy with the length of time it lasted. As a result, no changes were made to the discussion guide. The second focus group was held at the Wellspring Centre, Haviland Road, Boscombe, Bournemouth. The participants in this focus group were part of an exercise class that took place at this venue. The researcher took advantage of the fact that this group had a regular meeting time and place, and the focus group was held after an exercise class had finished. The second focus group was conducted on Monday 14<sup>th</sup> July at 11:00am. The location of the third focus group was Marshalls Point, Richmond Hill, Bournemouth. Marshalls Point is an office building in central Bournemouth. The participants in this focus group all worked in the Marshalls Point building, and the discussion took place in the boardroom. The third focus group was held on Tuesday 22<sup>nd</sup> July at 12:00pm. The fourth, and final focus group, was conducted on Thursday 31<sup>st</sup> July at 6:00pm. It was held at the Ferndown Golf Club, Golf Links Road, Ferndown, Bournemouth, where all the participants of the focus group were members of the club. Each focus group lasted between 1 hour 15 minutes and 1 hour 30 minutes. Bloor et al. (2001) recommend one hour and 30 minutes as the maximum length of a focus group. Krueger and Casey (2000) suggest that 2 hours is the maximum duration.

#### **4.3.6 Data analysis**

Each focus group was recorded using two digital voice recorders and then transcribed verbatim. As there were only four focus groups, the data were coded and analysed manually. Before starting to code the data, the researcher, following the recommendations of Bryman (2008), read through each transcript without making any notes or comments. The transcripts were then re-read a number of times, with the researcher highlighting significant remarks and making relevant notes. Codes were then developed and reviewed, and connections between codes were sought. Codes were generated inductively from the raw data, rather than deductively from theory and previous research (Boyatzis 1998); though the material was strongly influenced by the questions asked in the focus groups. When

the coding process had been completed, the data were interrogated and systematically explored in order to generate meaning (Coffey and Atkinson 1996).

The next stage of the analysis was to identify emerging themes. A thematic analysis of the focus group data was undertaken (Boyatzis 1998; Ryan and Bernard 2003; Braun and Clarke 2006). Techniques outlined by Ryan and Bernard (2003) were used to discover themes in the data. These included searching for repetitions in the data sets, and searching for similarities and differences by making systematic comparisons across the data. Boyatzis (1998, p.4) describes a theme as:

“A pattern found in the information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon”.

Researcher judgement is necessary to determine what a theme is and to decide how key that theme is to the study (Braun and Clarke 2006). The importance of a theme is not so much dependent on quantifiable measures but rather whether it captures something insightful in relation to the research aim and objectives (Braun and Clarke 2006). As part of the theme identification process, quotes from participants were cut from the transcripts, and sorted and organised around the emerging themes (Ryan and Bernard 2003). The final stage of the analysis involved relating the findings and key themes back to the relevant literature and theory.

#### **4.3.7 Ethical considerations**

During recruitment, potential participants were made aware that the focus groups would be discussing climate change and everyday lives. It was important to disclose information on the nature of the discussion so that participants could give their informed consent to take part (Bloor et al. 2001). In the emails and posters utilised during recruitment, it was made clear to potential participants that no specific knowledge or understanding of climate change was required in order to take part, and it was the views of the general public that were of interest. As the recruitment of participants involved the use of an intermediary from the pre-existing groups, the intermediary was supplied with information on the focus

groups. This included the minimum and maximum number of people to recruit, an estimate of the likely duration of the discussion, limited but clear details on the research topic being discussed, and instructions not to screen out potential participants that expressed an interest in taking part (Bloor et al. 2001). As participants in the focus groups had self-selected to take part in the research and also listened to the explanation about the focus group given by the researcher just before it commenced, they were viewed as giving their informed consent to take part. It was not deemed necessary to obtain a formal, written letter of consent from participants in this research study (Krueger and Casey 2000).

Before the start of each focus group, participants were informed about the confidentiality of the data they were providing. They were made aware that the focus group was being audio recorded, and were asked if they consented to this recording. Participants' names were not used in the analysis and results of the focus groups so as to protect anonymity. Complete anonymity, however, could not be given due to the nature of group discussions. In focus groups, information and opinions shared with the researcher are also inherently shared with other participants in the group (Morgan 1998). Access to electronic and paper copies of the transcripts, and the audio recordings, were restricted to the researcher and the PhD supervisors. Participants were made aware that publication of the research would take place in the thesis, in a journal article and at conferences. Business cards belonging to the researcher were handed to all participants at the end of the focus group to enable them to contact the researcher, should they wish, with any questions or to obtain a copy of the published findings.

#### **4.3.8 Health and safety issues**

All four focus groups were conducted in locations where there was public access, limiting the health and safety risks to the participants and the researcher. The first focus group was conducted at Bournemouth University, the second at a community centre, the third in a large office building, and the fourth in a golf club clubhouse. The first three focus groups took place during the daytime, and the fourth was held in the early evening. To further minimise safety risk, the researcher left a record with a friend of where each focus group was taking place and an estimate of how

long it would last. The researcher checked-in with the friend after each focus group.

#### **4.3.9 Limitations**

The aim of the focus groups was not to produce generalisable results but to provide rich, qualitative data. The sample of participants was not designed to be representative, but was structured so as to generate an adequate cross-section of views. The composition of participants in each of the focus groups was designed to be different to the other groups in terms of socio-demographic characteristics. Homogeneity within groups was desired though. The organisation and recruitment of the focus groups in different environments: a university, a local community centre, an office building, and a golf club, helped to attract participants with a mix of different ages, lifestyle stages, wealth levels, and occupations. However, as only four focus groups were conducted, it was not possible to achieve such a wide cross-section of views as would have been possible had a greater number of focus groups taken place. The focus group conducted at the community centre, in a relatively economically deprived area of Bournemouth, was designed to obtain the views and experiences of a less affluent group of society. Whilst this group appeared less affluent than the other three groups, and engaged in fewer overseas holidays, it did not contain participants experiencing the strongest social and economic challenges in society. As a consequence, the opinions of the lower social classes are likely to be under-represented in the focus group results.

A further limitation of the focus group study was evident when transcribing the discussions. Although participants were asked before each focus group not to speak at the same time (Morgan 1998), on rare occasions this did happen. At times where more than one person was talking, this made the transcription of the conversation from the audio recordings difficult. The use of two digital voice recorders positioned at each end of the table helped, to some degree, to negate the problem. However, in a few instances it was not possible to transcribe perfectly the dialogue as a result of two or more participants talking at the same time.

Lincoln and Guba (1985) propose that trustworthiness is the criterion on which qualitative research should be assessed. According to the authors, trustworthiness consists of four criteria: credibility, transferability, dependability and conformability. Lincoln and Guba (1985) suggest that triangulation is one of three ways of improving the probability of producing credible findings. In this study, the focus group findings were triangulated with the results of the questionnaire survey and compared with the findings of previous studies. In terms of the transferability criterion, Lincoln and Guba (1985) suggest that the researcher provides the thick description necessary that makes transferability judgements possible on the part of potential appliers. Dependability is the parallel to reliability in quantitative research (Bryman 2008). Following the recommendations of Lincoln and Guba (1985), complete records were kept of all phases of the focus group research process. Whilst complete objectivity is not possible in social research, conformability is concerned with ensuring the researcher can be shown to have acted in good faith (Bryman 2008). Lincoln and Guba (1985) suggest that the keeping of an audit trail, as outlined for the dependability criterion, can enable an inquiry auditor to examine the records and determine conformability and dependability simultaneously.

## **4.4 STAGE TWO: QUESTIONNAIRE**

### **4.4.1 Research design**

A questionnaire was employed in Stage Two of the study to further investigate the objectives of the research. The findings of the focus group research in Stage One and the literature reviewed were used in the formulation of the questionnaire. The aim of the questionnaire was to build on the rich qualitative findings of the focus group research and to generate more generalisable results. The results of the questionnaire enabled all six objectives of this study to be fulfilled. A self-administered questionnaire was designed that was completed by the respondents in their own home and in their own time.

The questionnaire was distributed by the researcher using a drop and collect technique (Saunders et al. 2007). A drop and collect technique offers the opportunity for face-to-face contact with respondents and can lead to a higher response rate than postal surveys (Ibeh et al. 2004). As this study is interested in UK tourists' engagement with climate change, the potential population for this research was all residents of the UK. However, conducting research with a representative sample of UK residents would, due to time and cost constraints, involve a postal survey. As postal surveys frequently have response rates below 20% (Simmons 2008) this raised issues regarding non-response bias. As a result, a decision was made to restrict the population to residents of the Bournemouth (BH) postcode area in order to enable the drop and collect method to be used. Whilst this improved the potential response rate for the survey, it had the downside that the results of the questionnaire are only strictly generalisable to Bournemouth postcode residents (the sample population). While the results of the questionnaire may offer an insight into UK tourists' awareness and engagement with climate change in a holiday context, generalising the results of the survey to all UK tourists could be open to question.

#### **4.4.2 Type of investigation**

The questionnaire was a cross-sectional study (Saunders et al. 2007), with the data collected over a four-week period in October 2010. This autumnal period for data collection was chosen as it is one of the low seasons for international holidays. As the aim of the survey was to collect data on the attitudes and behaviour of UK tourists with regards overseas holidays and climate change, the study needed to be conducted at a time when these tourists would be at home and available to complete the questionnaire. October was chosen as the data collection period as it falls after the busy summer holiday months and thoughts about overseas holidays should still be fresh in respondents' minds. A cross-sectional approach was appropriate for the aim and objectives of this study. Although a time-series study would have enabled the measuring of attitudes and behaviour over time to determine whether variables were changing, this was not a requirement of the study. To have conducted a time-series study would have involved considerable additional time and cost resources. A time-series approach could not be justified



when a cross-sectional study allowed for the aim and objectives of the study to be adequately met.

#### **4.4.3 Questionnaire design**

The questionnaire was designed in accordance with the principles and guidelines set out by Oppenheim (1992) and Gillham (2000) and is a descriptive, rather than analytic, survey (Oppenheim 1992). Following the suggestion of Gillham (2000), a small number of open questions were included in the questionnaire. Even with exploratory research prior to the questionnaire, and a detailed literature search, there remains considerable scope for genuine discovery from open questions (Gillham 2000). The questions were designed in a logical, developmental order (Gillham 2000). The questions and the response options were based on findings from the literature review and the focus group research in Stage One of the study. Designing questions based on the responses of focus groups has the advantage of the question wording not being made up by the researcher (Oppenheim 1992). Conducting focus group research prior to the questionnaire being designed also enabled the identification of most of the probable answers to closed questions (Gillham 2000).

The questionnaire was organised into six sections:

- Section A contained questions relating to the holidays that the respondents had taken in the previous three years
- Section B investigated respondents' general awareness of climate change impacts
- Section C contained questions relating to how climate change may or may not influence respondents' holiday decisions
- Section D investigated respondents' thoughts and opinions on holidays and climate change and the barriers to behavioural change
- Section E aimed to determine the ways in which respondents' holiday behaviour might change in the future for climate change reasons
- Section F contained socio-demographic questions

The first question in Section A asked respondents if they had ever been on an overseas holiday. This question was included in the questionnaire as a screening question. The study is interested in the views and opinions of international tourists. Respondents that answered that they had never been on an overseas holiday were excluded from the analysis. Respondents that answered no to this question were routed to Section B of the questionnaire. They were not asked to stop completing the questionnaire after the first question because this may have resulted in some respondents giving a false answer just to avoid having to continue with the questionnaire. Other questions in Section A asked respondents how many overseas holidays they had taken in the last 3 years (question 2), which continents they had visited (question 3) and what were the modes of transport used to travel to the destination (question 4). These questions were included to provide data on the frequency with which overseas holidays were taken by respondents and the distances travelled.

Section B investigated awareness and contained two questions that asked for respondents' opinions on the size of the contribution to climate change of various items and activities. Question 5 contained a number of different activities associated with everyday lives. Question 6 contained items directly associated with holidays. In the focus group research, participants were unable to identify any holiday related contributions to climate change other than air travel. The response options for questions 5 and 6 were a five point Likert scale with the choice of very large, large, medium, small and very small. An additional response option of 'uncertain' was also provided. This 'uncertain' option was included as awareness of the climate change impacts of holidays was quite low in the focus group research. These questions were included in order to gauge how large respondents' considered the contribution to climate change to be for these various items.

The third section examined the role that thoughts on climate change played in the holiday decisions of tourists and addressed the second objective of the research: To establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists. Question 7, in Section C, asked respondents whether they think about the impacts their holidays might have on climate change when planning their holidays. Those respondents that answered that they did think

about climate change impacts when planning their holidays were asked to explain how exactly these thoughts influence their holiday planning in an open question (question 8). Respondents that answered no to question 7 were asked to give their levels of agreement (on a five point Likert scale) to a number of statements relating to the climate change impacts of holidays (question 9).

Section D contained four questions, each of which consisted of a number of statements that respondents were asked to state their level of agreement with, based on a five point Likert scale with response options strongly agree, agree, uncertain, disagree, and strongly disagree. Question 10 contained statements that measured attitudes towards changing holiday behaviour for climate change reasons. Question 11 contained statements measuring the structural barriers to behavioural change, whilst questions 12 and 13 contained statements relating to the internal and external barriers to action. The wording of the statements in questions 11, 12 and 13 were heavily influenced by the engagement with climate change literature reviewed in Chapter 3, and the findings of the focus group research. The decision to divide the barriers to action into internal, external and structural constraints was based on the theoretical underpinning of the Social Practices Model (Spaargaren 2003) and the strength of the structural barriers revealed in the focus groups.

The wording of questions can have a major effect on answers (Gillham 2000). Attitudinal questions are particularly sensitive to question wording. Oppenheim (1992) recommends that single questions should not be relied upon when attitudes that are most important to the study are being measured. For these reasons, a minimum of two statements were included for each of the barriers to action in engaging with climate change being investigated in questions 11, 12 and 13. When writing attitude statements, Oppenheim (1992) recommends selecting some of the more contentiously worded statements of opinion from prior qualitative research, as attitudes are emotional and attitude statements should reflect these strong feelings. The attitude statements were designed so that there was a balance of positively and negatively worded statements and they were placed in a scrambled order so that statements belonging to the same barrier to action did not necessarily follow each other (Oppenheim 1992).

In questions 14 and 15, in Section E, a list of actions were presented and respondents were asked to state whether each action was something they already do, something they intend to do in the future, or if it is something they do not intend to do. The actions in question 14 all related to changes in holiday taking behaviour to reduce impacts on climate change. Question 15 contained actions connected with everyday living around the home that involved reducing impacts on climate change or having less environmental impacts. Previous research (Böhler et al. 2006; Becken 2007; Bergin-Seers and Mair 2009; Barr et al. 2010) has found that some individuals are relatively comfortable with participating in environmental behaviours in and around the home but are less prepared to do so in a holiday situation. These questions were included to examine whether the respondents in this research showed consistently more positive intentions to act in their home life compared with their holidays. Statements of intent regarding future behaviour often lack validity when compared with subsequent events (Oppenheim 1992). Bryman (2008) also suggests that questionnaire research can sometimes fail to accurately record people's behaviour. Although these potential issues were acknowledged, questions relating to current behaviour and future intentions were still included in the questionnaire as they had the potential to provide valuable information on how holiday behaviour may change in the future for climate change reasons. The final question in this section (question 16) was an open question that invited respondents to add any comments they wished to make.

Section F, the final part of the questionnaire, consisted of demographic questions. Personal data questions were placed at the end of the questionnaire, as recommended by Oppenheim (1992) and were preceded by a short explanation to respondents as to why they were being included.

There was a specific justification for each question included in the questionnaire. The key objective of the questions was to provide answers that would meet the objectives of the study. Table 4.2 shows how the questions in the survey addressed the objectives of this research study.

**Table 4.2: Research objectives and the corresponding questions in the survey**

<b>Research Objective</b>	<b>Question Addressing the Objective</b>
1. To identify the levels of awareness amongst tourists of the impacts holidays have on climate change.	Questions: 5, 6
2. To establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists.	Questions: 7, 8, 9
3. To explore the attitudes of tourists towards climate change and changing holiday behaviour.	Questions: 10, 11, 12, 13
4. To identify the behavioural changes that tourists are engaging with in a holiday context to reduce their individual impacts on climate change.	Question: 14
5. To analyse the major barriers to tourists adopting less carbon-intensive holiday practices and to determine which barriers are more salient for different groups of the population.	Questions: 11, 12, 13
6. To develop a conceptual framework of the most salient barriers to behavioural change.	Questions: 11, 12, 13
	Questions 1, 2, 3, 4 were included in the questionnaire in order to obtain data on past holiday taking.
	Question 15 asked respondents what behavioural changes to their everyday activities around the home they were engaging in for climate change reasons. This was included so changes to holiday behaviour could be compared.
	Question 16 was an open question included to enable any additional comments respondents wished to make.
	Questions 17, 18, 19, 20, 21 captured socio-demographic information.

#### **4.4.4 Sampling**

A probability sampling technique was used to draw a representative sample from the Bournemouth (BH) postcode area. Every member of this population had a statistically equal chance of being selected (Creswell 2009). The sampling frame for any probability sample is a complete list of all the cases in the population from which your sample will be drawn (Saunders et al. 2007). The completeness of the sampling frame is very important as an incomplete sampling frame may result in a sample not being representative of the total population. The sampling frame for

this study is all residential addresses in the BH postcode area and it was accessed using the Royal Mail Postcode Address File. Since the 1980s, the Postcode Address File has been the sampling frame of choice for the majority of national and large-scale probability samples in the UK (Arber 2001). The Postcode Address File is the most up-to-date and complete address database in the UK (Royal Mail 2010). It has advantages over the Electoral Register (alternative sampling frame) in that it is updated more regularly and has a more complete coverage (Wilson and Elliot 1987; Lynn and Taylor 1995). According to Arber (2001), the sampling frame used by researchers is the 'Small User File', which lists addresses normally receiving less than 25 items of mail per day. Any residential addresses receiving more than 25 items of post a day will be excluded from the sampling frame. In addition, approximately 10 per cent are non-residential addresses, such as shops and small businesses (Arber 2001), and these were excluded from the sample.

There are 26 postcode districts in the Bournemouth (BH) postcode area. The Bournemouth postcode area covers the towns of Bournemouth, Broadstone, Christchurch, Ferndown, New Milton, Poole, Ringwood, Swanage, Verwood, Wareham and Wimborne, and includes urban and rural areas. Individual postcodes from each of these 26 sectors were randomly generated by the Market Research Group in the School of Tourism at Bournemouth University. The Market Research Group is a licence holder of the Royal Mail's Postcode Address File. The number of postcodes randomly generated for each postcode district ranged between one and three, with the aim of creating a sample of 1,500 residential addresses. Care homes, hospitals, halls of residence and other institutions were excluded from the survey, and these addresses were removed from the sample. In total, 1,515 residential addresses were generated. A clustered sampling design was used whereby all residential addresses in each randomly generated postcode were selected to form part of the sample. A clustered sample is still a representative sample (Oppenheim 1992). The decision was made to cluster all residential addresses within each postcode, rather than generate 1,500 individual random addresses, because the time needed for data collection increases markedly for drop and collect questionnaires where the samples are geographically dispersed (Saunders et al. 2007). It was not practical for the researcher to drop and collect

questionnaires at 1,500 individual addresses scattered over such a wide area. In total, 59 postcodes were randomly generated across the 26 postcode districts and, thus, there were 59 sample points to travel to rather than 1,500. The random sample of addresses generated from the Royal Mail Postcode Address File was exported to a Microsoft Excel file. This Excel file had the full address of each residence belonging to each individual postcode. All addresses belonging to each postcode were grouped together in the file in chronological/alphabetical order.

In terms of deciding the appropriate sample size, it is a matter of judgement as well as of calculation (Saunders et al. 2007). Sekaran (2003) provides a table with suggested sample sizes for different size populations. For a population of 75,000 the suggested sample size is 383, while the suggested sample size for a population of 1,000,000 is 384. The Bournemouth (BH) postcode area falls between 75,000 and 1,000,000. In order to carry out factor analysis, Tabachnick and Fidell (1996) suggest a sample size of at least 300. Taking these findings into account, the target sample size for this study was set at 400.

#### **4.4.5 Pilot**

Before the questionnaire was piloted, a pre-test was undertaken with 12 colleagues and friends. The colleagues and friends were sent a copy of the draft questionnaire and a feedback form (see Appendix 4.2 for a copy of the draft questionnaire and Appendix 4.3 for the feedback form). The feedback form asked those taking part to time how long the questionnaire took to complete. The average time taken to complete the questionnaire was 14 minutes. Colleagues and friends were asked to report any questions or response options that were unclear, to identify any mistakes in the questionnaire, and to provide any suggestions for improving the questionnaire. As a result of the feedback, an additional response option was added to questions 5 and 6. The scale for the statements in these two questions was improved by adding a 'medium' contribution option. One of the items relating to the perceived contribution to climate change in question 6 (Activities engaged in on holiday) was removed from the questionnaire after the pre-test. 'Activities engaged in on holiday' was viewed as being too broad an item and, thus, made it difficult for respondents to answer. One friend commented that "Walking would

not contribute to climate change but jet skiing would". Following the suggestion by a number of friends that the battery of attitude statements in question 12 was too long for one question, the statements were split into two questions and an extra question was added to the questionnaire. Overall, the feedback was very positive and colleagues and friends reported finding the questionnaire both interesting and thought provoking.

Following amendments to the questionnaire after the pre-test, and after further revision of the survey, a formal pilot was carried out to validate the survey instrument. Oppenheim (1992) argues that it is essential to pilot every question, question sequence, scale, answer category, and respondent instruction. A copy of the piloted questionnaire is in Appendix 4.4. The questionnaire was piloted in two BH postcode districts, which were selected purposively for their convenience. Questionnaires were delivered to 30 residential addresses in Durrington Road (BH7) and 30 addresses in Kingswell Road (BH10). A cover letter was designed to accompany the questionnaire (see Appendix 4.5). The cover letter provided information on the research study being conducted and guidance on completing the questionnaire. The collection method for the questionnaire was also explained in the letter. Respondents were told that the researcher would be returning to collect the questionnaire in 3 days time and asked them to leave the completed questionnaire in a plastic bag on their doorstep if they did not wish to be disturbed.

The questionnaires were delivered on 7<sup>th</sup> September 2010 and collected 3 days later on Friday 10<sup>th</sup> September 2010. The delivery of questionnaires commenced from house number 1 on both streets and then every house was delivered to in chronological order until 30 questionnaires had been delivered in each road. The door bell was rung at each house and if an occupant was home then the questionnaire was explained to them. A covering letter and a copy of the questionnaire were given to each occupant. A considerable proportion of occupants (35%) spoken to at their door declined to take part in the survey. At houses where there was no one home, the covering letter and questionnaire were posted through the letterbox.



Collection of the questionnaires took place 3 days later. Out of the 60 households where a questionnaire had been delivered, a total of 27 questionnaires were collected, of which 26 had been filled in completely and one had been left entirely blank. At houses where no questionnaire had been left on the doorstep or inside the porch, the researcher rang the door bell. The occupant was asked whether they had seen the questionnaire that was delivered a few days earlier. A reminder letter (see Appendix 4.6) and stamped addressed envelope were handed to 6 occupants. A further 3 occupants declined to take part in the survey. At houses where there was no questionnaire left on the doorstep and no one answered the door bell on collection, a reminder letter and a stamped addressed envelope were posted through the letterbox.

In total, 60 questionnaires were delivered in the pilot study. Of these 60 questionnaires, 26 completed forms were collected from the doorstep and a further 9 were returned by post in the stamped addressed envelopes. There were 12 houses where the occupant declined to take part in the survey, thus 72 residential addresses in total took part in the pilot. The response rate for the drop and collect with additional return by post method was 48.6%. If this response rate were to be indicative of what might be expected from the whole BH postcode area, then the number of residential addresses required from the Royal Mail's Postcode Address File to generate a sample of 400 completed questionnaires would be 824. Using the proposed 1,500 residential addresses would, based on a response rate of 48.6%, produce 729 completed questionnaires. This is almost double the target sample size. However, the two roads where the pilot study took place were purposively sampled for their convenience as they were close to the researcher's home. The houses sampled were in reasonably affluent areas and were mainly detached properties. They are not necessarily representative of the overall housing stock in the BH postcode area. For this reason the researcher felt that a response rate of almost 50% could not be guaranteed in the main survey. The decision was taken to adhere to the original plan of 1,500 residential addresses for the main survey, even though this could lead to an achieved sample greater than the 400 target.

One of the main observations derived from the pilot study concerned the number of people spoken to at the door who were suspicious of the questionnaire and

reluctant to speak to the researcher. The majority of occupants that accepted the questionnaire appeared to do so with hesitation, and very few of them allowed the researcher time to explain what the research was about. This appeared to be a result of a general distrust of people knocking at the door, rather than anything to do with the researcher's appearance or the nature of the research being undertaken. There was also a reasonably high refusal rate at the door to take part in the research. Most people who refused the questionnaire did so immediately and before an opportunity were given to tell them about the study. Of the 34 addresses where someone was home when the researcher delivered the questionnaire, 12 households declined the questionnaire (35%).

Analysis of the pilot study revealed that the response rate for the collection of questionnaires at addresses where someone was home when the questionnaire was delivered was 32.4%, but the response rate for addresses where no one was home on delivery and the questionnaire was posted through the letterbox was 39.5%. Although this does not take into account subsequent questionnaires received by post, it is clear that the response rate was actually higher when no personal contact was made with occupants at the door. The covering letter that accompanied the questionnaire was effective in explaining the research and generating interest and willingness to complete the survey. For this reason, it was decided in the main survey that the researcher would hand deliver each questionnaire by posting it through the letterbox of each identified address in the sample. The researcher would not knock on the door of each household and attempt to explain the questionnaire and the study, as had been the case in the pilot. On collection of the questionnaire in the main survey, the decision was made to ring the bell and attempt to speak to the occupant if they had not left a questionnaire on the doorstep. This method of contact worked well in the pilot and occupants were less suspicious or unwilling to engage when they were already aware of the study having read the initial covering letter. In addition, the time taken for delivery of the questionnaires was much quicker when they were posted through the letterbox compared with ringing the bell and then waiting to talk to the occupant. This time saving benefit was another reason for selecting to hand deliver the questionnaires without knocking on occupants' doors, in addition to the higher response rate for this method.

The data from the questionnaires collected from doorsteps and returned in the post were entered into Version 19 of the Statistical Package for Social Sciences (SPSS) software. It was important to check whether the questions were being understood correctly by respondents (Gillham 2000). Analysis of the pilot data showed that all the questions, with the exception of one, had a wide distribution of responses. In question 11, all the respondents answered either 'Strongly Agree' or 'Agree' to the question 'Flying is the fastest way to travel to overseas holiday destinations'. There were no questions that were frequently unanswered or had 'Uncertain' regularly ticked. The routing in the questionnaire worked and was correctly followed by respondents. The instructions accompanying the questions were also followed and respondents ticked only one box in the questions they were supposed to and ticked more than one box in the questions where this was permitted. Two small modifications were made to the questionnaire following analysis of the pilot. In question 3, which asked about the main method of travel to overseas holiday destinations, three respondents wrote 'Cruise ship' in the 'Other' box. As a result, 'Cruise ship' was added as a response option in the questionnaire used in the main survey. In question 20, which asked the highest level of education completed, one respondent wrote on the questionnaire 'School certificate'. As there was not an 'Other' category amongst the response options for this question in the pilot questionnaire, this option was added to the questionnaire for the main survey.

#### **4.4.6 Data collection**

The questionnaires in the main survey were delivered using a drop and collect method refined by the findings of the pilot study. The same covering letter used in the pilot study accompanied the questionnaire. As recommended by Gillham (2000), the cover letter was printed on headed paper, which featured the logo and contact details of the School of Tourism at Bournemouth University. Copies of the questionnaire and covering letter can be found in Appendices 4.7 and 4.8. Using a map of the Bournemouth area, postcode districts geographically close to each other were grouped together for delivery and collection of the questionnaires in order to save time and travel costs. Individual postcodes and the addresses belonging to these postcodes were found using a satellite navigation system and an A-Z street map of the Bournemouth area. The researcher used his own car to deliver and

collect the questionnaires. All of the field research, delivery and collection, was undertaken by the researcher without any assistance from other parties.

Delivery of questionnaires took place during the daytime on Mondays, Tuesdays and Wednesdays. Addresses delivered to were then returned to for collection exactly three days after delivery on Thursdays, Fridays and Saturdays respectively. No delivery or collection was made on Sundays. Sundays were not used as this enabled the delivery and collection approach to have a consistent weekly timetable, and because Sundays were considered to be the day of the week that householders would least like to be disturbed with the delivery or collection of a questionnaire. The first day of delivering the questionnaires was Monday 4<sup>th</sup> October 2010 and the final day of collecting questionnaires from doorsteps was Thursday 28<sup>th</sup> October 2010.

On delivery, a questionnaire was placed directly through the letterbox of each address belonging to each of the postcodes randomly generated. As a result of the discoveries made in the pilot study, the researcher did not knock on the door or ring the bell at the residences visited. For the vast majority of residential addresses this approach worked effectively. In some cases, particularly the postcode districts BH2, BH4 and BH5, the researcher encountered problems gaining access to blocks of flats. Where entry to these buildings was not possible, each individual residence within these buildings was mailed a copy of the covering letter, the questionnaire and a postage paid return envelope. The mail was addressed to 'The Occupier' as although the Royal Mail Postcode Address File provides a full postal address, it does not supply the names of people living at the households. At properties where a dog was loose in the garden, the questionnaire was left in a postbox outside the property if there was one. At properties without an external postbox, the questionnaire was folded and placed in the gate. Three properties were building sites and not currently lived in, so questionnaires were not delivered to these addresses. The researcher was unable to locate one of the residential addresses in the sample. This address appeared in the Royal Mail Postcode Address File but was not found in the actual road when visited. At a number of houses, occupants were outside in the garden. In these situations, the questionnaire and a brief background to the study was explained to the occupant. Six occupants declined the

questionnaire when spoken to in the garden. In total, 1,505 of the residential addresses in the sample of 1,515 were successfully delivered to.

Each residential address was returned to three days after the questionnaire had been delivered. At addresses where the questionnaire had not been left on the doorstep or in the porch, the researcher knocked on the door. If an occupant was home, the researcher reminded the occupant about the questionnaire previously delivered and provided brief details of the study. A reminder letter and postage paid return envelope were left with the occupant (see Appendix 4.9 for a copy of the reminder letter). A number of spare copies of the questionnaire were carried with the researcher in case an occupant informed him that they had mislaid the questionnaire. At properties where the questionnaire had not been left outside and no one was home, a reminder letter and postage paid return envelope were posted through the letterbox. A total of 392 completed questionnaires were collected from the doorstep of properties. In addition, 78 blank questionnaires that had not been completed and 6 partially completed questionnaires were left out for collection. A further 255 completed questionnaires were returned in the post using the postage paid return envelopes. Nineteen blank questionnaires were also returned in the post. The total number of completed and useable questionnaires collected on the doorstep and returned by post was 647.

#### **4.4.7 Data analysis**

The collected and returned questionnaires were manually checked to see that they had been fully completed. Questionnaires that were blank or only partially completed were excluded from analysis. Questionnaires in which a respondent had not completed single questions, either out of choice or as a result of error, were included in the analysis. The data from the questionnaires was entered into Version 19 of SPSS. As recommended by Tabachnick and Fidell (2001), each paper questionnaire was proof read against the SPSS data file after it had been entered. After data entry of all the questionnaires was complete, the data file was again checked thoroughly for any errors when inputting the data. Entries were checked to make sure they were all within the range of permitted values. Where

questions had not been answered by respondents, the responses were marked as missing values (Gillham 2000).

There are three main types of variable: nominal (or categorical), ordinal and interval (Bryman 2008). Nominal variables comprise categories that have no underlying continuum and cannot be ranked in order (Oppenheim 1992). The categories belonging to ordinal variables can be ranked in order, but the distances between the categories are not necessarily equal across the range. Interval variables contain the highest level of measurement out of the three types of variable (Bryman 2008). These are variables where the categories can be ranked and the distance between categories is identical. The majority of variables in the questionnaire were nominal and interval variables. Only question 2, which asked respondents how many overseas holidays they had taken in the last 3 years, contained an interval variable.

The analysis of the data from the questionnaire involves univariate, bivariate and multivariate techniques.

- Univariate analysis can be used on all three types of variable: nominal, ordinal and interval. It is the simplest form of quantitative analysis and is used on single variables. Examples of univariate analysis include descriptive statistics, measures of central tendency and measures of dispersion.
- Bivariate analysis concerns the analysis of two variables at a time and can be used to determine whether the two variables are related. Bivariate analysis can uncover relationships between variables but it is not possible to infer causality in the relationship (Bryman 2008). There are a wide range of bivariate techniques. Bivariate techniques used in this study include chi-square tests, Spearman's rho tests, Mann-Whitney tests and Kruskal-Wallis tests.
- Multivariate analysis explores the connections between three or more variables (Bryman 2008). Multivariate techniques applied to the data in this study include factor analysis and cluster analysis.

The first stage of data analysis involved using descriptive statistics to provide a general description of the data (Gillham 2000; Sarantakos 2005). Frequency tables and, where appropriate, diagrams were generated for each of the questions in the survey. As well as being a useful method for checking for any errors in data entry, the descriptive statistics also provided valuable information on the data. Field (2009) recommends looking at the data graphically before running any further analysis. The choice of statistical tests employed in the data analysis was based on reflection on the aim and objectives of the study and a thorough preliminary exploration of the data (Kinnear and Gray 2010). Chapter 6 presents descriptive statistics relating to the demographic characteristics of the sample and the first four objectives of the study.

A number of bivariate techniques were used in the analysis of the data. These techniques involved tests of statistical significance. A test of statistical significance provides an estimate for the confidence that the results of a study, based on a randomly selected sample, are generalisable to the population from which the sample was drawn (Bryman 2008). The level of significance for rejecting the null hypothesis in this study was set at 0.05. This is the level of risk conventionally taken in social research (Sarantakos 2005; Bryman 2008; Field 2009). When the level of significance is set at 0.05, there is a 5% chance that the null hypothesis will be rejected when it should in fact be accepted, thus resulting in a false conclusion that there is a relationship present in the data when there is not actually one in the population from which the sample was taken. Two-tailed tests were selected as directional hypotheses were not made (Field 2009).

The questionnaire contained a number of questions that used Likert scales. Following the recommendations of Bryman (2008) and Sarantakos (2005), when analysing the results of the questions involving Likert scales, the data was treated as ordinal. According to Field (2009), parametric tests should only be used when the assumptions belonging to these tests are met. As one of the assumptions is that data should be at least at the interval level, non-parametric tests were applied. However, in order to aid the description of the results, means and standard deviations were computed for ordinal variables. Oppenheim (1992) suggests that

this ‘bending of the rules’ is a frequent practice amongst researchers. The non-parametric, bivariate techniques used in the data analysis of the survey were:

- **Chi-square test:** Applied to contingency tables and used to establish whether there is a relationship between two variables. Chi-square tests are the most frequently used tests of significance in the social sciences (Sarantakos 2005). The chi-square test of independence is employed when two nominal level variables are being studied. The test compares the observed and expected frequencies in each of the cells in the contingency table and examines the null hypothesis that the variables are independent of each other. Whether a chi-square test achieves statistical significance depends not only on its magnitude but also on the number of degrees of freedom (Bryman 2008).
- **Spearman’s rho:** Designed for use on pairs of ordinal variables, it tests whether the two variables are associated (Kinnear and Gray 2010). Spearman’s rho is a product-moment, non-parametric correlation coefficient which deals with ranks, and measures the strength of linear associations between variables (Sarantakos 2005). The computed value of rho can be either positive or negative and will vary between 0 and 1. The closer the value is to 1, the stronger the relationship between the two variables, the closer it is to 0, the weaker the relationship. When the coefficient is positive it means that variables change in the same direction and when the coefficient is negative the variables move in the opposite direction (Sarantakos 2005).
- **Mann-Whitney U-test:** Used to test for differences between two independent groups with different respondents in each group. The Mann-Whitney U-test serves the same purpose as a t-test, its parametric equivalent (Sarantakos 2005). The Mann-Whitney test ranks scores from lowest to highest. The group with the lowest mean rank is the group with the greater number of lower scores in it, and the group with the highest mean rank is the group with the greater number of high scores within it



(Field 2009). As the sample in this study was quite large, the Monte-Carlo method was used to estimate significance (Field 2009). Effect size estimates for Mann-Whitney tests were calculated manually using z-scores generated in SPSS.

- Kruskal-Wallis H-test: The theory of the Kruskal-Wallis test is similar to that of the Mann-Whitney test in that it is based on ranking the entire pooled set of observations, but it is used to test for differences between three or more independent groups (Rogerson 2001). The Kruskal-Wallis H-test is equivalent to the parametric Simple ANOVA (Sarantakos 2005). As with the Mann-Whitney tests, the Monte-Carlo method was used to estimate significance due to the large sample size. A significant result in the Kruskal-Wallis test indicates that there is a difference between the groups. However, it does not say how many of the groups differ from each other or which groups differ. In order to ascertain where the differences lie, post hoc tests need to be conducted. In the analysis, Mann-Whitney tests were used as post-hoc tests, with a Bonferroni correction made to ensure that Type I errors were not inflated (Field 2009).

The multivariate data analysis techniques used in this study were factor analysis and cluster analysis. Both factor analysis and cluster analysis address the exploration of underlying structure. The underlying structure of a group of variables is implied by the inter-relationships that exist between them (Breakwell et al. 2000). Factor analysis and cluster analysis were conducted on the statements relating to barriers to action in questions 11, 12 and 13 of the questionnaire. A full explanation of how the factor analysis and cluster analysis were undertaken, and the justifications for the decisions made are detailed in Chapter 7. The results and implications of both the factor analysis and cluster analysis are also presented in Chapter 7. Below is a brief overview of the two data reduction techniques:

- Factor analysis: A data reduction technique to extract a smaller number of latent variables from a data set containing a larger number of correlated variables (Rogerson 2001). As Field (2009, p.639) states:

“By reducing a data set from a group of interrelated variables to a smaller set of factors, factor analysis achieves parsimony by explaining the maximum amount of common variance in a correlation matrix using the smallest number of explanatory constructs”.

The data reduction is achieved by identifying variables that correlate highly with a group of other variables, but do not correlate with other variables outside of that group, thus reducing the variables down to their underlying dimensions.

- Cluster analysis: A technique that can be used to identify groups of similar cases in data sets (Giles 2002). The technique differs to factor analysis as it is used to cluster people rather than variables (Breakwell et al. 2000). Approaches to cluster analysis can be categorised into two broad types; hierarchical and non-hierarchical methods. Non-hierarchical cluster analysis begins with an a priori decision on the number of groups to form (Rogerson 2001). As there were no grounds on which to make a decision on the number of groups to select prior to the cluster analysis in this study, the hierarchical approach was selected.

#### **4.4.8 Ethical considerations**

Prior to commencing the pilot study and the main survey, a Bournemouth University Ethics Checklist was completed (see Appendix 4.10). The Bournemouth University Research Ethics Code of Practice was consulted before filling in the Ethics Checklist. The Ethics Checklist covers a wide range of potential ethical issues connected with primary research. Potential issues that were most relevant to this study included:

- Will the research involve prolonged or repetitive testing, or the collection of audio, photographic or video materials?
- Could the research induce psychological stress or anxiety, cause harm or have negative consequences for the participants or researcher (beyond the risks encountered in normal life)?

- Will the study involve discussion of sensitive topics (e.g. sexual activity, drug use, criminal activity)?
- Will it be necessary for the participants to take part in the study without their knowledge / consent at the time?
- Are there problems with the participant's right to remain anonymous?
- Might the research involve participants who may lack the capacity to decide or to give informed consent to their involvement?

A number of steps were taken to make sure that the potential issues raised in these questions did not become a factor for this study. Following feedback from the pre-test of the questionnaire, the attitudes statements relating to the barriers to behavioural change were separated into three questions, rather than two questions, as question 12 was considered to be too long and difficult to complete. In addition, only two statements for each internal and external barrier being tested were included in the questionnaire. Lengthy attitudinal scales common in psychological testing were not used in the questionnaire so that respondents would not be subject to prolonged or repetitive testing.

The research was not considered to cause stress, harm or anxiety beyond those encountered in normal life. In order to minimise any potential stress or anxiety to respondents, the introduction to the research printed on the first page of the questionnaire explained that no specific knowledge of climate change was required to complete the survey. This introduction also informed respondents that there were no right or wrong answers to the questions, and that all opinions and views were important. The covering letter accompanying the questionnaire informed respondents that their address and those neighbouring addresses sharing the same postcode had been randomly selected to take part in this study, thereby eliminating any suspicion as to how or why they might have received the questionnaire.

The study did not involve the discussion of sensitive topics. The questionnaire consistently focused on the research topic and only questions related to holidays and climate change were included. Section F of the questionnaire asked respondents for some socio-demographic information in order to classify the

results statistically. Potentially sensitive questions relating to income, occupation and marital status were not asked. Respondents were asked to give their age from a list of age groups rather than writing their actual age in numbers. Although actual ages would have enabled a greater level of statistical analysis, age groups were selected as the preferred option as it was possible a high number of people may have left this question blank if their actual age in years had been requested.

It is important to obtain the informed consent of respondents taking part in the research. The covering letter that accompanied the questionnaire was designed to provide respondents with important background information to the research that would enable them to decide whether they wished to participate. The covering letter introduced the researcher and the aims of the research. The affiliation of the study to Bournemouth University was made clear. The covering letter also provided an estimate of the likely time required to complete the survey. Respondents were considered to have given their consent to participate in the research if, having read the covering letter, they completed the questionnaire and either left it on their doorstep for collection or returned it in the post.

With regards to anonymity, the covering letter and the introduction printed on the first page of the questionnaire both stated clearly to respondents that the responses and answers they provided in their questionnaire would be kept completely confidential and anonymous. The questionnaire did not ask for the name of the respondent and there was no method put in place for tracking the residential address belonging to each completed questionnaire. Each questionnaire was assigned a number from 1 to 647 based on the order in which it was collected or returned in the post. This number was the only identifier used when entering the data into SPSS.

Steps were taken to limit the possibility of people who might lack the capacity to decide or to give informed consent to their involvement from taking part in the study. Residential addresses such as hospitals, care homes and retirement homes were excluded from the sample, so as to reduce the probability of vulnerable members of society being asked to participate. The covering letter asked for the adult in the household with the next birthday to complete the questionnaire. It was

important that adults, rather than children, completed the questionnaire as there could have been issues generated regarding consent had children been allowed to complete the questionnaire. The lowest age group listed in question 18 was ‘16-24’, further emphasising that children should not be completing the questionnaire.

#### **4.4.9 Health and safety issues**

A Bournemouth University Risk Assessment form was completed prior to the pilot or main survey taking place (see Appendix 4.11). Potential risks were identified in advance and actions were taken to minimise these safety issues. The delivery and collection of questionnaires took place in daylight hours. This not only resulted in a reduced safety risk for the researcher when visiting residential addresses, it also reduced the risk involved in driving to the various postcode locations. The researcher took particular care to concentrate whilst driving and to make sure he was not distracted by thoughts about the delivery or collection process taking place. Plenty of time was allowed each day for delivery and collection so that there was no need to rush whilst driving. The researcher intentionally avoided entering the homes of respondents on delivery or collection of the questionnaires, as this could have created a potential safety risk. The decision was made in advance that gardens where a dog was loose in the grounds would not be entered. Caution was taken when posting the questionnaire through letterboxes where a dog could be seen or heard inside the property. A log of the researcher’s daily movements was left with a friend. The researcher checked-in with this person before leaving home and again on returning home after completing the delivery or collection each day field work took place. The log contained information on the addresses the researcher would be visiting that day and the order in which the postcodes were being travelled to.

#### **4.4.10 Limitations**

There are a number of limitations to the quantitative research undertaken in this study. The covering letter asked for the adult with the next birthday in each household to complete the questionnaire. There is no way of verifying whether this request was adhered to. It is possible that this request may have been ignored

in some instances and that the householder that had the most available spare time or that was most interested in the research may have completed the questionnaire. In instances where access to blocks of flats was not possible, questionnaires were mailed to the individual addresses. This resulted in a different delivery and collection method for these addresses compared with the rest of the sample.

Due to the nature of the research topic there was potential for social desirability bias or prestige bias (Sterngold et al. 1994; Chung and Monroe 2003) in the responses to some of the questions. In particular, Questions 14 and 15 asked respondents to report their actions and future intentions with regards to a number of pro-environmental behaviours around the home and behaviours associated with reducing the climate change impacts of their holidays. Efforts were made to reduce potential social desirability bias by wording questions in a way that low prestige answers were equally possible and by reminding respondents in both the questionnaire and the covering letter that there were no right or wrong answers to the questions (Oppenheim 1992). Although the design of the questionnaire was informed by prior focus group research, the use of closed questions with a limited number of response options may create bias (Oppenheim 1992). The questions designed to examine respondents' awareness of the impacts of holidays on climate change may have inadvertently contributed to or created awareness. By having closed response options to questions 5 and 6, respondents were made aware of potential contributing factors to climate change, even if they did not already possess this awareness. Some of the questions in the questionnaire that related to the number of overseas holidays taken in the last 3 years, the continents visited during this period and the main modes of transport used to travel to destinations relied on the accurate recall and memory of respondents. This could have resulted in errors in the answers provided to these questions by respondents.

Two of the most important criteria for the evaluation of research are validity and reliability. Validity is "the property of a research instrument that measures its relevance, precision and accuracy" (Sarantakos 2005, p.83). As a result of the latent nature of the variables measured in social research, there is an inference involved in the items that are responded to and the constructs being measured making assessment of the validity of a questionnaire a difficult task (Punch 2005).

Internal validity checks are used to ensure that the results of the research have not been affected by the research design in terms of the instruments and procedures utilised (Sarantakos 2005). Internal validity of the questionnaire can be ascertained by checking against empirical evidence. In this study, validation of the questionnaire has been ensured by the use of qualitative focus group research in its design and by comparing the results of the questionnaire with the findings of previous studies identified in the literature review. External validity refers to the extent to which the results of a research study can be generalised beyond the specific research context (Bryman 2008). External validity can be put at risk by the sampling method used (Sarantakos 2005). In this study, a probability sampling technique was used to draw a representative sample. The sampling frame employed was all residential addresses in the Bournemouth (BH) postcode area and was accessed using the Royal Mail Postcode Address File, which is the most up-to-date and complete address database in the UK (Royal Mail 2010). Although the sampling method and sampling frame were robust, a limitation of the study is that the findings of the research are only strictly generalisable to the Bournemouth postcode population. The results are not necessarily representative of the UK population. However, there is no specific reason to believe that the findings of this research are not indicative of UK tourists in general.

Reliability is concerned with the question of whether the same results of a research study can be produced if the study is repeated (Bryman 2008). The purpose of reliability testing is to ensure that the instruments being used are robust and not sensitive to changes in the researcher, the respondent or the research condition (Sarantakos 2005). Bryman (2008) states there are three prominent factors to consider when deciding whether a measure is reliable: stability, internal reliability and inter-observer consistency. In terms of stability, as the questionnaire was designed as a cross-sectional study, it was not possible to use the test-retest method. The test-retest method would have involved administering the questionnaire on one occasion and then re-administering the same questionnaire to the same sample on a further occasion (Punch 2005). Internal reliability applies to multiple-item measures and the most commonly used test is Cronbach's alpha (Bryman 2008). As the questionnaire in this study did not employ multiple-indicator measures and aggregate each respondent's answers in order to form an

overall score, Cronbach's alpha has not been used. Inter-observer consistency refers to situations where considerable subjective judgement is utilised and where more than one observer is involved (Bryman 2008). Inter-observer consistency, therefore, is not a relevant concern for this study.

A number of procedures were undertaken, however, to ensure the reliability of the questionnaire in this study. The questionnaire design incorporated the results of the focus group research in Stage One of data collection and the findings of the literature reviewed. There were also a number of steps in the testing of the questionnaire before the final version was administered. The researcher made amendments to the draft versions of the questionnaire; the questionnaire was then pre-tested with 12 colleagues and friends, with further changes being made, before the formal pilot study was conducted. In addition, this chapter sets out a clear audit trail of how the quantitative research was conducted, thus enabling other researchers to replicate the study.

## **4.5 PRESENTATION OF FINDINGS**

The findings from the qualitative and quantitative research stages of the study are presented in the following three chapters. Chapter 5 contains the findings of the focus group research and presents an initial conceptual framework of the barriers to action in a holidays and climate change context. Chapter 6 is the first of two chapters reporting the findings of the questionnaire survey. This chapter contains data on the demographic characteristics of respondents and presents analysis relating to the first four objectives of this research study. Chapter 7 presents analysis of the barriers to tourists engaging with climate change, and includes the results of factor analysis and cluster analysis conducted on these barriers to action.



# CHAPTER 5: FOCUS GROUP RESULTS

## 5.1 INTRODUCTION

As very little research had been conducted on tourists' awareness and understanding of the relationship between holidays and climate change, exploratory focus group discussions were undertaken as the first stage of data collection. The focus group research provided rich qualitative data and highlighted a number of important factors and variables that were not evident in the limited tourism and climate change literature. This chapter outlines the objectives of the focus group research and discusses the key themes that emerged from the analysis of the data. The contribution of the focus group findings to the conceptual framework of the barriers to behavioural change is discussed. A conceptual framework is then presented based on the barriers to behavioural change identified from the focus group research and the literature review. Much of this chapter has been reported in a journal article (Hares et al. 2010), a copy of which is provided in Appendix 5.1. As this chapter discusses much of the material contained in the journal article, due acknowledgement to this article is hereby given.

## 5.2 FOCUS GROUP OBJECTIVES

The rationale for the exploratory focus group research was:

- To provide insight into the first, second, fifth and sixth objectives of the overall research study –
  1. To identify the levels of awareness amongst tourists of the impacts holidays have on climate change.
  2. To establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists.

5. To analyse the major barriers to tourists adopting less carbon-intensive holiday practices and to determine which barriers are more salient for different groups of the population.
6. To develop a conceptual framework of the most salient barriers to behavioural change.
  - To provide a valuable contextual basis for the development of the questionnaire used in Stage Two of the data collection. The input of the focus group findings into the design of the questionnaire survey was detailed in Chapter 4.

As stated in Chapter 4, there was no mention of holidays, travel or tourism during the recruitment for the focus groups. Participants were told that the topic of the focus group discussions would be climate change and their everyday lives. In addition, the subject of holidays and travel was also not mentioned by the moderator in the introduction at the start of the focus groups, with the intention being to see whether holidays and travel came up spontaneously in the discussions of the participants.

### **5.3 AWARENESS OF THE IMPACTS HOLIDAYS HAVE ON CLIMATE CHANGE**

The focus group discussions were structured around a topic guide, with questions that proceeded from the general to the more specific. The first part of the discussions centred on ascertaining what the participants understood about climate change and how they believed their lifestyles might impact on climate change.

#### **5.3.1 Understanding of climate change**

When asked about their understanding of climate change, the most dominant top of mind response in each of the four groups was for participants to talk about changes in weather patterns that they had personally observed in their lifetime. In

particular, milder winters, with very little snowfall over recent years, and wetter summers were mentioned. When it came to understanding and even believing in climate change there were mixed responses. Many of the participants were unsure about what climate change is, particularly in the Family Group. In other groups, there was a lot of uncertainty about man's contribution to climate change through the production of greenhouse gases.

*“A lot of controversy at the moment ... whether or not global warming is actually caused by human activity or whether there's a counter argument it's actually caused by solar flares and things like that ... there seems to be a lot of completely opposing views”*

Male 4, Professionals Group

A number of participants, particularly in the Retired Group, did not believe that climate change was happening. There was also confusion in all the groups between climate change and holes in the ozone layer.

Another theme to come out of this question was that climate change has become a very 'fashionable' and 'trendy' subject. A number of participants felt that they needed to be informed on climate change in order to gain respect from their friends and peers.

*“I think everyone's knowledge of it isn't based on how interested they are in exactly what's happening, it's based on 'oh this is cool to know about right now' and so if I know about it ... I seem informed and part of things”*

Female 3, Student Group

A number of participants thought it was a good thing that climate change has become fashionable with the general public as it helped to raise awareness. However, this does raise concerns as to whether people are genuinely concerned about global climate change or whether they are showing concern merely as a result of social pressures and expectations.

Consistent with other recent studies (Anable et al. 2006; Randles and Mander 2009; Barr et al. 2011), general awareness of climate change was quite high, with almost all the participants being familiar with the terms ‘climate change’ and ‘greenhouse gases’, however in many cases they did not have a strong understanding of either the causes of climate change or the role that humans, including themselves, are having on the levels of GHGs being released into the atmosphere.

### **5.3.2 Lifestyles and climate change**

As the impacts that individuals, including themselves, may have on climate change were not mentioned in the preceding discussions, participants were asked to make a list of the ways they thought their lifestyles might contribute to climate change. The five most frequently mentioned contributions to climate change were:

1. Car driving
2. Electrical appliances in home
3. Flying
4. Heating home
5. Consumption/disposal of waste

Of particular interest to this research is the fact that flying was the third most common response of the participants. After discussing the items on their lists, participants were then asked to make a list of any things they did to reduce their impact on climate change. The five most frequently mentioned actions were:

1. Recycling
2. Walking
3. Minimising electricity leakage
4. Don't use plastic bags
5. Cycling

It is important to mention that many of the participants said that they did these things as much for financial reasons as environmental reasons. Although flying

was the third most widely acknowledged impact on climate change, not one participant mentioned that they do anything to address this in terms of flying less or using alternative transport modes. Whereas the other contributions, which related to home life rather than holidays, were all to some extent countered: car driving with walking and cycling; electrical appliances and heating with minimising leakage; and consumption/disposal of waste with recycling and not using plastic bags. The Low-Cost High-Cost Model (Diekmann and Preisendörfer 2003) suggests that environmental concern influences behaviour primarily in situations connected with low cost and little inconvenience for individuals. It is, therefore, perhaps unsurprising that the participants in this study report high levels of recycling activity (considered a low-cost and low-inconvenience domain in the Low-Cost High-Cost Model) but do not report any reductions in their air travel (considered a high-cost and high-inconvenience domain in the model).

### **5.3.3 Holidays and climate change**

Following on from these discussions, participants were asked to consider in what ways their holidays might impact on climate change. Travel to and from their destination was identified as having the biggest impact. Flying was referred to in particular, partly because most of the participants had already identified flights as a significant contributor to climate change, and also because that was the method of transport they most frequently used for holidays.

*“I guess in terms of climate change, the travel is the only thing I can think of”*

Female 6, Professionals Group

*“It’s the flight isn’t it ... I think that’s quite a big issue”*

Female 3, Family Group

There tended to be long pauses after flights had been discussed as participants seemed to struggle to identify other impacts that holidays might have on climate change. After a little prompting, energy and resource wastage at hotels and resorts was the next most common theme to emerge, with a number of participants

identifying their own behaviour as contributing. The following quote refers to a winter ski holiday taken a few months earlier.

*“We leave the heating on twenty four hours a day for five days ... we do it while we’re away because where we go it’s an all-inclusive”*

Female 1, Family Group

Other participants referred to hotels wasting resources through excessive air conditioning and heating, washing bedding and towels every day and leaving lights on in corridors all night. Another theme that emerged was that mass tourism has had a considerable impact on the local environment at many popular destinations.

*“Certain destinations used to be peaceful little villages, and now they get huge amounts of people going over there and ruining what were traditional little villages and creating a lot of rubbish, shops and businesses”*

Male 4, Professionals Group

This confusion between the impacts of tourism on global climate change and on the local environment of holiday destinations was also encountered by Gössling et al. (2006) in their study of tourists’ perceptions of climate change.

The Professionals Group discussed how people are travelling to exotic places and trying exotic fruit and vegetables and then demanding them when they get back home, resulting in the products being imported by air to be sold in British supermarkets. The importation of fruit and vegetables from these far-flung destinations is, as this group argued, directly contributing to climate change through increases in food air miles.

*“There’s more and more exotic fruit and vegetables which are having to be flown because people have experienced it elsewhere and there’s that expectation - I want what I’ve had over there”*

Female 2, Professionals Group

The most common view expressed in the Retired Group was that their holidays do not have any impact on global climate change. They acknowledged that air travel does have an impact on greenhouse gas emissions, but considered the impacts of their own individual actions to be inconsequential and thus a negligible effect on climate change.

## **5.4 CLIMATE CHANGE IMPACTS AND HOLIDAY DECISION-MAKING**

The second part of the discussion examined the extent to which climate change considerations feature in the holiday and travel decision-making processes of the focus group participants.

### **5.4.1 Important factors when planning holidays**

As a task in the focus groups, participants were asked to think about the important things they considered when planning their last overseas holiday. The five most important factors identified were:

1. Price/cost
2. Weather
3. Family and friends
4. Minimal travel time
5. Activities

In all the groups, except the Retired Group, price/cost was the most important factor. Weather was mentioned as the most important factor for the Retired Group, and featured prominently in all four of the group discussions. Family and friends was the third most popular factor and included both visiting friends and relatives and also going on holiday with groups of friends or extended family. Minimising travel time was important for all the groups, particularly the Family Group. Activities, either as the main reason for the holiday, or in terms of the availability

of different things you could do at a destination were also mentioned frequently across the groups.

In total across the four groups, more than thirty different factors were mentioned as important elements considered when planning holidays. However, climate change, or even environmental concerns in general, were not mentioned once. Even though climate change was clearly the main topic of discussion in the focus groups, not one of the participants identified climate change as a factor they consider when making decisions about their holidays. This would suggest that the focus group participants were not providing socially desirable responses (Sterngold et al. 1994). In a focus group context there is also potential for group bias, however, the consistency of this finding across all four groups suggests group bias did not play a role.

The absence of any mention of climate change in this task questions whether it is conceptually linked to tourism at all. One of the dominant psychological models used in the environment and behaviour field is that of the Theory of Planned Behavior (Ajzen 1991). In this model, attitudes need to be specific to the behaviour in question to bring about affect. These findings imply that climate change is not in the attitudinal set of tourism decisions for many people, and questions studies that suggest people are prepared to modify their flying behaviour in response to climate change. Earlier in the focus group discussions air travel was widely identified as a major contributor to climate change, yet none of the participants said that it was a factor they considered when planning their holidays. This would suggest that there is an awareness-attitude gap, as opposed to the more widely reported attitude-behaviour gap, in a holidays and climate change context. Participants in this study were either failing to make the association between flying and impacts on climate change when planning their holidays or they were finding ways to suppress or dismiss their knowledge of the relationship.

#### **5.4.2 Climate change as a factor**

As climate change was not mentioned in the previous discussion, each group was specifically asked whether climate change considerations featured in their thoughts



and decisions when they planned their holidays. All but two of the participants said that they did not think about climate change at all. As the following quotes illustrate, climate change does not feature in the vast majority of participants' thoughts, even though flying had been widely acknowledged as contributing to climate change earlier in the focus groups.

*"I might mention it or I might think about it or joke about it, but really when it comes down to it if I am doing things that are good for the environment like not flying too often its primarily because of the cost basically ... I could dress it up as being about climate change but it's the fact that I can't afford flights that are particularly damaging to the environment rather than anything else"*

Male 2, Student Group

*"I don't think about it at all ... to be honest I never care"*

Male 5, Student Group

*"I think people are just not aware of it, only people who are active in the care of animals and the trees ... to be honest it doesn't enter my thoughts at all"*

Female 2, Family Group

*"I don't find that important for a holiday ... I think with the flights they've made them so cheap now that would just override any climate change things"*

Male 1, Family Group

*"I have never ever considered climate change with regard to a holiday"*

Male 6, Retired Group

Participants were honest and open about the fact that they do not think about climate change when planning their holidays. They did not display any signs of a social compulsion to say that they felt guilty for not thinking about climate change or for not changing their holiday behaviour. Some of the participants even

admitted that they do not care about the impacts of holidays and flying on climate change (Male 5, Student Group) or that they just do not find this an important consideration when planning their holidays (Male 1, Family Group).

Two participants from different groups, both females in their 20s, said that climate change considerations were in the back of their mind when planning their holidays. Both participants had used carbon offsetting schemes to offset flights, but neither did it on a regular basis. They also stated that climate change considerations did not alter their holiday decisions in any additional way.

*“I feel a bit guilty about all that and sometimes I do those extra payments but I would still go”*

Female 2, Student Group

*“It’s definitely in the back of my mind but it wouldn’t stop me going somewhere”*

Female 3, Professionals Group

Another participant acknowledges considering climate change when planning day trips in the UK but not overseas holidays.

*“It is in the back of my mind, not particularly so much when I take the odd holiday abroad, but it certainly is on day trips. I feel by using my car I am actually contributing to global warming”*

Male 1, Professionals Group

A number of younger participants in both the Student and Professionals Groups expressed a view that climate change was actually making them travel more. There was a belief that they should travel as much as possible now, while flights are relatively cheap, and before travel is possibly restricted or made more difficult in the future due to climate change concerns.

*“There is more in the media and it does make me think. But it probably makes me think I should travel more now because I might not have the opportunity ... in twenty years you just won't be able to get to some of the places that are really accessible now”*

Female 6, Professionals Group

It is therefore evident that some links are made between tourism and climate change but there is much confusion and little impact on behaviour. The data could be seen as suggesting an information deficit. From this, traditional communication models would indicate scope for awareness raising to bring about behavioural changes. However, such an approach is questioned by Randles and Mander (2009) who argue that information campaigns alone are unlikely to bring about change due to the social embeddedness of practice. Randles and Mander (2009) are supported by the focus group results. The participants already possessed some awareness and understanding of tourism and climate change, however this awareness was dissociated from the tourism context when making their holiday and travel decisions. As discussed earlier in Section 5.4.1, there appears to be an awareness-attitude gap prevalent with regards climate change and holidays. Whilst participants' knowledge of the impacts holidays have on climate change was not detailed, there was a common understanding that flying contributes significantly to climate change, which did not translate through into the holiday planning processes. The following section develops this aspect further through an exploration of the barriers to behavioural change.

## **5.5 BARRIERS TO CHANGING HOLIDAY PRACTICES**

The final part of the focus groups revolved around a number of questions aimed at generating discussion on potential ways that holiday and travel behaviour might change in favour of less carbon-intensive tourism practices. Participants were not asked specifically to identify any barriers or obstacles preventing them from adjusting their holiday behaviour. The barriers identified in this analysis were derived from the responses and discussions emanating from questions and

discussions relating to alternative modes of transport, carbon offsetting schemes, potential future travel restrictions and responsible tourism.

### **5.5.1 Preference for air travel over other transport modes**

Strong preferences for air travel over alternative travel modes were expressed in all four groups. Flying was considered the only viable option for most holiday destinations and illustrates the extent to which participants were ‘locked-in’ to flying (Randles and Mander 2009). Trains were dismissed as being too slow and too expensive. France was identified as one of the few overseas holiday destinations that could be reached by train or ferry. In discussions about other holiday destinations, participants said they would not consider any other modes of transport other than flying.

*“I did manage to take a train on my previous holiday because that was Paris. So I presume that I saved a little bit compared to flying but in general, like everybody says, it’s difficult to avoid flying when you want to go on holiday”*

Male 3, Student Group

*“It’s a problem being on an island here, the quickest way to get somewhere is to fly basically”*

Male 1, Student Group

*“It’s cheaper to fly than it is to drive or take the train ... and so much quicker”*

Female 1, Family Group

Even for holidays within the UK, a number of participants said that they prefer to fly, rather than drive or take the train, expressing a view that trains cannot compete with planes in terms of price or travel time. This criticism of alternative modes reflects the representation that public transport is poor and needs improving in the UK (Dickinson et al. 2009), as the following quote illustrates.

*“If there was some investment in the infrastructure of the travel routes, for example in Japan you get on these bullet trains that run on time and obviously they’re carrying a lot more people for the fuel that they use but in England especially there is no investment in that kind of thing, so I don’t think we look far enough to the future in this country, it’s all very short term ... if the public transport system had a better infrastructure then we might all jump on a speed train to Edinburgh as opposed to sitting on a plane or driving”*

Male 3, Professionals Group

The dismissal of alternative transport modes can be conceived as either a structural barrier, in the sense that flying is perhaps the only realistic option to reach long-haul holiday destinations, or a perceived behavioural control barrier (Ajzen 1991) in that an individual perceives flying as the only option open to them and therefore precludes all other transport options. The extent to which this is a structural or perceived barrier will depend to a great extent on the distance to the destination. This can also be interpreted in a social practices perspective as an interaction with the resources available where much international tourism is institutionally structured around flying. To increase the availability of different transport modes, tourists could choose holiday destinations closer to home. However, the focus group participants in this research, as in Becken (2007), were resistant to changing their holiday plans for climate change reasons (see Section 5.5.3).

### **5.5.2 Habitual flying practices**

Many participants also seemed to have an affinity with low-cost airlines. There was a widespread view that they have opened up travel to the masses, making overseas holidays accessible and affordable for many. This perception is supported by Nilsson (2009, p126), who states that “To passengers, low-cost carriers have reduced fares and improved opportunities to travel”. Almost all the participants in the Student, Family and Professionals Groups claimed that the advent of low-cost airlines had enabled them to take more overseas holidays. Similar positive views of low-cost air travel were also exhibited by the participants in a study by Shaw and Thomas (2006). Contrarily, a later study by Cohen et al.

(2011) found that some of the tourists in their research held negative valuations of frequent holiday air travel, which they associated with the use of low-cost airlines. The quotes below, however, reflect the positive attitudes that participants in this study held towards low-cost airlines.

*“I couldn’t travel without them”*

Male 5, Student Group

*“They give accessibility to people to travel at an affordable cost. I think back years ago when I was a kid, we never thought of going abroad because our family could never afford that, and suddenly everyone can get on a plane and go somewhere”*

Female 5, Family Group

*“I didn’t get on a plane until I was sixteen, and I think in the last twelve years I probably do at least ten journeys on a plane a year now”*

Female 6, Professionals Group

The repeated use of air travel as the preferred transport mode for holiday taking could be considered as habitual behaviour for these participants. Studies show that frequent past behaviour can have a significant effect on future behaviour (Ouellette and Wood 1998). The frequency with which the participants of these three groups are using low-cost air travel may well act as a barrier to the adoption, or even consideration, of alternative transport modes in the future. Jackson (2005) suggests that socially acceptable ways of behaving, such as taking frequent long-haul holidays and weekend breaks by plane, have become ingrained as unconscious habitual behaviours.

In the Retired Group, low-cost airlines were used less compared with the other groups, although the participants still flew regularly. The participants in this group preferred what they considered to be the more sociable flight times and comfort levels of scheduled airlines. As this group was also the most affluent, the cost of holidays was much less of an issue for them. Despite preferring scheduled carriers, participants in this group still had a very favourable view of low-cost airlines, as

they believed low-cost airlines had introduced necessary competition to the marketplace and were largely responsible for bringing down the cost of flying in general.

*“They served a good function in exposing high-cost airlines”*

Male 4, Retired Group

Despite the negative climate change and environmental consequences associated with flying, it appears that airlines are held in a positive light by many of the focus group participants who took part in this research.

### **5.5.3 Reluctance to change holiday behaviour**

Participants placed a high level of importance on holidays. There was a strong reluctance across all the groups to consider changing their tourism behaviour. When the possibility of future quotas limiting the number of flights individuals could take in a year was discussed, there was universal disapproval. Not one participant thought that an enforced restriction on flights for climate change reasons was acceptable. The loss of freedom of choice was identified as a reason why governments should not restrict their ability to fly.

*“I’d feel pretty restricted about personal freedom and things like that, and I’m quite sure there are plenty of other ways for a government to do more about climate change”*

Female 2, Student Group

*“Whatever happened to freedom of the individual, and freedom of choice, and all the things that we’re supposed to hold dear?”*

Male 8, Retired Group

In her study of the awareness of aviation’s impact on climate change amongst international tourists to New Zealand, Becken (2007) also found that the value of freedom to travel is firmly established in the minds of many tourists and that restricting this travel is considered unacceptable.

The possibility of higher taxes on flights to reflect environmental costs was also met with disapproval in this focus group research. Higher taxes on flights for climate change reasons were viewed slightly more favourably than quotas, especially by those participants who thought they would be able to afford them and hence could continue their travel behaviour. Similar findings were reported by Randles and Mander (2009) and Barr et al. (2010). One participant in the Professionals Group mentioned that an increase in taxes might result in people taking fewer holidays of a longer duration. This idea was scorned upon by the rest of the group who still considered this to be an infringement on their personal freedom.

As had happened earlier in the discussions, a number of times participants in the different focus groups gave spontaneous justifications for their travel behaviour. Consistent with the later findings of Cohen and Higham (2011), the cultural and social benefits of travel, to individuals and society, were put forward as a reason to continue with current holiday behaviour. As were the economic benefits tourism brings to poorer countries.

*“I think that travel’s important for people to understand each other’s culture ... so many social reasons why we need to travel and experience different parts of the world”*

Female 3, Student Group

*“We’re planning on going to Thailand, to places that were affected by the tsunami on Boxing Day, and you know the tourism industry is something that will help re-build ... in some places where there was poverty tourism brings wealth”*

Male 3, Professionals Group

In the Student, Family and Professionals Groups the discussion moved on to conversations about ‘dream’ holidays and how it was their financial situations rather than climate change concerns which was preventing them from travelling even more. These discussions reflect the discourse of aspirational lifestyles associated with flying (Thurlow and Jaworski 2006).



*“If I could fly to Kenya I would and it would be great. I probably wouldn’t really take a moment to think about climate change, I’d be like yeah I’m going to Kenya!”*

Female 3, Student Group

*“I’m sure that I wouldn’t think of climate change if I got the chance to go to Australia. I would not think on no better not ... I would love to go”*

Female 3, Family Group

*“I think there’s no such thing as a holiday of a lifetime anymore. I think everyone’s so well-travelled that people are looking for that new place and I think it’s making places that are fairly remote very attractive, but they haven’t got the infrastructure to suit that, so it’s being impacted purely for our own pleasure. Finding that new place that is untouched by tourism”*

Female 2, Professionals Group

The quotes from Female 3 of the Student Group and Female 3 of the Family Group illustrate the passion that tourism can create. Both participants spoke with excitement as they talked about just the prospect of visiting Kenya and Australia on holiday one day, not actual holidays they had been on or were in the process of planning. This demonstrates the desire and affection that many people have for holidays, and provides further insight into why there is such a strong reluctance to change holiday behaviour for climate change reasons.

#### **5.5.4 Responsibility lies with others**

There was a belief amongst participants that responsibility for climate change lies with others, and is consistent with the findings of Stoll-Kleemann et al. (2001) and Lorenzoni et al. (2007). In all four groups the major contributors to climate change were considered to be governments, businesses and other countries. Very little responsibility was seen to lie with individuals in terms of personal contributions to climate change. In addition, when it came to tackling climate change, responsibility was again seen to belong to collective bodies rather than individuals. Personal responsibility (often referred to as personal norms or moral norms in the

socio-psychological behaviour literature) is considered a key variable in implementing pro-environmental behaviour (Stern et al. 1999). The lack of personal responsibility displayed by the focus group participants is clearly a barrier to adjusting their holiday and travel behaviour in favour of lower carbon options.

The Government featured prominently throughout all four focus groups. There was a common view that the UK Government should practice what they preach. Politicians should lead by example, and they cannot expect the general public to take climate change seriously when they have big cars, take lots of flights and own second homes.

*“When you look at the Government and they say they’re putting taxes on this for greener that and the other, and they’re still using cars and still flying places so they’re not concerned”*

Female 1, Family Group

*“If you look at a government collectively and what they could do to help a country as a whole be more carbon neutral then I think there’s an awful lot more governments could do, in the way they trade, the way they act in terms of MPs and second homes”*

Male 2, Professionals Group

There was also considerable scepticism about how serious the UK Government were about tackling the causes of climate change, and annoyance that so called green taxes were not being used to directly mitigate climate change impacts. Similarly, Barr et al. (2010) discovered scepticism of green tourism taxes amongst the participants in their study. There were doubts expressed in the focus groups as to whether the Government really wants people to fly less because airport capacity is being expanded. Similar issues of trust concerning government intentions in relation to climate change policy were reported by Stoll-Kleemann et al. (2001).

*“It’s a means of raising taxation. I fully appreciate the impact to the environment and everything else but I think there’s an element of how much money can we make out of this on the back of climate change”*

Male 2, Professionals Group

Participants also believed that many companies were falsely marketing green credentials. Big business was widely considered to be more responsible for climate change than consumers. Businesses were not doing their fair share in addressing climate change and were passing on responsibility to consumers. Carbon offsetting schemes were viewed unfavourably because they were deemed to place the emphasis on the general public rather than on the airlines ‘who are actually adding to the problem’.

*“Big companies, they’ve created this society, we’ve had to fit around what they’ve put out. They’ve given us cars, they’ve given us cheap flights, they’ve given us the heating etcetera”*

Male 1, Family Group

### **5.5.5 Sense of powerlessness**

In the Family and Retired Groups in particular, there was a feeling that the actions of one person cannot make a difference. They considered that any efforts or attempts by an individual to reduce their carbon emissions would be insignificant in the overall scheme of things.

*“As an individual we can do nothing, it doesn’t come on the Richter Scale, never ... I mean there’s a thousand million in India and more than one and a half thousand million in China, we don’t make a mark”*

Male 9, Retired Group

*“I think the human brain, to be quite honest, cannot possibly envisage what is really happening in outer space and time. We’re insects in this enormous universe and I think as individuals we’ll have very little effect on what is going to happen in the next thousand years”*

Male 7, Retired Group

These participants were exhibiting a strong external locus of control (Cleveland et al. 2005), whereby they considered that any efforts they made as individuals to reduce their carbon emissions would be insignificant in the global context. Male 9 compares the impacts of an individual with the collective impacts of citizens living in countries with populations in excess of a billion and uses this as an example of how the actions of one person cannot make a difference. Instead of making a comparison with huge populations, Male 7 identifies time as the impenetrable barrier preventing the actions of an individual from having a positive effect on anthropogenic climate change in the long-term. This sense of powerlessness is viewed by Stoll-Kleemann et al. (2001) as a denial mechanism to avoid personal responsibility.

### **5.5.6 Social dilemmas**

Social dilemmas, the conflict between self-interest and the common good, were evident across all four groups. Participants questioned changing their holiday behaviour when other people were not prepared to change theirs, using the lack of action by others to justify inactivity (Anable et al. 2006; Shaw and Thomas 2006; Randles and Mander 2009). These comments referred to the behaviour of other people and the behaviour of other countries. Tackling climate change was seen as a very Western European thing with America, China, India, Eastern Europe and developing countries all being criticised for not doing enough with regards climate change.

*“If we don’t fly somebody else will”*

Male 7, Retired Group

*“That’s the difficulty if it’s just one country seen to do X and Y to make a difference ... there are still a lot of countries who are far behind us and I think it would seem a bit unfair if we have things imposed on us where others won’t”*

Female 6, Professionals Group

*“You’ve only got to drive past a power station in Eastern Europe, or dare I say Spain and Italy, to realise if they’re not going to play why should we”*

Male 3, Retired Group

*“That was aptly put by my wife. She said when they turn the lights off in Las Vegas then she’ll believe it. And as they haven’t done, she doesn’t believe it”*

Male 9, Retired Group

Whilst Male 7 from the Retired Group offered a more general opinion on the actions of others, Male 3 and Male 9 from the Retired Group emphasise their knowledge by giving very specific examples of how they believe other countries are not reacting to the threat of global climate change. Male 3 spoke as if he had first-hand experience of witnessing power stations in Eastern Europe, Spain and Italy. Female 6 from the Professionals Group did not specify the actions of any particular country, but spoke with some authority as if she had knowledge of how climate change is treated in different countries around the world.

## **5.6 DEVELOPMENT OF CONCEPTUAL FRAMEWORK OF THE BARRIERS TO BEHAVIOURAL CHANGE**

The focus group discussions revealed a number of barriers to action preventing tourists from changing their behaviour and engaging more fully with the climate change impacts of holidays. When relating the barriers found in the focus groups to the barriers identified in the literature, a number of commonalities are clear. Whilst the focus group research highlighted a number of barriers specific to

holidays and air travel, which provide valuable knowledge to the tourism and climate change context, these can be viewed as similar to some of the more general barriers to climate change engagement from the literature. ‘Preference for air travel over other transport modes’ encompasses the two external barriers ‘Situational factors’ and ‘Instrumental factors’ found in the literature. In Section 5.5.1, participants argued that flying is the only realistic travel option for many overseas holiday destinations, whilst also stating that alternative transport modes are not competitive with flying in terms of price and travel time. The ‘Habitual flying practices’ barrier identified in the focus groups is similar to the more general barrier of ‘Habits and past behaviour’ reported in the literature. The ‘Reluctance to change holiday behaviour’ barrier is comparable with the ‘Reluctance to change lifestyles/freedom of choice’ barrier in the literature.

In the focus group research, participants identified a number of different bodies that they considered to be more responsible for dealing with the consequences of climate change than themselves. These included the Government and businesses in the tourism industry. Participants were reluctant to accept personal responsibility for tackling climate change. Therefore, the ‘Responsibility lies with others’ barrier from the focus groups can be seen to encompass three separate barriers identified in the literature: ‘Denial of personal responsibility/blaming others’, ‘Lack of political action’ and ‘Lack of action by business and industry’. The focus group research identified a ‘Sense of powerlessness’, whilst ‘Self-efficacy/locus of control’ was a barrier proposed in the literature. ‘Social dilemmas’ as a barrier were present in both the focus groups and the literature.

One of the barriers identified from the literature is ‘Lack of knowledge/uncertainty/scepticism of climate change’. In this respect, the low level of awareness and understanding of tourism’s impact on climate change displayed by many of the participants in the focus groups (discussed in Section 5.3.1) can also be viewed as a form of barrier to behavioural change.

The barriers discovered in the focus groups were important as they helped to identify the constraints that are particularly relevant for holidays and climate change. By combining these barriers with the barriers from the literature, a set of

potential barriers were defined that could then be further tested in the questionnaire in Stage Two of the data collection. Table 5.1 shows the barriers from the focus groups, the barriers from the literature and the merged barriers that were tested in the questionnaire survey.

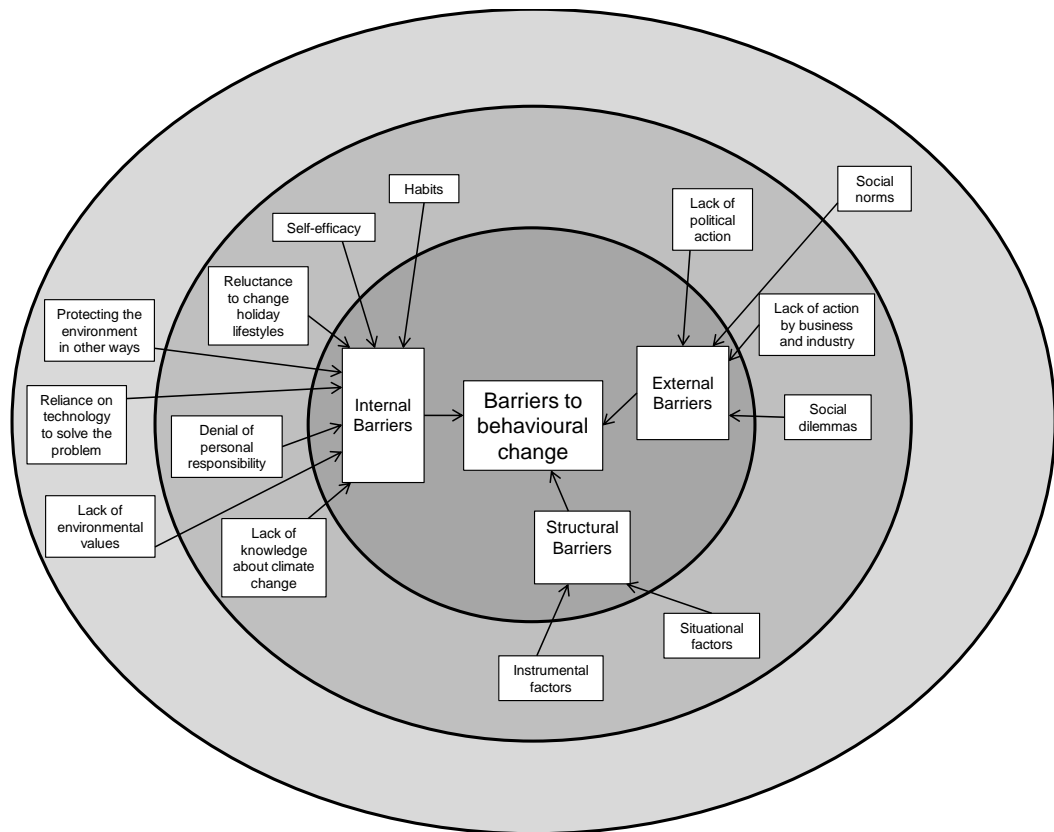
**Table 5.1: Barriers to behavioural change identified from the focus groups and the literature**

<b>Barriers identified from Focus Groups</b>	<b>Barriers identified from Literature</b>	<b>Merged barriers from focus groups and literature</b>
	<b>Internal:</b>	
Lack of detailed knowledge on climate change and holidays	Lack of knowledge/ uncertainty/ scepticism of climate change	Lack of knowledge about climate change
	Lack of environmental values and attitudes	Lack of environmental values
Responsibility lies with others	Denial of personal responsibility/ blaming others	Denial of personal responsibility
Reluctance to change holiday behaviour	Reluctance to change lifestyles /freedom of choice	Reluctance to change holiday lifestyles
Sense of powerlessness	Self-efficacy/ locus of control	Self-efficacy
	Reliance on technology to solve the problem	Reliance on technology to solve the problem
Habitual flying practices	Habits and past behaviour	Habits
	Protecting the environment in other ways	Protecting the environment in other ways
	<b>External:</b>	
Government not committed	Lack of political action	Lack of political action
Business/ industry to blame	Lack of action by business and industry	Lack of action by business and industry
Social dilemmas	Social dilemmas/ free-rider problem	Social dilemmas
	Social norms and expectation to consume	Social norms
Air travel cheaper and faster than other transport modes	Instrumental factors (time, cost, convenience etc.)	Instrumental factors
No alternative to flying for many destinations	Contextual/ situational factors	Situational factors

The merged barriers from Table 5.1 are presented in an initial conceptual framework of the barriers to behavioural change in a climate change and holidays context (Figure 5.1). The conceptual framework in Figure 5.1 is re-evaluated in

Chapter 8, where the findings of the questionnaire survey are incorporated in order to produce a conceptual framework of the most salient barriers to behavioural change based on the qualitative and quantitative research undertaken in this study. Whilst previous studies into the barriers to behavioural change in an environmental and climate change context (see Chapter 3) have tended to divide constraints into internal and external barriers, when it comes to changing holiday behaviour the argument is made that the barriers should be divided into three groups: internal, external and structural barriers. In the conceptual framework (Figure 5.1), ‘Instrumental factors’ and ‘Situational factors’ have been extracted from external barriers and placed in their own group titled structural barriers. The rationale behind this decision is that the focus group research showed not only that ‘Instrumental factors’ and ‘Situational factors’ were both extremely strong barriers acting against behavioural change, they are also different in nature to the other external barriers in terms of their infrastructural elements and very specific to the holidays and climate change context. For many social practices there exist various levels of green provisioning or enabling initiatives that allow the adoption of different behaviours (Spaargaren 2003). These green initiatives may involve higher costs in terms of money, time or convenience for an individual but, nonetheless, enable them to change their behaviour to benefit the environment. When it comes to holidays, and particularly air travel, there are no significant levels of green provisioning for travelling to most medium and long-haul destinations. Tourists wishing to visit these holiday destinations have the option of flying or not travelling at all. As a result, the structural barriers associated with holidays and climate change presents a specific dilemma in this situation. From a theoretical perspective, the Social Practices Model (Spaargaren 2003) highlights the importance of systems of provision (see Chapter 3), placing emphasis on the structural constraints in society, and thus provides further justification for structural barriers to be distinguished as a separate set of barriers.





**Figure 5.1 Conceptual framework of the barriers to behavioural change in a climate change and holidays context**

In Figure 5.1, the inner core of the diagram represents the barriers to behavioural change in a climate change and holidays context, which are made up by the three groups of internal, external and structural constraints. The next layer contains the topic barriers, belonging to these three sets of barriers, which were evident in both the focus group research and the literature. The final layer contains the barriers that were only specifically present in the literature, but were still deemed as potentially significant and, thus, worthy of testing in the questionnaire survey.

## 5.7 SUMMARY

Whilst the participants in these focus groups had a basic understanding of climate change, they generally lacked a more in-depth knowledge. Nonetheless, flying was widely identified as a major cause of climate change. Although air travel was commonly acknowledged as impacting on climate change, participants struggled to identify other aspects of holidays that contribute to climate change. When it comes to planning holidays, climate change does not feature in the thoughts or decisions of the vast majority of participants even though most of them had identified flying as a cause of climate change. The association between holidays and climate change, in the minds of the participants, is either not made when planning holidays or is somehow suppressed.

Whilst previous studies suggest an attitude-behaviour gap in relation to environmental issues this focus group research would suggest that, in the case of holidays and international travel, there is an awareness-attitude gap rather than an attitude-behaviour gap. As stated in the previous paragraph, the participants, whilst not necessarily having an in-depth knowledge, were aware that air travel has a significant detrimental impact on climate change. However, this awareness did not appear to translate into pro-environmental attitudes with regards holidays and climate change. In this respect, attitudes and behaviour were consistent in that neither were pro-environmental. It may be the case that awareness is not leading to correlating attitudes, or it may be that behaviour is having a strong influence over attitudes in this holiday situation. As discussed in Chapter 3, Cognitive Dissonance Theory (Festinger 1957) suggests that where there are inconsistencies between an individual's attitudes and behaviour resulting in internal feelings of distress, the individual will adjust either their attitudes or behaviour to reduce this discrepancy. As the participants were reluctant to change their travel behaviour, it is possible they may have aligned their attitudes towards holidays and climate change to be consistent with their behaviour. This links to the suggestion that air travel has become embedded in contemporary lifestyles (Randles and Mander 2009; Cohen et al. 2011). Therefore, people employ a variety of denial mechanisms (Stoll-Kleeman et al. 2001) to justify continued flights.

The focus group research identified a number of barriers to action preventing behavioural change, and that also contribute to maintaining the awareness-attitude gap amongst tourists. These barriers to action have been compared with the barriers discovered in previous studies to produce a list of the potentially most relevant barriers to this study (see Table 5.1). These barriers were presented graphically in a conceptual framework of the barriers to behavioural change (Figure 5.1). A revised conceptual framework of the most salient barriers to behavioural change, incorporating the findings of the questionnaire survey, is provided in Chapter 8. The following two chapters present the findings of the questionnaire survey conducted in Stage Two of the data collection.

# **CHAPTER 6: AWARENESS OF AND ATTITUDES TOWARDS HOLIDAYS AND CLIMATE CHANGE**

## **6.1 INTRODUCTION**

The results of the questionnaire build on the findings of the focus group research to provide a more comprehensive understanding of tourists' attitudes towards, and engagement with, the climate change impacts of holidays. This chapter is the first of two chapters reporting the findings of the questionnaire survey. The chapter begins with descriptive data on the demographic characteristics of the respondents and their holiday taking behaviour. The analysis then focuses on the first four objectives of the research. Respondents' awareness of the impacts of holidays on climate change and the role that climate change considerations play in holiday decisions are discussed. Attitudes towards changing tourism behaviour for climate change reasons are then considered followed by an examination of the behavioural changes that respondents are currently engaging in.

## **6.2 DEMOGRAPHIC CHARACTERISTICS AND HOLIDAY TAKING BEHAVIOUR OF SAMPLE**

The questionnaire was completed by 647 respondents. The returned questionnaires were filtered on the first question which asked each respondent whether or not they had ever been on an overseas holiday. In total, 621 respondents (96%) answered that they had been on an overseas holiday. As the research is interested in the views and attitudes of tourists, the questionnaires belonging to the 26 respondents (4%) who had never been on an overseas holiday were excluded from the data analysis.

### 6.2.1 Gender and Age

The sample consisted of 44% males and 56% females. According to data from the 2001 Census (ONS 2001a; ONS 2001b), 48% of the resident populations of Bournemouth and Poole are male, whilst 52% are female. This suggests the sample slightly under represents men.

The majority of respondents (89%) were over 35 years old. Only 2% of the sample was made up by 16-24 year olds and 9% made up by 25-34 year olds. The sample under represents these lower age groups compared to the age profile of the resident populations in Bournemouth and Poole (see Table 6.1).

**Table 6.1: Age profile of sample and populations of Bournemouth and Poole**

Age	Sample %	Bournemouth <sup>1</sup> %	Poole <sup>2</sup> %
16-24	2	16	11
25-34	9	17	16
35-44	20	16	18
45-54	21	14	16
55-64	20	12	14
65-74	15	11	13
75+	13	14	13

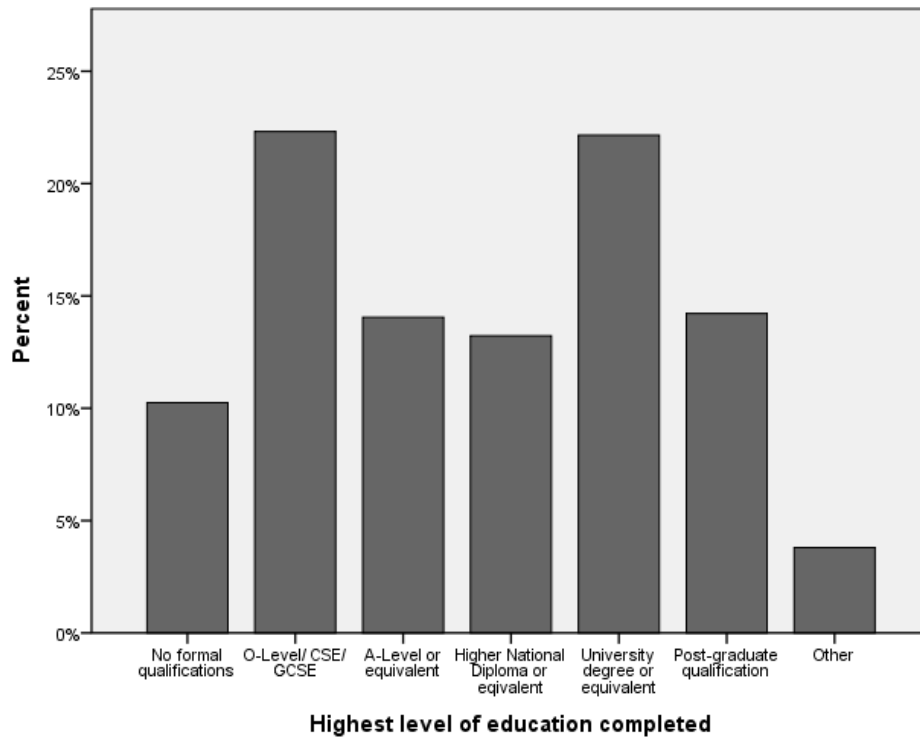
<sup>1</sup> Age range for Bournemouth local authority area from 2001 Census data (ONS 2001c).

<sup>2</sup> Age range for Poole local authority area from 2001 Census data (ONS 2001d).

Approximately a third (32%) of respondents stated that there were children living in their household.

### 6.2.2 Education and Working Status

Half of the respondents in the sample have completed post-school qualifications (see Figure 6.1), with 13% having completed a Higher National Diploma and 22% having completed a university degree. A further 14% of respondents have a post-graduate qualification.

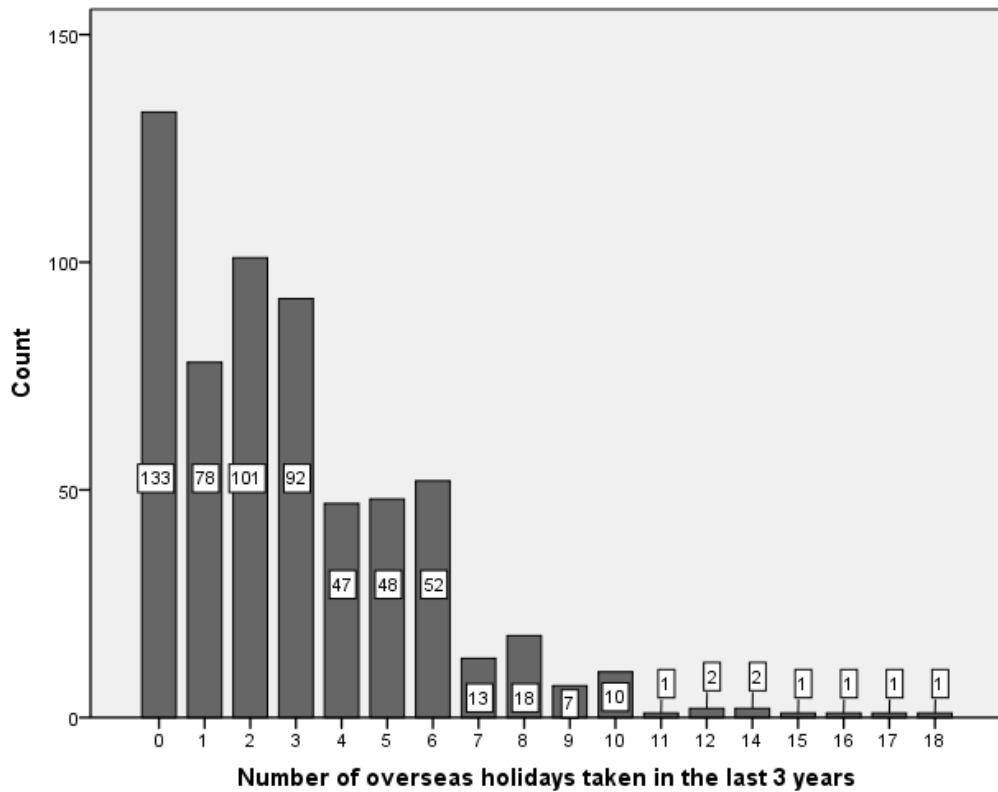


**Figure 6.1: Educational qualifications of respondents**

The majority of respondents were in employment, with 38% working full-time and a further 19% working part-time. A third (34%) of the respondents were retired, whilst 1% were not employed, 2% were studying and 6% were looking after the home full-time. The high number of retired respondents and low number of studying respondents may be a reflection of the fact that the sample is overrepresented by 55+ year olds and underrepresented by 16-24 year olds (see Section 6.2.1).

### **6.2.3 Frequency of overseas holidays**

In the last 3 years, 21% of respondents (133) indicated that they had not taken any overseas holidays in this time period (see Figure 6.2). The mean number of holidays taken in the last 3 years by all respondents is 3.00. When those respondents that have not taken any overseas holidays in the last 3 years are excluded, the mean number of overseas holidays taken in this period increases to 3.84.



**Figure 6.2: Number of overseas holidays taken by each respondent in the last 3 years**

#### **6.2.4 Continents visited on overseas holidays**

The mix between long-haul and short-haul holidays is relevant to this research as there are fewer alternatives to air travel for inter-continental holidays compared with European holidays. Table 6.2 is based on the 488 respondents that had taken at least one overseas holiday in the past 3 years. Europe is the most widely visited holiday destination, with 91% of these respondents having taken an overseas holiday there in the last 3 years. North America is the second most visited continent by respondents in the last 3 years.

**Table 6.2: Continents visited on overseas holidays in the last 3 years**

	<b>N</b>	<b>%</b>
Europe	441	91.1
North America	114	23.6
Asia	68	14.0
Africa	62	12.8
Australasia	37	7.6
South America	35	7.2
Antarctica	3	0.6

### **6.2.5 Transport used to travel to holiday destination**

Air travel is the most widely used method of transport (Table 6.3). When respondents that have not taken an overseas holiday in the last 3 years are included, the proportion of total respondents that have travelled by plane on an overseas holiday in the last 3 years is 72%.

**Table 6.3: Modes of transport used as main method of travel to overseas holiday destinations in the last 3 years**

<b>Transport mode</b>	<b>Main method of travel N</b>	<b>Main method of travel %</b>
Plane	448	91.8
Car	168	34.4
Ferry	113	23.2
Train	66	13.5
Cruise ship	64	13.1
Coach	59	12.1
Other	4	0.8

\*Based on 488 respondents who have taken at least one overseas holiday in the last three years.

## **6.3 AWARENESS OF THE IMPACTS OF HOLIDAYS ON CLIMATE CHANGE**

In order to ascertain an understanding of respondents' awareness of the contribution of tourism to climate change (objective one of the research), two questions were included in the questionnaire that asked respondents to give their opinion on how large or small they considered various factors to be in contributing



to climate change. The first question contained a diverse list of factors, whilst the second contained a number of factors associated with holidays.

‘Flying/air travel’ was considered by more respondents to have a large or very large contribution to climate change than any of the other factors listed (see Table 6.4). Two thirds of respondents (66%) considered the contribution of ‘flying/air travel’ to climate change to be large or very large. These results suggest that there is a high level of general awareness that air travel contributes to climate change. It is interesting that ‘Flying/air travel’ was considered to have a very large contribution to climate change by more respondents than any of the other factors listed in Table 6.4, even though statistically aviation only accounts for between 3.5% (Penner et al. 1999) and 4.6% (Gössling and Peeters 2007) of global GHG emissions. This percentage is much lower than the overall global GHG emissions from heating homes and car transport (although, per kilometre travelled, the contribution of GHG emissions from aviation is higher than car transport).

**Table 6.4: Views on the size of the contribution of various factors to climate change**

<b>Contribution to climate change</b>	<b>N</b>	<b>Very Large %</b>	<b>Large %</b>	<b>Medium %</b>	<b>Small %</b>	<b>Very Small %</b>	<b>Uncertain %</b>	<b>Mean</b>
Flying/air travel	599	33.4	32.7	19.5	8.3	3.2	2.8	2.13
Food imported to the UK from overseas countries	602	17.1	36.0	25.9	10.3	4.2	6.5	2.45
Driving a car	597	15.2	36.2	30.8	11.4	3.9	2.5	2.51
Packaging on products	599	13.7	28.7	29.5	14.9	8.0	5.2	2.73
Going on holidays overseas	600	11.2	27.7	34.5	15.7	6.8	4.2	2.78
Heating homes	604	8.1	28.8	35.6	16.9	7.3	3.3	2.86
Use of electrical products in home	602	5.0	17.3	34.4	27.7	12.0	3.7	3.25
Using public transport	599	3.7	15.4	36.1	30.4	10.9	3.7	3.31
Using aerosol cans	590	5.9	16.4	27.3	25.3	17.5	7.6	3.34

\*The lower the mean, the larger the contribution to climate change according to the views of respondents.

\*\*The means exclude ‘Uncertain’ values.

Table 6.5 shows respondents’ views on how large or small they consider a number of holiday related factors to be in contributing to climate change. Once again, ‘Air

travel/flying to the destination’ is considered to be the factor making the largest contribution to climate change, with 66% of respondents stating that they believe the contribution to be large or very large. This is the same percentage figure as reported in Table 6.4 and shows a consistency in views across questions 5 and 6 of the questionnaire. ‘Air conditioning used in tourist accommodation’ and ‘Car driving to the destination’ were considered the second and third largest contributors to climate change with 39% and 37% of respondents, respectively, stating their contributions to be large or very large.

Although many respondents in the survey considered the contribution of various holiday related factors as having large contributions to climate change, these holidays related factors were listed in the questionnaire and respondents were prompted by these for their opinion. In the focus group research (see Chapter 5), where these factors were not disclosed, participants were unable to identify any additional ways in which holidays contribute to climate change, other than flying, without some prompting.

**Table 6.5: Views on the size of the contribution of various holiday related factors to climate change**

Contribution to climate change	N	Very Large %	Large %	Medium %	Small %	Very Small %	Uncertain %	Mean
Air travel/flying to the destination	603	31.5	34.3	19.4	8.0	3.8	3.0	2.16
Air conditioning used in tourist accommodation	603	8.0	31.3	32.0	17.7	5.1	5.8	2.80
Car driving to the destination	602	5.3	31.4	38.5	16.8	5.1	2.8	2.85
Coach travel to the destination	593	3.2	19.9	38.6	23.9	9.9	4.4	3.18
Water used in tourist accommodation	602	4.7	16.6	30.7	29.6	12.3	6.1	3.30
Train travel to the destination	595	1.5	15.5	38.5	29.6	10.9	4.0	3.34
Heating used in tourist accommodation	598	4.0	15.1	32.1	27.9	14.5	6.4	3.36
Ferry travel to the destination	597	2.0	12.4	35.3	31.0	13.6	5.7	3.44
Eating at restaurants	596	2.0	7.2	30.7	38.1	15.4	6.5	3.62

\*The lower the mean, the larger the contribution to climate change according to the views of respondents.

\*\*The means exclude ‘Uncertain’ values.

The responses in Tables 6.4 and 6.5 suggest that awareness of the impacts of air travel on climate change is quite strong amongst tourists, with two thirds of respondents viewing the contribution of flying as large or very large. This viewpoint is consistent with the numerous studies (see, for example, Gössling and Peeters 2007; UNWTO-UNEP-WMO 2008; Peeters and Dubois 2010) that have concluded that air travel is the international tourism industry's largest contributor to climate change. However, although these results suggest that respondents' general awareness of the contribution of air travel to global climate change is quite high, it is not possible to comment on how deep that understanding is. These results support the finding in the focus groups that there is a high level of general awareness of the impacts flying has on climate change and, in addition to the focus group research, indicate a broad awareness that holidays contribute to climate change. The findings of this questionnaire research are consistent with the findings of Cohen and Higham (2011), who found that most tourists were aware to some degree of the impacts of flying on climate change. However, the findings of this questionnaire and Cohen and Higham (2011) differ with the results of earlier studies (Gössling et al. 2006; Shaw and Thomas 2006; Becken 2007), which found that tourists have a very low level of awareness of the impacts of air travel and holidays on climate change. It is quite possible that awareness of air travel's impact on climate change is increasing over time.

A number of attitude statements were included in the questionnaire which also addressed respondents' understanding of the relationship between holidays and climate change (see Table 6.6).

**Table 6.6: Attitude statements relating to tourists' understanding of holidays and climate change**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
By taking fewer flights a year I will reduce my impact on climate change	605	10.2	47.3	26.4	12.4	3.6	2.52
I believe that my holidays have some affect on climate change	611	5.9	51.2	27.3	11.5	4.1	2.57
I do not know how climate change is linked with holidays	544	8.1	23.5	24.6	36.8	7.0	3.11

More than half (57%) of respondents believe that their holidays have some affect on climate change, whilst 58% agree that they will reduce their impact on climate change by taking fewer flights a year. This suggests that over half of the respondents are aware to some extent that holidays and flights contribute to climate change; a finding which is consistent with the responses in Tables 6.4 and 6.5.

In order to test for a correlation, a Spearman's rho test was conducted on the responses to the statements 'I believe that my holidays have some affect on climate change' and 'By taking fewer flights a year I will reduce my impact on climate change' (see Appendix 6.1). The significance value for the correlation coefficient was  $<.001$ . Therefore, it can be concluded that there is a significant relationship between the responses to the statements. The correlation coefficient is .47, suggesting a positive relationship between the two variables.

Almost a third (32%) of respondents agree or strongly agree with the statement 'I do not know how climate change is linked with holidays'. A quarter of respondents (25%) answered that they were uncertain about how climate change is linked with holidays. Based on the responses to this attitude statement, more than half of the respondents appear unsure about the relationship between climate change and holidays. It can be argued that the responses to these three attitude statements suggest the majority of respondents are aware that holidays and flights contribute to climate change, but this general awareness is not backed up by a clear understanding of the relationship between climate change and tourism.

### **6.3.1 Awareness of climate change and number of overseas holidays taken**

Kruskal-Wallis tests, followed by Mann-Whitney tests, were conducted in order to determine whether there were differences in views regarding the contribution of various holiday related activities to climate change, based on respondents' frequency of overseas holidays. The Kruskal-Wallis test shows whether there is a difference between independent groups, but will not show where the difference(s) lie. Mann-Whitney tests have been used as a post hoc procedure to determine which groups are significantly different in views. A Bonferroni correction has been used to prevent Type I errors from exceeding .05 (Field 2009). The tests were carried out on the two factors contributing to climate change which related to tourism in Table 6.4 and the three holiday related factors that were considered as the largest contributors to climate change by respondents in Table 6.5. Respondents were divided into three groups based on the number of overseas holidays they had taken in the last 3 years: 0 overseas holidays in the last 3 years; between 1 and 3 overseas holidays in the last 3 years; and 4 or more overseas holidays in the last 3 years. The results of the Kruskal-Wallis tests and Mann-Whitney tests are summarised in Table 6.7.

**Table 6.7: Kruskal-Wallis tests and Mann-Whitney tests for holiday related factors contributing to climate change**

Factor contributing to climate change	Outcome of Kruskal-Wallis test	Groups compared	Outcome of Mann-Whitney test	Result
Flying/air travel	Significant, H(2)=13.17, p<.01	0 holidays and 1-3 holidays	Not significant, U=14540.50, z=-1.35, ns, r=-.07	Respondents that have taken 4 or more overseas holidays in the last 3 years viewed the contribution of 'flying/air travel' to climate change to be significantly smaller than people that had taken no overseas holidays or between 1 and 3 overseas holidays in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=9619.00, z=-3.47, p<.0167, r=-.19	
		1-3 holidays and 4+ holidays	Significant, U=20857.00, z=-2.57, p<.0167, r=-.12	
Going on overseas holidays	Significant, H(2)=13.45, p<.01	0 holidays and 1-3 holidays	Test not conducted as mean rank scores similar.	Respondents that have taken 4 or more overseas holidays in the last 3 years viewed the contribution of 'going on overseas holidays' to climate change to be significantly smaller than people that had taken no overseas holidays or between 1 and 3 overseas holidays in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=10052.50, z=-2.39, p<.025, r=-.13	
		1-3 holidays and 4+ holidays	Significant, U=19265.50, z=-3.60, p<.025, r=-.17	
Air travel/flying to the destination	Significant, H(2)=11.67, p<.01	0 holidays and 1-3 holidays	Not significant, U=14557.00, z=-1.63, ns, r=-.08	Respondents that have taken 4 or more overseas holidays in the last 3 years viewed the contribution of 'air travel/flying to the destination' to climate change to be significantly smaller than people that had taken no overseas holidays in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=9642.50, z=-3.30, p<.0167, r=-.18	
		1-3 holidays and 4+ holidays	Not significant, U=21535.00, z=-2.21, ns, r=-.10	
Air conditioning used in tourist accommodation	Not significant, H(2)=2.25, ns	-	-	Views on the contribution of air conditioning were not significantly different between the groups.
Car driving to the destination	Significant, H(2)=10.62, p<.01	0 holidays and 1-3 holidays	Test not conducted as mean rank scores similar.	Respondents that have taken 4 or more overseas holidays in the last 3 years viewed the contribution of 'car driving to the destination' to climate change to be significantly smaller than people that had taken no overseas holidays or between 1 and 3 overseas holidays in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=9846.00, z=-3.09, p<.025, r=-.17	
		1-3 holidays and 4+ holidays	Significant, U=21547.00, z=-2.33, p<.025, r=-.11	

Table 6.7 shows consistency in results. Respondents that had taken 4 or more overseas holidays in the last 3 years viewed each of the factors as having a smaller contribution to climate change than respondents that had taken fewer than 4 overseas holidays. The more frequent overseas holiday takers viewed flying, car driving and going on overseas holidays as having a smaller contribution to climate change than less frequent overseas holiday takers. The less frequent overseas holiday takers appear to have a greater awareness of the contribution of flying and overseas holidays to climate change than the more frequent overseas travellers.

Kruskal-Wallis and Mann-Whitney tests were also conducted on the statements relating to respondents' understanding of the relationship between overseas holidays and climate change presented in Table 6.6, to see if there was a difference in understanding and attitudes based on the frequency with which overseas holidays were taken (see Table 6.8). Respondents were again grouped by the number of overseas holidays they had taken in the last 3 years.

**Table 6.8: Kruskal-Wallis tests and Mann-Whitney tests for statements relating to awareness of holidays and climate change**

Statement	Outcome of Kruskal-Wallis test	Groups compared	Outcome of Mann-Whitney test	Result
I do not know how climate change is linked with holidays	Not significant, H(2)=1.87, ns	-	-	Responses to the statement 'I do not know how climate change is linked with holidays' did not differ significantly between the groups.
I believe that my holidays have some affect on climate change	Significant, H(2)=10.45, p<.01	0 holidays and 1-3 holidays	Significant, U=14297.00, z=-3.07, p<.025, r=-.15	Respondents that had taken between 1 and 3, and 4 or more, overseas holidays in the last 3 years significantly agreed more with the statement 'I believe that my holidays have some affect on climate change' than people that had taken no overseas holidays in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=11108.50, z=-2.67, p<.025, r=-.15	
		1-3 holidays and 4+ holidays	Test not conducted as mean rank scores similar.	
By taking fewer flights a year I will reduce my impact on climate change	Significant, H(2)=8.97, p<.01	0 holidays and 1-3 holidays	Test not conducted as mean rank scores similar.	Respondents that had taken 4 or more overseas holidays in the last 3 years significantly disagreed more with the statement 'By taking fewer flights a year I will reduce my impact on climate change' than people that had taken no overseas holidays, and people that had taken between 1 and 3 overseas holidays, in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=10471.00, z=-2.76, p<.025, r=-.15	
		1-3 holidays and 4+ holidays	Significant, U=23659.50, z=-2.29, p<.025, r=-.11	

Respondents that had taken overseas holidays in the last 3 years agreed more with the statement 'I believe that my holidays have some affect on climate change' than those that had not taken any overseas holidays in this period. Whilst this may suggest a greater awareness of the impacts of tourism on climate change by the more frequent overseas holiday takers, it may also be the case that respondents that had not been on any overseas holidays in the last 3 years were less inclined to agree with this statement as a consequence of them not taking any overseas holidays in this period that would contribute to climate change.



Respondents that had taken 4 or more overseas holidays in the last 3 years disagreed more with the statement ‘By taking fewer flights a year I will reduce my impact on climate change’ compared with respondents that had taken no overseas holidays, and between 1 and 3 overseas holidays, in the last 3 years. The tourists that are taking the most frequent overseas holidays and, thus arguably, contributing more to climate change impacts are less likely to agree that reducing the number of flights they take will have a positive effect. As argued by Stoll-Kleemann et al. (2001), these more frequent tourists are experiencing a form of climate change denial.

## **6.4 CLIMATE CHANGE IMPACTS AND HOLIDAY DECISIONS**

The second objective of this study is to establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists. Respondents were asked in the questionnaire whether they think about the impacts their holidays might have on climate change when they are planning their holidays. Only a very small minority of respondents (8%) answered ‘yes’ they did think about the impacts their holidays might have on climate change when planning their holidays. This result is consistent with the findings of the focus groups undertaken in Stage One of this study. In the focus group research, participants collectively identified more than thirty different factors that they considered as important elements when planning their holidays. Climate change was not mentioned as one of these important factors by any of the focus group participants.

The 52 respondents who answered ‘yes’ they did think about climate change when planning their holidays, were then asked to explain how their thoughts about the impacts of holidays on climate change influenced their holiday planning in a follow-up open-ended question. Forty two respondents answered the follow-up question and their responses have been coded and are presented in Table 6.9. The full transcripts of their responses are in Appendix 6.2.

**Table 6.9: How thoughts about the impacts of holidays on climate change influence holiday planning**

<b>Coded response</b>	<b>N</b>
<b>Changes to air travel behaviour</b>	<b>9</b>
(No longer use air travel for short breaks, only longer holidays)	(4)
(Have stopped flying all together)	(2)
(No longer fly to long-haul destinations)	(2)
(Have reduced the number of flights we take)	(1)
Make conscious effort to use alternative methods of transport to flying when options available	9
Only holiday in the UK	6
Mention awareness of impacts of holidays on climate change but do not specify that this has any effect on holiday taking behaviour	5
Try to minimise carbon footprint whilst on holiday	4
Use public transport once arrived at holiday destination	4
Only go on holiday abroad very occasionally	3
Use carbon offsetting schemes	3
Use holiday companies that take carbon footprint into account	3
Only travel long-haul to visit friends and relatives	2
Other (response does not answer the question)	2
Avoid holiday destinations where ecological balance is at risk	1

\*Responses of those that answered that they do think about climate change impacts when planning their holidays. Some respondents provided more than one answer.

Nine respondents reported that they have changed their air travel behaviour as a result of the impacts on climate change; with 2 respondents having stopped flying all together (this figure increases to 8 if those that now only holiday in the UK are also included). The 9 respondents that stated they have changed their flying behaviour for climate change reasons constitute only 1% of the overall sample. In addition, a further 9 respondents stated that they make a conscious effort to use alternative methods of transport to flying when the options are available (references made to holidays in Europe). Respondents also mentioned a number of other ways in which thoughts about climate change influenced their holiday planning that did not specifically involve changing air travel habits. These include using carbon offsetting schemes, attempting to minimise their carbon footprint once they had arrived at their holiday destination, and using holiday companies that they considered to be aware of carbon footprints.

The very small minority of respondents in the questionnaire survey that stated they think about climate change when decision-making about holidays adds support to the proposition in Chapter 5 that climate change is not conceptually linked to

holidays in the vast majority of tourists' minds. As mentioned earlier, in the focus group research none of the participants mentioned climate change when asked to identify important factors they consider when planning their holidays.

As discussed in the first paragraph of Section 6.4, the vast majority of respondents (92%) stated that they did not think about climate change impacts when planning their holidays. These respondents were asked to state their levels of agreement with a number of statements that were designed to gain a greater understanding of why thoughts on climate change do not feature in their holiday planning and decisions. The responses to these statements are shown in Table 6.10.

**Table 6.10: Respondents' views on holidays and climate change impacts**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Thoughts on climate change impacts just don't enter my mind when planning holidays	545	28.1	52.1	11.4	8.1	0.4	2.01
I do not consider climate change impacts as being important when planning my holidays	546	21.4	50.2	19.8	8.2	0.4	2.16
Thoughts about climate change are in the back of my mind but do not influence my holiday decisions	549	12.9	52.5	14.9	14.2	5.5	2.47
I do not know how climate change is linked with holidays	544	8.1	23.5	24.6	36.8	7.0	3.11
My holidays do not have any impact on climate change	544	6.6	17.3	28.9	39.5	7.7	3.24

\*Responses of those that answered that they do not think about climate change impacts when planning their holidays (N=569).

Of the respondents that said they did not think about climate change when planning their holidays, 80% agreed or strongly agreed with the statement that 'Thoughts on climate change impacts just don't enter my mind when planning holidays'. A similar proportion (72%) agreed or strongly agreed with the statement 'I do not consider climate change impacts as being important when planning my holidays'. These results suggest that for many respondents climate

change impacts is not an issue they think about when planning their holidays and it is not something they view as important to the decision making process.

A Spearman's rho test was conducted on the responses to the statements 'Thoughts on climate change impacts just don't enter my mind when planning holidays' and 'I do not consider climate change impacts as being important when planning my holidays' (see Appendix 6.3). The significance value for the correlation coefficient was  $<.001$ . Therefore, it can be concluded that there is a significant relationship between the responses to the two statements. The correlation coefficient is .68, suggesting a strong positive relationship between the two variables.

Only 44% of respondents disagreed or strongly disagreed with the statement 'I do not know how climate change is linked with holidays', suggesting more than half of respondents are unsure of how holidays contribute to climate change (see Section 6.3). A larger proportion of respondents (47%) disagreed with the statement 'My holidays do not have any impact on climate change' than agreed with it (24%). This suggests that approximately a half of the respondents acknowledge that their holidays do have some form of impact on climate change.

A Spearman's rho test was conducted on the responses to the statements 'I do not know how climate change is linked with holidays' and 'My holidays do not have any impact on climate change' (see Appendix 6.4). The significance value for the correlation coefficient was  $<.001$ , meaning there is a significant relationship between the responses to the two statements. The correlation coefficient is .46, suggesting a positive relationship between the two variables.

Almost a third (65%) of respondents agreed or strongly agreed with the statement 'Thoughts about climate change are in the back of my mind but do not influence my holiday decisions', even though 80% of respondents said that thoughts on climate change impacts do not enter their mind when planning holidays (first statement in Table 6.10). The response to this statement, in conjunction with the response to the previous statement ('My holidays do not have any impact on climate change') suggests a good level of awareness of the link between holidays and climate change in tourists' minds but also a resistance to act on this awareness.

### 6.4.1 Holiday decisions and number of overseas holidays taken

Although only a very small proportion of respondents (8%) said that they think about the impacts their holidays might have on climate change when planning their holidays, a chi-square test was performed to see whether there was a difference between people that have taken no overseas holidays, people that have taken 1-3 overseas holidays, and people that have taken 4 or more overseas holidays, in the last 3 years. The results of the test showed that there was not a significant association between the responses to the question ‘When planning your holidays, do you think about the impacts your holidays might have on climate change?’ and the number of overseas holidays taken in the last 3 years,  $\chi^2=1.17$ , ns.

Kruskal-Wallis and Mann-Whitney tests were conducted on the statements in Table 6.10 to see if there were differences in responses based on the number of overseas holidays taken in the last 3 years. The results of the tests are summarised in Table 6.11.

There were significant differences in responses, based on the number of overseas holidays taken in the last 3 years, for two of the statements. Respondents that had taken 4 or more overseas holidays in the last 3 years were less likely to consider climate change impacts as being important when planning their holidays compared to respondents that had taken fewer than 4 overseas holidays during this period. Respondents that had not taken any overseas holidays in the last 3 years were more likely to believe that their holidays do not have any impact on climate change than respondents that had been on overseas holidays. This is not a surprising result. If a respondent has not taken any overseas holidays in the last few years, then they would not be expected to believe that their holidays are having an impact on climate change. There was not a significant difference in responses between people that had taken between 1 and 3 overseas holidays and 4 or more overseas holidays in the last 3 years.

**Table 6.11: Kruskal-Wallis tests and Mann-Whitney tests for statements relating to thoughts about climate change and holiday decisions**

Statement	Outcome of Kruskal-Wallis test	Groups compared	Outcome of Mann-Whitney test	Result
Thoughts on climate change impacts just don't enter my mind when planning holidays	Not significant, H(2)=4.32, ns	-	-	Levels of agreement were not significantly different between the groups.
I do not consider climate change impacts as being important when planning my holidays	Significant, H(2)=9.63, p<.01	0 holidays and 1-3 holidays	Not significant, U=13103.00, z=-0.70, ns, r=-.04	Respondents that had taken 4 or more overseas holidays in the last 3 years significantly agreed more with the statement 'I do not consider climate change impacts as being important when planning my holidays' than people that had taken no overseas holidays in the last 3 years and people that had taken between 1 and 3 overseas holidays in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=8950.00, z=-2.79, p<.0167, r=-.16	
		1-3 holidays and 4+ holidays	Significant, U=18509.00, z=-2.52, p<.0167, r=-.12	
Thoughts about climate change are in the back of my mind but do not influence my holiday decisions	Not significant, H(2)=0.11, ns	-	-	Levels of agreement were not significantly different between the groups.
I do not know how climate change is linked with holidays	Not significant, H(2)=1.87, ns	-	-	Levels of agreement were not significantly different between the groups.
My holidays do not have any impact on climate change	Significant, H(2)=12.84, p<.01	0 holidays and 1-3 holidays	Significant, U=10734.50, z=-3.46, p<.0167, r=-.19	Respondents that had taken no overseas holidays in the last 3 years significantly agreed more with the statement 'My holidays do not have any impact on climate change' than people that had taken between 1 and 3 overseas holidays in the last 3 years and people that had taken 4 or more overseas holidays in the last 3 years.
		0 holidays and 4+ holidays	Significant, U=8806.50, z=-2.93, p<.0167, r=-.17	
		1-3 holidays and 4+ holidays	Not significant, U=20812.50, z=-0.20, ns, r=-.01	

## 6.5 ATTITUDES TOWARDS CLIMATE CHANGE AND CHANGING HOLIDAY BEHAVIOUR

The third objective of this research is to explore the attitudes of tourists towards climate change and changing holiday behaviour. Respondents were asked to state their levels of agreement or disagreement with a number of statements relating to the mitigation of climate change impacts from holidays. The responses to these statements are presented in Table 6.12.

**Table 6.12: Attitudes towards holidays and climate change impacts**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Tourists should actively seek accommodation providers that have a green/environmental policy	613	7.2	36.9	27.1	22.5	6.4	2.84
Tourists should use a carbon offsetting scheme	601	3.5	27.0	42.9	18.6	8.0	3.01
Tourists should fly less	598	8.4	29.4	20.4	33.8	8.0	3.04
Tourists should take fewer holidays a year of longer duration	611	4.6	26.4	24.4	36.8	7.9	3.17
The Government should increase taxes on airline tickets to reflect the environmental costs of flights	611	8.5	18.3	18.3	33.1	21.8	3.41
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations	614	2.4	8.5	18.6	48.0	22.5	3.80
The Government should introduce quotas limiting the number of flights a tourist can take in a year	613	4.7	11.9	11.9	35.9	35.6	3.86

\*The higher the mean, the more strongly respondents disagree with the statement.

Views on whether tourists should fly less for climate change reasons are mixed, with 38% of respondents agreeing or strongly agreeing that tourists should fly less whilst 42% disagree or strongly disagree. A larger proportion of respondents (45%) disagree that tourists should take fewer holidays a year of longer duration than agree with the statement (31%). Almost half of respondents (43%) are uncertain as to whether tourists should use a carbon offsetting scheme. This may reflect a lack of knowledge and understanding concerning carbon offsetting

schemes amongst the respondents, which was also evident in the focus group research and the literature (Becken 2004; Gössling et al. 2007; Dodds et al. 2008). There was a greater level of agreement (44%) than disagreement (29%) with the statement that tourists should actively seek accommodation providers that have a green/environmental policy.

Although respondents' views on whether tourists should fly less were mixed, there was a more consistent attitude against the Government enforcing restrictions on flights. Almost three quarters of respondents were opposed to the possibility of the Government introducing personal quotas for air travel or limiting their choice of holiday destinations. These results are consistent with the focus group findings, reported in Chapter 5, where there was also very strong resistance to the idea of flight quotas or restrictions. Evidence of tourists' opposition to potential future restrictions on their ability to fly as much as they wish is also present in the literature (Becken 2007; Randles and Mander 2009; Barr et al. 2010).

### **6.5.1 Attitudes towards climate change and number of overseas holidays taken**

Kruskal-Wallis and Mann-Whitney tests were conducted to determine whether there were differences in the responses to the attitude statements in Table 6.12 depending on the number of overseas holidays taken by respondents (Table 6.13).



**Table 6.13: Kruskal-Wallis tests and Mann-Whitney tests for statements relating to attitudes towards climate change and changing holiday behaviour**

Statement	Outcome of Kruskal-Wallis test	Groups where differences compared	Outcome of Mann-Whitney test
Tourists should fly less	Significant, H(2)=52.49, p<.001	0 holidays and 4+ holidays	Significant, U=6886.50, z=-7.01, p<.0167, r=-.39
		1-3 holidays and 4+ holidays	Significant, U=19437.00, z=-4.73, p<.0167, r=-.22
		0 holidays and 1-3 holidays	Significant, U=13067.50, z=-3.46, p<.0167, r=-.18
Tourists should take fewer holidays a year of longer duration	Significant, H(2)=56.07, p<.001	0 holidays and 4+ holidays	Significant, U=7288.00, z=-7.19, p<.0167, r=-.40
		1-3 holidays and 4+ holidays	Significant, U=19433.00, z=-5.32, p<.0167, r=-.25
		0 holidays and 1-3 holidays	Significant, U=14430.50, z=-2.90, p<.0167, r=-.15
Tourists should use a carbon offsetting scheme	Significant, H(2)=12.56, p<.01	0 holidays and 4+ holidays	Significant, U=9866.00, z=-3.43, p<.025, r=-.19
		1-3 holidays and 4+ holidays	Significant, U=23225.00, z=-2.29, p<.025, r=-.11
		0 holidays and 1-3 holidays	Test not conducted as mean rank scores similar.
Tourists should actively seek accommodation providers that have a green/ environmental policy	Significant, H(2)=11.42, p<.01	0 holidays and 4+ holidays	Significant, U=10653.00, z=-3.19, p<.025, r=-.17
		1-3 holidays and 4+ holidays	Significant, U=23514.50, z=-2.50, p<.025, r=-.12
		0 holidays and 1-3 holidays	Test not conducted as mean rank scores similar.
The Government should increase taxes on airline tickets to reflect the environmental costs of flights	Significant, H(2)=38.07, p<.001	0 holidays and 4+ holidays	Significant, U=8293.50, z=-5.90, p<.0167, r=-.32
		1-3 holidays and 4+ holidays	Significant, U=21275.50, z=-4.01, p<.0167, r=-.19
		0 holidays and 1-3 holidays	Significant, U=14063.00, z=-3.05, p<.0167, r=-.15
The Government should introduce quotas limiting the number of flights a tourist can take a year	Significant, H(2)=64.69, p<.001.	0 holidays and 4+ holidays	Significant, U=6937.00, z=-7.86, p<.0167, r=-.43.
		1-3 holidays and 4+ holidays	Significant, U=19944.50, z=-5.11, p<.0167, r=-.24.
		0 holidays and 1-3 holidays	Significant, U=13408.00, z=-3.94, p<.0167, r=-.20.
The Government should introduce restrictions on tourists visiting certain long-haul destinations	Significant, H(2)=36.30, p<.001	0 holidays and 4+ holidays	Significant, U=8544.50, z=-5.97, p<.0167, r=-.33
		1-3 holidays and 4+ holidays	Significant, U=22065.00, z=-3.74, p<.0167, r=-.17
		0 holidays and 1-3 holidays	Significant, U=14477.00, z=-2.91, p<.0167, r=-.15

For the statements ‘Tourists should fly less’, ‘Tourists should take fewer holidays a year of longer duration’, ‘The Government should increase taxes on airline tickets to reflect the environmental costs of flights’, ‘The Government should introduce quotas limiting the number of flights a tourist can take in a year’, and ‘The Government should introduce restrictions on tourists visiting certain long haul holiday destinations’ there were significant differences between all 3 groups. Respondents that had taken 4 or more overseas holidays in the last 3 years significantly disagreed more with each of these statements compared with respondents that had taken no overseas holidays in the last 3 years and respondents that had taken between 1 and 3 overseas holidays in the last 3 years. People that had taken between 1 and 3 overseas holidays in the last 3 years significantly disagreed more with these statements than people that had taken no overseas holidays in the last 3 years.

When it comes to attitudes towards the statements ‘Tourists should use a carbon offsetting scheme’ and ‘Tourists should actively seek accommodation providers that have a green/environmental policy’, respondents that had taken 4 or more overseas holidays in the last 3 years significantly disagreed more with these statements than people that had taken no overseas holidays in the last 3 years and people that had taken between 1 and 3 overseas holidays in the last 3 years. There was not a significant difference in responses between people that had taken no overseas holidays and people that had taken between 1 and 3 overseas holidays in the last 3 years.

The more frequent overseas holiday takers in the sample (respondents that had taken 4 or more overseas holidays in the last 3 years) expressed attitudes that were significantly more negative towards all of the statements in Table 6.13 compared with the less frequent holiday takers. For all but two of the statements, respondents that had taken between 1 and 3 overseas holidays in the last 3 years stated views that were significantly more negative towards the actions to reduce the impacts of holidays on climate change compared with respondents that had not taken any overseas holidays in this period. There appears to be a direct relationship between the number of overseas holidays taken and attitudes towards changing holiday behaviour. Similarly, the results of a cluster analysis performed

by McKercher et al. (2010) found that the group containing the most regular international tourists was also the group that held the most negative attitudes towards changing holiday behaviour for climate change reasons.

### **6.5.2 Attitudes towards climate change and thoughts about climate change in the holiday planning process**

In order to determine whether there was a difference in responses to the statements in Table 6.12 based on whether respondents think about the impacts their holidays might have on climate change when planning their holidays, a series of Mann-Whitney tests were conducted (see Table 6.14).

Respondents that answered ‘No’ to the question ‘When planning your holidays, do you think about the impacts your holidays might have on climate change’ significantly disagreed more with all of the statements in Table 6.14 compared with people that answered ‘Yes’ they do think about the impacts their holidays might have on climate change. Although the proportion of respondents that answered ‘Yes’ to question 7 is very small (8%), these respondents have significantly more positive attitudes towards the actions to reduce the holiday impacts of climate change. It is no surprise, however, that those respondents that think about climate change impacts when planning their holidays also hold more positive attitudes towards reducing the climate change impacts of holidays.

**Table 6.14: Mann-Whitney tests for statements relating to attitudes towards climate change and thoughts about climate change in the holiday planning process**

<b>Statement</b>	<b>Outcome of Mann-Whitney test</b>	<b>Result</b>
Tourists should fly less	Significant, U=6478.50, z=-6.66, p<.001, r=-.27	Respondents that do not think about climate change impacts when planning their holidays significantly disagreed more with the statement.
Tourists should take fewer holidays a year of longer duration	Significant, U=8294.50, z=-5.26, p<.001, r=-.21	Respondents that do not think about climate change impacts when planning their holidays significantly disagreed more with the statement.
Tourists should use a carbon offsetting scheme	Significant, U=8829.00, z=-4.53, p<.001, r=-.19	Respondents that do not think about climate change impacts when planning their holidays significantly disagreed more with the statement.
Tourists should actively seek accommodation providers that have a green/ environmental policy	Significant, U=7207.00, z=-6.22, p<.001, r=-.25	Respondents that do not think about climate change impacts when planning their holidays significantly disagreed more with the statement.
The Government should increase taxes on airline tickets to reflect the environmental costs of flights	Significant, U=8083.50, z=-5.37, p<.001, r=-.22	Respondents that do not think about climate change impacts when planning their holidays significantly disagreed more with the statement.
The Government should introduce quotas limiting the number of flights a tourist can take in a year	Significant, U=9006.00, z=-4.70, p<.001, r=-.19	Respondents that do not think about climate change impacts when planning their holidays significantly disagreed more with the statement.
The Government should introduce restrictions on tourists visiting certain long-haul destinations	Significant, U=10832.50, z=-3.19, p<.01, r=-.13	Respondents that do not think about climate change impacts when planning their holidays significantly disagreed more with the statement.

### **6.5.3 Additional insights into tourists' attitudes towards climate change and changing holiday behaviour**

A number of the statements in questions 11 and 12 of the questionnaire also offer an insight into the attitudes of respondents towards climate change and changing holiday behaviour (see Table 6.15).

**Table 6.15: Statements relating to attitudes towards climate change and holiday behaviour**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying	616	27.1	45.5	15.6	9.7	2.1	2.14
If a few people begin to change their holiday behaviour others will follow	612	3.8	27.8	32.4	29.2	6.9	3.08
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	612	5.1	21.2	28.6	38.9	6.2	3.20
I am prepared to make substantial changes to the way I take holidays for climate change reasons	610	3.0	17.5	39.8	32.6	7.0	3.23

\*The lower the mean, the stronger the level of agreement with the statement.

A fifth of respondents (21%) stated that they are prepared to make substantial changes to the way they take holidays for climate change reasons, whilst 40% indicated that they are not prepared to make substantial changes. Almost a third of respondents (32%) agreed with the statement ‘If a few people begin to change their holiday behaviour others will follow’, whilst 36% disagreed with the statement. A quarter of respondents (26%) agreed that holidays are special and different to their normal everyday life so they do not need to worry about the impacts on climate change. A larger proportion of respondents (45%) disagreed with this statement. Almost three quarters of respondents (73%) agreed with the statement ‘I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying’, whilst only 12% disagreed. Overall, the responses to these statements are quite mixed, although the proportion of respondents expressing more positive attitudes towards changing tourism behaviour is slightly larger. Holding positive attitudes towards changing tourism behaviour is one thing, but actually engaging in behavioural change is something quite different. As the literature suggests, there can often be a dissonance between attitudes and behaviour when it comes to action to reduce climate change impacts (Stoll-

Kleemann et al. 2001; Anable et al. 2006; Lorenzoni et al. 2007). The next section of this chapter looks at behavioural change more closely.

## 6.6 BEHAVIOURAL CHANGES TOURISTS ARE ENGAGING WITH TO REDUCE CLIMATE CHANGE IMPACTS

The fourth objective of the research is to identify the behavioural changes that tourists are engaging with in a holiday context to reduce their individual impacts on climate change. Table 6.16 contains a number of actions that could potentially reduce tourists' impacts on climate change. In the questionnaire, respondents were asked to state whether these actions are something they already do or something they intend to do in the future for climate change reasons.

**Table 6.16: Potential actions to reduce the impacts of holidays on climate change**

Action	N	I already do this %	I intend to do this in the future %	I do not intend to do this %
Purchase locally produced goods whilst on holiday	601	73.9	18.0	8.2
Use public transport whilst on holiday	603	57.4	22.4	20.2
Fly less often	604	45.4	11.6	43.0
Take more short-haul holidays and fewer long-haul holidays	586	37.0	18.8	44.2
Use trains or coach for short-haul holiday trips	596	32.6	29.7	37.8
Take fewer holidays a year of longer duration	585	28.0	15.9	56.1
Use ethical/responsible tour operators	568	20.1	41.4	38.6
Only take holidays in the UK	598	18.9	9.9	71.2
Stop flying all together	603	11.3	5.1	83.6
Actively seek accommodation providers that have a green/environmental policy	579	7.8	43.4	48.9
Use a carbon offsetting scheme	563	6.4	37.7	56.0

The actions that the highest proportions of respondents are already engaging in are purchasing locally produced goods (74%) and using public transport (57%). Both of these actions involve low levels of inconvenience and cost to tourists (Diekmann and Preisendörfer 2003). Reducing the number of flights taken

involves a much higher level of personal cost and inconvenience for tourists, and can be seen as engaging with behavioural change in a more substantial manner. Almost half of respondents (45%) claim to be taking fewer flights for climate change reasons. This figure is much higher than the 5% of people in The British Social Attitudes survey that said they are already reducing their air travel to help tackle climate change (National Centre for Social Research 2012). A further 24% of people in this survey said they would be willing to travel less by plane (National Centre for Social Research 2012), and only 32% said they were not prepared to fly less in the future, compared with 43% in this research.

Approximately a third of respondents claimed that they are already changing their holiday behaviour for climate change reasons by taking more short-haul holidays and fewer long-haul holidays (37%) and by taking fewer holidays a year of longer duration (28%), both of which involve a considerable level of personal cost and inconvenience. However, it is also important to remember that in an earlier question in the questionnaire, the vast majority of respondents (92%) said that they did not think about climate change impacts when planning their holidays. There would appear to be a conflicting set of responses between these two questions. Previous research (see, for example, Sterngold et al. 1994) has suggested that respondents can sometimes overstate their actual behaviour when self-reporting. Similarly, intentions to behave in a certain way in the future can also be overstated. It is also conceivable that having worked their way through a questionnaire that contained questions relating to climate change and their concern, respondents might begin to give more positive answers about their actions and intentions towards the end of the survey. In the following section, the responses to the actions in Table 6.16 are compared with answers to some of the other questions in the questionnaire to investigate whether there is a consistency in responses.

### **6.6.1 A comparison of self-reported behavioural changes and responses to other parts of the questionnaire**

In question 10 of the questionnaire, 38% of respondents agreed or strongly agreed that ‘Tourists should fly less’ (see Table 6.12). In question 14 (the responses to which are shown in Table 6.16), 45% of respondents said that they already ‘fly less

often'; whilst a further 12% said they intend to do this in the future. The level of self-reported behaviour and future intentional behaviour is higher than the level of positive attitudes towards flying less often.

Almost a third of respondents (31%) agreed or strongly agreed that 'Tourists should take fewer holidays a year of longer duration' in question 10. A similar percentage of respondents (28%) said that they already 'Take fewer holidays a year of longer duration' and a further 16% said they intend to do this in the future in question 14. Again, the proportion of respondents claiming to engage in the behaviour or intending to engage in the future is higher than the proportion of respondents that expressed a positive attitude towards the action in question 10.

There was reasonable consistency between positive attitudes towards using a carbon offsetting scheme (see Table 6.12) and self-reported use and intentional future use (Table 6.16). In Table 6.12, 31% of respondents agreed or strongly agreed that 'Tourists should use a carbon offsetting scheme', whereas 6% of respondents said that they already use a carbon offsetting scheme and a further 38% said they intend to do this in the future.

The responses were also reasonably consistent for attitudes and behaviour towards seeking accommodation providers with a green/environmental policy. In Table 6.12, 44% of respondents agreed or strongly agreed that 'Tourists should actively seek accommodation providers that have a green/environmental policy' and, in Table 6.16, 43% of respondents said they intend to 'Actively seek accommodation providers that have a green/environmental policy' in the future. An additional 8% of respondents claimed they already use accommodation providers with a green/environmental policy.

In addition to actions to reduce the climate change impacts of holidays, a question was also asked in the questionnaire to discover what actions respondents were engaging with in their everyday lives to reduce their impacts on climate change. The responses to this question are given in Table 6.17.



**Table 6.17: Potential actions to reduce everyday life impacts on climate change**

Action	N	I already do this %	I intend to do this in the future %	I do not intend to do this %
Recycle household waste	618	99.0	0.5	0.5
Use re-usable bags for your shopping	619	94.2	2.7	3.1
Use low energy light bulbs	613	90.9	3.9	5.2
Make efforts to reduce water consumption in the home	618	87.2	7.9	4.9
Turn the thermostat on the heating to a lower temperature	615	85.7	7.2	7.2
Switch electrical appliances off when not in use rather than leaving them on standby	614	85.0	9.1	5.9
Improve the insulation in your home	615	74.5	18.7	6.8
Reduce the number of car journeys made	603	55.2	16.6	28.2
Buy a car with lower carbon emissions	596	34.7	36.7	28.5
Use public transport more often	603	27.9	24.0	48.1
Support environmental action groups/charities	603	18.7	26.0	55.2
Join a local conservation group	602	5.1	8.8	86.0

As with the actions in Table 6.16, it is possible that respondents may have overstated their behaviour. The responses to the question also provide just a snapshot of respondents' behaviour and although 99% of respondents said that they recycle household waste, it is not possible to ascertain how much of their waste they recycle. In the same way, it is not possible to deduce whether a respondent has just one low energy light bulb, or whether all the light bulbs in their home are low energy ones.

Examining the responses in Tables 6.16 and 6.17, it can be seen that a far higher proportion of respondents report to already engaging in the everyday actions listed compared with the holiday related activities. Similar findings are reported in the literature (Böhler et al. 2006; Bergin-Seers and Mair 2009; Barr et al. 2010), where people are less prepared to engage in pro-environmental behaviours whilst on holiday than they are at home. It is not possible to say why this is the case from looking at these questions. The literature and the focus group research undertaken in Stage One would suggest that possible reasons are that the holiday related actions require a greater compromise of lifestyle than the everyday activities, and that people think less about the environment and climate change when on holiday

compared to their everyday lives at home (Becken 2007; Barr et al. 2010). The actions in Table 6.17 that require more effort and commitment on the part of respondents, such as buying a car with lower carbon emissions or using public transport more often, do have a lower proportion of people stating that they already do this compared with the minor inconvenience activities, such as recycling and turning electrical appliances off when not in use. In addition, a number of the actions in Table 6.17, such as turning off electrical appliances when not in use and turning the thermostat on the heating to a lower temperature, offer personal benefits in terms of cost savings as well as environmental benefits.

In question 4 of the questionnaire, respondents were asked to state the main methods of transport used to travel to their overseas holiday destinations in the last 3 years (see Section 6.2.5). When the respondents that have not taken any overseas holidays in the last 3 years are included in the analysis, the percentage of respondents that have used a plane as the main method of holiday transport in the last 3 years is 72%. In question 14, 45% of respondents said they already fly less often for climate change reasons and 11% said they have stopped flying all together. The responses to question 4 and question 14 do not contradict each other in this instance.

The percentage of respondents that said they have used a train as the main method of holiday transport in the last 3 years is 11% and the percentage of respondents that stated they have used a coach as the main method of holiday transport in the last 3 years is 10%. In question 14, 33% of respondents said they already use trains or coaches for short-haul holiday trips, which is a slightly higher percentage than the figures reported in question 4. However, question 14 did not specify that trains or coaches had to be used as the main method of holiday transportation. In addition, the figures in question 4 exclude those respondents that had not taken any overseas holiday in the last 3 years. It is possible that some of these respondents may have used trains and coaches for domestic holidays in the UK and reported this behaviour in question 14.

When asked how many overseas holidays they had been on in the last 3 years in question 2, 22% of respondents said they had not been on any overseas holidays in

this period. As 19% of respondents stated they only take holidays in the UK in question 14, the responses to the two questions are consistent. Whether these respondents only take holidays in the UK for climate change reasons as the question asks, as opposed to age related reasons, economic reasons or a fear of flying/travel etc., could be open to question. It is quite possible that respondents self-reported their actual behaviour truthfully in question 14, but the reasons for their behaviour may not have been completely for climate change reasons as they state. As mentioned earlier, it is important to remember that only 8% of respondents said that they think about the impacts their holidays might have on climate change when planning their holidays in question 7. This 8% figure is much lower than the percentage of respondents that claim to already fly less often (45%) and take fewer holidays a year of longer duration (28%) for climate change reasons.

### **6.6.2 Behavioural changes and number of overseas holidays taken**

Chi-square tests were conducted on the actions to reduce the impacts of holidays on climate change in question 14, to see whether there was a significant association between each behaviour and the number of overseas holidays taken in the last 3 years. The same groups were used as throughout this chapter: 0 overseas holidays, 1-3 overseas holidays and 4+ overseas holidays, in the last 3 years. The outcomes of the chi-square tests are summarised in Table 6.18. The results column in Table 6.18 is based on the contingency table for each chi-square test (see Appendix 6.5 for the contingency tables).

**Table 6.18: Chi-square tests for tourist behaviour and the number of overseas holidays taken in the last 3 years**

<b>Actions</b>	<b>Outcome of chi-square test</b>	<b>Result</b>
Fly less often	Significant, $\chi^2(4)=144.29$ , $p<.001$	Respondents that had taken 0 holidays were more likely to state they already fly less often. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Stop flying all together	Significant, $\chi^2(4)=167.48$ , $p<.001$	Respondents that had taken 0 holidays were more likely to state they have already stopped flying. Respondents that had taken 1-3 and 4+ holidays were more likely to state they do not intend to stop flying.
Use trains or coaches for short-haul holiday trips	Significant, $\chi^2(4)=19.23$ , $p<.01$	Respondents that had taken 0 holidays were more likely to state they already use trains or coaches. Respondents that had taken 1-3 holidays were more likely to state they intend to use trains or coaches in the future. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Take fewer holidays a year of longer duration	Significant, $\chi^2(4)=68.61$ , $p<.001$	Respondents that had taken 0 and 1-3 holidays were more likely to state they already take fewer holidays a year of longer duration. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Take more short-haul holidays and fewer long-haul holidays	Significant, $\chi^2(4)=40.24$ , $p<.001$	Respondents that had taken 0 and 1-3 holidays were more likely to state they already take more short-haul and fewer long-haul holidays. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this in the future.
Only take holidays in the UK	Significant, $\chi^2(4)=195.51$ , $p<.001$	Respondents that had taken 0 holidays were more likely to state they only take holidays in the UK. Respondents that had taken 1-3 holidays were more likely to state they intend to only holiday in the UK in the future. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Use ethical/responsible tour operators	Significant, $\chi^2(4)=13.36$ , $p<.05$	Respondents that had taken 0 holidays were more likely to state they already use ethical tour operators. Respondents that had taken 1-3 holidays were more likely to state they intend to use ethical tour operators in the future. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Use a carbon offsetting scheme	Significant, $\chi^2(4)=10.29$ , $p<.05$	Respondents that had taken 0 holidays were more likely to state they already use a carbon offsetting scheme. Respondents that had taken 1-3 holidays were more likely to state they intend to use one in the future. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Actively seek accommodation providers that have a green/environmental policy	Significant, $\chi^2(4)=14.43$ , $p<.01$	Respondents that had taken 0 holidays were more likely to state they already actively seek accommodation providers with an environmental policy. Respondents that had taken 1-3 holidays were more likely to state they intend to do this in the future. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Use public transport whilst on holiday	Significant, $\chi^2(4)=16.89$ , $p<.01$	Respondents that had taken 1-3 holidays were more likely to state they already use public transport whilst on holiday. Respondents that had taken 0 holidays were more likely to state they intend to use it in the future. Respondents that had taken 4+ holidays were more likely to state they do not intend to do this.
Purchase locally produced goods whilst on holiday	Not significant	There was not a significant association between the number of overseas holidays taken in the last 3 years and current behaviour and future intention regarding purchasing locally produced goods whilst on holiday.

With the exception of using public transport whilst on holiday, respondents that had taken no overseas holidays in the last 3 years were more likely to state that they already do the actions listed in Table 6.18, compared with respondents that had taken between 1 and 3 overseas holidays and 4 or more overseas holidays in the same period. For most of the actions in Table 6.18, respondents that had taken between 1 and 3 overseas holidays in the last 3 years were more likely to state that they intend to engage in these behaviours in the future. The strongest resistance to behavioural change was exhibited by respondents that had taken 4 or more overseas holidays in the last 3 years. For every action listed in Table 6.18, where there was a significant association, respondents that had taken 4 or more overseas holidays were more likely to state that they did not intend to engage with the behaviour in the future, compared with respondents that had taken no overseas holidays or between 1 and 3 overseas holidays in the last 3 years. This resistance to changing holiday behaviour amongst the most frequent overseas travellers is also evident in the literature (Gössling et al. 2009; McKercher et al. 2010). A clear pattern is exhibited in Table 6.18 whereby respondents that had not been on any overseas holidays in the last 3 years were more likely to state that they are already engaging in actions to reduce the climate change impacts of their holidays, respondents that had taken between 1 and 3 overseas holidays were more likely to state that they intend to engage in these actions in the future, and respondents that had taken 4 or more overseas holidays were more likely to state that they do not intend to engage in these actions.

## **6.7 SUMMARY**

This chapter presented the demographic characteristics of respondents and reported their holiday taking behaviour. The first four objectives of the study were then addressed. There were strong levels of awareness amongst the respondents of the contribution of air travel to climate change, although there was a greater degree of uncertainty expressed about the overall relationship between holidays and climate change. The vast majority of respondents stated that they did not think about the impacts their holidays might have on climate change when planning their holidays.

Even though there were reasonably high levels of awareness of the climate change impacts of air travel, the majority of respondents said thoughts about climate change do not enter their mind when planning their holidays.

Attitudes towards changing holiday behaviour for climate change reasons were mixed amongst the respondents. There was a greater consistency in views when it came to the Government introducing restrictions on tourists' travel. The majority of respondents were strongly against the idea of the Government limiting the number flights they could take in a year (Becken 2007; Cohen et al. 2011). Respondents claimed to be engaging in higher levels of behavioural change for climate change reasons than their responses to questions on awareness of and attitudes towards climate change and holidays in other parts of the questionnaire would suggest. Overall, though, the majority of respondents are not yet engaging in behavioural change to reduce the climate change impacts of their holidays.

A pattern emerged throughout the analysis in this chapter regarding the awareness levels, attitudes and behaviour changes engaged in with respect to respondents that had taken 4 or more overseas holidays in the last 3 years. These more frequent overseas holiday takers exhibited lower levels of awareness of the contribution of holidays to climate change compared with less frequent overseas holiday takers. The more frequent overseas holiday takers were also less likely to consider climate change impacts as being important when planning their holidays. There were significant differences in attitudes towards changing holiday behaviour for climate change reasons amongst the more frequent and less frequent overseas holiday takers. Respondents that had taken 4 or more overseas holidays in the last 3 years expressed stronger negative attitudes towards changing behaviour. This result was mirrored when it came to reporting actual changes in holiday behaviour for climate change reasons. The more frequent overseas holiday takers expressed a significant reluctance and resistance to change their future holiday behaviour, whereas less frequent holiday takers were more likely to state that they already engage in behavioural change or intend to do so in the future. Whilst McKercher et al. (2010) also found that the most frequent international tourists were the most resistant to changing their holiday behaviour; their research revealed that the most frequent travellers had a greater awareness of the impacts of holidays on climate

change than the less frequent holiday takers. This is the opposite of what was discovered in this study, where the more frequent overseas tourists expressed lower levels of awareness compared with less frequent travellers.

The following chapter continues the analysis of results from the questionnaire survey and focuses on the barriers to action that are preventing the adoption of behavioural change in the ways overseas holidays are taken by UK tourists.

# **CHAPTER 7: BARRIERS TO BEHAVIOURAL CHANGE**

## **7.1 INTRODUCTION**

This chapter examines the barriers to action preventing tourists from more fully engaging with climate change in a holiday context. The findings presented in this chapter address the fifth research objective of this study (see Section 1.3.2). Internal barriers are examined first, followed by external barriers and then structural barriers. The results of a factor analysis conducted on the barriers to action are then discussed. This is followed by the results of a cluster analysis. The factor analysis and cluster analysis are then brought together, as the mean factor scores by cluster are examined.

## **7.2 INTERNAL BARRIERS TO ACTION**

As discussed in Chapters 4 and 5, the literature review and the results of the focus group research were used to identify the potentially most important internal barriers to action preventing tourists from changing their holiday behaviour. Eight internal barriers were selected and two statements relating to each of these barriers were included in the questionnaire. Respondents were asked to state their level of agreement or disagreement with these statements so that the saliency of each of the eight internal barriers could be determined. In the questionnaire, the order in which the statements were presented was randomised. The sixteen statements relating to the internal barriers were interchanged with eight statements relating to external barriers. For the purpose of presenting the results, however, the statements are analysed by type of barrier.



### 7.2.1 Lack of knowledge about climate change

The first internal barrier examined is ‘Lack of knowledge about climate change’ (Table 7.1).

**Table 7.1: Lack of knowledge about climate change**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
There is considerable debate amongst scientists as to whether climate change is happening	616	14.8	51.5	24.8	7.3	1.6	2.30
I believe that climate change is a serious threat to the future of our planet	618	20.7	37.9	27.0	10.8	3.6	2.39

Less than one in ten respondents believes that there is a consensus amongst scientists that global climate change is occurring. Although there was much uncertainty amongst respondents with regards their views on climate change scientists, there was a much firmer belief that climate change is providing a serious threat to the future of the earth. More than half of respondents (59%) agreed or strongly agreed with the statement ‘I believe that climate change is a serious threat to the future of our planet’. This suggests that lack of knowledge of climate change is not a substantial barrier for engaging with the climate change agenda for these respondents. The belief that scientists are somewhat divided in their views does not prevent the majority of respondents from still believing that climate change poses a serious problem for the future. These results are consistent with the findings of Becken (2007), Randles and Mander (2009), and Barr et al. (2011) that tourists consider climate change to be a problem and that they believe something significant is happening. At the same time, the findings of the survey also support the conclusion of Anable et al. (2006) that the UK population does not have a sophisticated understanding of climate change issues.

In order to test for a correlation, a Spearman’s rho test was conducted on the two statements in Table 7.1. The significance value for the correlation coefficient was

<.001 (see Appendix 7.1), which means that it can be concluded that there is a significant relationship between the responses to the statements. The correlation coefficient was -.37, suggesting a negative relationship between the two variables.

## 7.2.2 Lack of environmental values

The responses to the two statements investigating ‘Lack of environmental values’ are shown in Table 7.2.

**Table 7.2: Lack of environmental values**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
I try to minimise my carbon footprint	606	5.6	41.1	26.6	22.9	3.8	2.78
I am interested in protecting the environment	614	18.7	69.5	8.8	2.3	0.7	1.97

The first statement in Table 7.2 focuses specifically on climate change as an environmental issue. Almost half of respondents (47%) agree or strongly agree that they try to minimise their carbon footprint. The second statement refers to more general environmental values. The vast majority of respondents (88%) agree or strongly agree with the statement ‘I am interested in protecting the environment’. As almost 90% of respondents declare that they are interested in protecting the environment and almost half state that they try to minimise their carbon footprint, a general lack of environmental values does not appear to be a major barrier to engaging with climate change in a holiday context. Kollmuss and Agyeman (2002) and Anable et al. (2006) argue that pro-environmental values are a necessary pre-cursor for pro-environmental behaviour. However, this does not mean that the existence of pro-environmental values will automatically translate into pro-environmental attitudes and behaviour. The results presented in Chapter 6 illustrate that the more general pro-environmental values displayed in Table 7.2 are not necessarily reflected by respondents in their attitudes and behaviour when it comes to holidays and climate change impacts.

A Spearman's rho test was conducted on the two statements in Table 7.2. The significance value for the correlation coefficient was  $<.001$  (see Appendix 7.2), therefore it can be concluded that there is a significant relationship between the responses to the statements 'I try to minimise my carbon footprint' and 'I am interested in protecting the environment'. The correlation coefficient was .41, suggesting a positive relationship between the two variables.

### 7.2.3 Denial of personal responsibility

The third internal barrier presented is 'Denial of personal responsibility' (Table 7.3).

**Table 7.3: Denial of personal responsibility**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
I believe that my holidays have some affect on climate change	611	5.9	51.2	27.3	11.5	4.1	2.57
Other people's holidays contribute more to climate change than my own	613	9.3	16.8	32.3	34.4	7.2	3.13

A larger proportion of respondents (57%) agreed or strongly agreed that their holidays have some affect on climate change than disagreed or strongly disagreed (16%) with the statement. Just over a quarter of respondents (26%) agreed or strongly agreed with the statement 'Other people's holidays contribute more to climate change than my own'. However, a greater proportion of respondents (42%) disagreed or strongly disagreed with the statement. Although for both statements just under a third of respondents were uncertain, the results show that 'Denial of personal responsibility' is a barrier for only a minority of UK tourists. The respondents in this survey were more accepting of their own personal contributions to climate change from holidays than respondents in previous studies. Becken (2007), Gössling et al. (2009), and Randles and Mander (2009) all found that the majority of tourists questioned were not prepared to accept personal responsibility for contributing to climate change and did not feel accountable for

the subsequent GHG emissions. However, consistent with these previous studies, the majority of respondents in this research considered the contributions of businesses and industry to climate change to be greater than that of individual tourists (see Section 7.3.2).

The results of a Spearman’s rho test conducted on the two statements in Table 7.3 show a significance value for the correlation coefficient  $>.05$  (see Appendix 7.3), therefore it can be concluded that there is not a significant relationship between the responses to the statements ‘I believe that my holidays have some affect on climate change’ and ‘Other people’s holidays contribute more to climate change than my own’.

#### 7.2.4 Reluctance to change holiday lifestyles

Table 7.4 contains the responses to the two statements relating to the fourth potential internal barrier to action.

**Table 7.4: Reluctance to change holiday lifestyles**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
I am prepared to make substantial changes to the way I take holidays for climate change reasons	610	3.0	17.5	39.8	32.6	7.0	3.23
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations	614	2.4	8.5	18.6	48.0	22.5	3.80

The responses to the two statements in Table 7.4 suggest that ‘Reluctance to change holiday lifestyles’ is a substantial barrier. Almost twice as many respondents (40%) stated that they are not prepared to make substantial changes to the way they take holidays as those that agreed that they were prepared to make changes for climate change reasons (21%). Previous studies by Becken (2007), Randles and Mander (2009), and Barr et al. (2010) indicated that many tourists are extremely resistant to changing their flying behaviour and consider the freedom to

travel as an integral part of their lives. More than 70% of respondents disagreed or strongly disagreed that the Government should introduce restrictions on visiting certain long-haul holiday destinations, whereas only 11% thought that the Government should do this. There was strong resistance to the Government enforcing restrictions on respondents' holiday decisions and their freedom of choice. These findings are consistent with Becken (2007) and Randles and Mander (2009) who found that tourists in their studies were also strongly opposed to the idea of potential future quotas limiting air travel. A reluctance to change lifestyles was also identified as a significant barrier to engaging with climate change by Stoll-Kleemann et al. (2001) and Lorenzoni et al. (2007). In Lorenzoni et al.'s (2007) study, participants believed that making changes to their lifestyle to reduce climate change impacts would result in significant personal sacrifices in terms of living standards and social image.

The significance value for the correlation coefficient in the Spearman's rho test was  $<.001$  (see Appendix 7.4), so it can be concluded that there is a significant relationship between the responses to the statements 'I am prepared to make substantial changes to the way I take holidays for climate change reasons' and 'The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations'. The correlation coefficient was .46, suggesting a positive relationship between the two variables.

### **7.2.5 Self-efficacy**

The fifth internal barrier examined is self-efficacy (Table 7.5).

**Table 7.5: Self-efficacy**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Any actions an individual tourist can take will be insignificant on a global problem like climate change	610	14.1	35.1	21.8	25.1	3.9	2.70
By taking fewer flights a year I will reduce my impact on climate change	605	10.2	47.3	26.4	12.4	3.6	2.52

The responses to these two statements might at first appear somewhat contradictory. Half of the respondents (50%) agreed or strongly agreed that any actions an individual tourist takes will be insignificant on climate change, whilst 58% of respondents felt that by taking fewer flights a year they would reduce their impact on climate change. In other words, respondents felt that they have the power to influence their own personal contributions to climate change, but viewed their individual impacts as being negligible overall in contributing to a global problem. In this situation, self-efficacy is a barrier to action as although respondents may feel they have some control over their own individual impacts, they do not see the need to do so as they consider their contribution to climate change as being insignificant or miniscule. Self-efficacy has been identified as a barrier to engaging with climate change and pro-environmental behaviours in previous studies (Blake 1999; Stoll-Kleemann et al. 2001; Kollmuss and Agyeman 2002; Anable et al. 2006). In a holiday context, Shaw and Thomas (2006) discovered a belief amongst study participants that tourists, as individuals, could do very little to reduce the carbon emissions from air travel.

In the Spearman's rho test, the significance value for the correlation coefficient was  $<.001$  (see Appendix 7.5). It can be concluded that there is a significant relationship between the responses to the two statements in Table 7.5. The correlation coefficient was  $-.25$ , suggesting a weak negative relationship between the two variables.

## 7.2.6 Reliance on technology to solve the problem

A reliance on technology to solve the climate change problem is the sixth internal barrier analysed (Table 7.6).

**Table 7.6: Reliance on technology to solve the problem**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Aeroplanes will be invented whose emissions do not contribute to climate change	616	8.0	26.6	49.8	12.5	3.1	2.76
Scientists will find a way to prevent climate change from happening	613	2.3	13.9	50.4	24.8	8.6	3.24

For both of these statements, half of all respondents were uncertain about whether technological developments and innovations would ultimately solve the climate change problem. More than a third of respondents (35%) were confident that aeroplanes will be invented whose emissions do not contribute to climate change. However, a smaller proportion of respondents (16%) believed that scientists will find a way to prevent climate change from happening. In contrast with the findings of Stoll-Kleemann et al. (2001) and Lorenzoni et al. (2007), ‘Reliance on technology to solve the problem’ was not a substantial denial mechanism for the respondents in this research when it comes to engaging with climate change.

The Spearman’s rho test yielded a significance value for the correlation coefficient of  $<.001$ , meaning that there is a significant relationship between the responses to the statements ‘Aeroplanes will be invented whose emissions do not contribute to climate change’ and ‘Scientists will find a way to prevent climate change from happening’ (see Appendix 7.6). The correlation coefficient was .30, suggesting a positive relationship between the two variables.

### 7.2.7 Habits

The seventh internal barrier investigated was habits and the role of past behaviour (Table 7.7).

**Table 7.7: Habits**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
I automatically think of flying when planning the travel part of my holidays	612	19.1	41.7	4.6	29.1	5.6	2.60
I usually explore alternatives to air travel when planning holidays	612	6.4	25.8	13.7	45.3	8.8	3.24

The majority of respondents (61%) stated they automatically think of flying when planning their holidays. Over half of respondents (54%) disagreed or strongly disagreed with the statement 'I usually explore alternatives to air travel when planning holidays'. As Randles and Mander (2009) have previously suggested, flying appears to have become a habit for the majority of tourists. As a result, the automatic assumption of using air travel as the mode of transport is a substantial barrier to tourists reducing their impacts on climate change. This finding supports the view of Kollmuss and Agyeman (2002) and Anable et al. (2006) that habits and past behaviour is a strong impediment to pro-environmental behavioural change.

A Spearman's rho test was conducted on the statements in Table 7.7. The significance value for the correlation coefficient was  $<.001$  (see Appendix 7.7), therefore it can be concluded that there is a significant relationship between the responses to the two statements. The correlation coefficient was  $-.55$ , suggesting a strong negative relationship between the two variables.

### 7.2.8 Protecting the environment in other ways

The eighth, and final, internal barrier analysed is 'Protecting the environment in other ways' (Table 7.8).



**Table 7.8: Protecting the environment in other ways**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	612	5.1	21.2	28.6	38.9	6.2	3.20
If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much	609	3.6	22.5	35.5	35.6	2.8	3.11

There were very similar levels of agreement and disagreement with the two statements shown in Table 7.8. Just over a quarter of respondents (26%) agreed or strongly agreed with both statements 'Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change' and 'If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much'. Although this was not the strongest barrier to action identified in this research, the results support the view of Becken (2007) that some tourists believe climate change mitigation should focus solely on the home environment and not on holidays, and the findings of Randles and Mander (2009), Barr et al. (2010), and Cohen and Higham (2011) that some people justify the climate change impacts of their overseas holidays by demonstrating an engagement in pro-environmental behaviours around the home.

The results of a Spearman's rho test produced a significance value for the correlation coefficient of  $<.001$  (see Appendix 7.8), meaning that there is a significant relationship between the responses to the two statements. The correlation coefficient was .28, suggesting a weak positive relationship between the two variables. As the percentages of respondents agreeing and disagreeing with the two statements in Table 7.8 are so similar, a larger correlation coefficient may have been expected in the Spearman's rho test than the one that was actually calculated.

### **7.2.9 Summary of the internal barriers**

The analysis of the responses to the statements show that the most powerful internal barriers to action are a 'Reluctance to change holiday lifestyles', 'Habits' and 'Self-efficacy'. Many respondents expressed a view that they were not prepared to make changes to the way they take holidays in order to reduce their impacts on climate change. The fact that flying has become a habit for the majority of respondents and they automatically assume that they will use air travel to get to their holiday destination is a major obstacle to overcome in order to reduce the tourism industry's impact on climate change. There was also a feeling that the climate change contributions of an individual tourist were negligible on such a large, global problem. To a slightly lesser extent, a belief that protecting the environment in other ways, particularly in everyday home life, means that the climate change impacts of holidays can be dismissed is also a substantial barrier to action for many of these respondents.

Spearman's rho tests were conducted on each pair of statements relating to the internal barriers. For all but one of the barriers (Denial of personal responsibility), there was a significant relationship between the responses to the two statements. In all seven cases where there was a significant relationship between responses, the direction of that relationship showed that respondents were consistent in their views across the two statements. This helps to confirm that the pair of statements used for each internal barrier was measuring the same thing.

## **7.3 EXTERNAL BARRIERS TO ACTION**

Four potential external barriers to action were identified from the literature review and focus group research. Two statements relating to each identified external barrier were included in the questionnaire. Section 7.3 contains an analysis of the responses to these statements.

### 7.3.1 Lack of political action

The first external barrier examined is ‘Lack of political action’ (Table 7.9).

**Table 7.9: Lack of political action**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
The Government is not doing enough to tackle climate change	616	13.8	36.0	32.5	15.9	1.8	2.56
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights	616	42.9	44.2	6.2	6.2	0.6	1.78

Half (50%) of respondents agreed or strongly agreed that the Government is not doing enough to tackle climate change. When it comes to the actions of MPs (Members of Parliament), rather than the Government, there is an even stronger belief that politicians should be doing more to tackle climate change. As Lorenzoni et al. (2007) also found in their study, a perceived lack of political action is a barrier to engaging with climate change for many respondents in this research. Respondents can justify their decisions not to change their holiday behaviour to reduce their impact on climate change by blaming the Government for a lack of action and failing to set an example. A number of authors, such as Becken (2007), Gössling et al. (2009), and Cohen et al. (2011), have also found that tourists place the responsibility for mitigating the climate change impacts of flights and holidays on governments and other organisations, rather than with individual tourists.

A Spearman’s rho test was conducted and the significance value for the correlation coefficient was  $<.001$  (see Appendix 7.9), so it can be concluded that there is a significant relationship between the responses to the two statements in Table 7.9. The correlation coefficient was  $.20$ , suggesting a weak positive relationship between the two variables.

### 7.3.2 Lack of action by business and industry

‘Lack of action by business and industry’ is the second external barrier (Table 7.10).

**Table 7.10: Lack of action by business and industry**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Businesses in the tourism industry should do more to tackle climate change	615	9.1	49.3	31.7	8.1	1.8	2.44
Airlines rather than passengers should be responsible for paying environmental taxes	616	15.3	46.3	20.9	15.4	2.1	2.43

More than half of respondents (58%) agreed or strongly agreed that businesses in the tourism industry should do more to tackle climate change. The second statement was more specific in questioning whether respondents believed industry or consumers should be responsible for climate change mitigation. Again, more than half of respondents (62%) agreed or strongly agreed that airlines rather than passengers should be responsible for paying environmental taxes. This finding is consistent with previous studies (Becken 2007; Gössling et al. 2009) that discovered a conviction amongst tourists that dealing with the environmental impacts of aviation is the responsibility of airlines rather than individual travellers. A perceived lack of action by business and industry is a barrier for many respondents in this study, with more than half of them apportioning responsibility for tackling climate change to businesses in the tourism industry rather than accepting responsibility themselves.

A Spearman’s rho test yielded a significance value for the correlation coefficient of  $<.001$  (see Appendix 7.10), meaning that there is a significant relationship between the responses to the statements ‘Businesses in the tourism industry should do more to tackle climate change’ and ‘Airlines rather than passengers should be

responsible for paying environmental taxes'. The correlation coefficient was .23, suggesting a weak positive relationship between the two variables.

### 7.3.3 Social dilemmas

The third external barrier examined is 'Social dilemmas' (Table 7.11).

**Table 7.11 Social dilemmas**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
If a few people begin to change their holiday behaviour others will follow	612	3.8	27.8	32.4	29.2	6.9	3.08
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs	617	17.0	48.0	26.3	8.4	0.3	2.27

Respondents were divided almost equally into thirds with regards their levels of agreement with the first statement in Table 7.11, with 32% agreeing or strongly agreeing, 32% stating they were uncertain, and 36% disagreeing or strongly disagreeing. There was a clearer pattern of views regarding the second statement, with almost two thirds of respondents (65%) agreeing or strongly agreeing that 'Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs'. Such a high level of agreement with this second statement suggests that social dilemmas are a substantial barrier to action in changing holiday behaviour. Tourists will see less reason to change their holiday behaviour to reduce their carbon footprint if they believe that other people will not change their behaviour. These findings are consistent with previous studies, for example Stoll-Kleemann et al. (2001), Anable et al. (2006) and Lorenzoni et al. (2007), which have all identified social dilemmas and the free-rider problem as a substantial barrier to changing behaviour in order to reduce climate change impacts.

A Spearman's rho test was conducted on the statements in Table 7.10 and the significance value for the correlation coefficient was  $<.001$  (see Appendix 7.11). It can be concluded that there is a significant relationship between the responses to the statements 'If a few people begin to change their holiday behaviour others will follow' and 'Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs'. The correlation coefficient derived was  $-.19$ , suggesting a weak negative relationship between the two variables, which is to be expected given the mixed responses to the first statement.

### 7.3.4 Social norms

The fourth, and final, external barrier identified from the literature and focus group research was 'Social norms' (Table 7.12).

**Table 7.12: Social norms**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Going on overseas holidays is a normal thing to do	612	14.5	58.2	7.4	18.0	2.0	2.35
I like talking to my friends and family about the places I have visited on overseas holidays	612	15.5	63.4	8.0	11.6	1.5	2.20

Almost three quarters of respondents (73%) agreed or strongly agreed that going on overseas holidays is a normal thing to do and a slightly higher proportion (79%) agreed or strongly agreed that they like talking to friends and families about their overseas holidays. The responses to these statements indicate that social norms and expectations to consume are a barrier to changing holiday behaviour for the majority of respondents. Lorenzoni et al. (2007) have also argued that frequent long-haul holidays and short breaks are influenced by societal pressures and expectations to consume.

As the Spearman's rho test yielded a significance value for the correlation coefficient of  $<.001$  (see Appendix 7.12), it can be concluded that there is a significant relationship between the responses to the statements 'Going on overseas holidays is a normal thing to do' and 'I like talking to my friends and family about the places I have visited on overseas holidays'. The correlation coefficient was .31, suggesting a positive relationship between the two variables.

### **7.3.5 Summary of the external barriers**

The responses to the statements indicate that all four of the external barriers identified from the literature and focus group research are powerful barriers to behavioural change in a holiday context. Not only did more than half of respondents agree there is a lack of action by politicians and businesses in the tourism industry in tackling climate change, they also expressed a view that the responsibility for mitigating the impacts of air travel on climate change lies with the airlines rather than with themselves and fellow air passengers. There are also powerful social norms and expectations to consume when it comes to overseas holidays, which enforce current holiday patterns and act against behavioural change.

The Spearman's rho tests conducted on the responses to the statements for each external barrier were all significant. The direction of the correlation coefficient for each barrier indicated that respondents were answering each pair of statements consistently, although in most situations the strength of the correlation coefficient was quite weak.

## **7.4 STRUCTURAL BARRIERS TO ACTION**

The Social Practices Model (Spaargaren 2003) highlights the important role that systems of provision play in potential behavioural change. In addition to the internal and external barriers encountered by tourists, there are also structural barriers within the tourism industry (see Chapter 3). These structural barriers have

been grouped into two sets of constraints in this study and, as with the internal and external barriers, have been informed by the literature review and the focus group research. The first set of barriers is instrumental factors, such as time, cost and convenience etc. The second set of barriers is situational, or contextual, factors.

#### 7.4.1 Instrumental barriers

The statements that were included in the questionnaire relating to instrumental barriers focused specifically on the transport aspect of holidays (Table 7.13). As discussed in Chapter 2, air travel is not only the most popular mode of transport for overseas holidays from the UK; it also dominates the tourism industry's contribution to climate change.

**Table 7.13: Instrumental barriers**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
Flying is the fastest way to travel to overseas holiday destinations	619	52.3	40.7	4.2	2.6	0.2	1.56
Flying is the cheapest way to travel to overseas holiday destinations	617	19.4	33.2	29.2	16.5	1.6	2.47
Flying is more convenient than travelling by train or coach to overseas holiday destinations	617	33.2	47.2	9.6	9.6	0.5	1.96
Travelling by train or coach to overseas holiday destinations takes too much time	613	27.9	48.9	8.5	14.5	0.2	2.10
I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying	616	27.1	45.5	15.6	9.7	2.1	2.15

The vast majority of respondents (93%) agreed or strongly agreed that flying is the fastest way to travel to overseas holiday destinations. Over three quarters of respondents (77%) also agreed or strongly agreed that travelling by train or coach takes too much time. Time factors are a strong barrier acting against the adoption of alternative transport modes to air travel for the majority of respondents.



In addition, four fifths of respondents (80%) agreed or strongly agreed that flying is more convenient than travelling by train or coach on overseas holidays. Not only do the majority of respondents view air travel as being faster than other transport modes, they also consider it a more convenient option. A smaller proportion of respondents, but still just over half (53%), agreed or strongly agreed that flying is the cheapest way to reach their overseas holiday destinations. The perceived higher cost of alternative transport modes is also a barrier to changing holiday behaviour for more than half of respondents.

The instrumental barriers of perceived time and cost superiority with air travel are reinforced by responses to the fifth statement in Table 7.13. Almost three quarters of respondents (73%) agreed or strongly agreed that they would use trains to travel to holiday destinations in Europe if the ticket prices and travel time were the same as flying. As Kollmuss and Agyeman (2002) identified, time and cost savings act as powerful incentives that can override social and environmental values.

#### **7.4.2 Situational barriers**

The second structural barrier is situational factors. The five statements in Table 7.14 address a number of potential situational constraints in the tourism industry. These constraints are not limited to transport options, as with the instrumental barriers discussed in section 7.4.1, but also concern accommodation providers and tourism intermediaries.

**Table 7.14: Situational barriers**

Statement	N	Strongly Agree %	Agree %	Uncertain %	Disagree %	Strongly Disagree %	Mean
For most overseas holiday destinations, flying is the only realistic travel option	616	37.7	45.3	7.8	8.8	0.5	1.90
Alternatives to flying are not offered by travel agents and tour operators	615	14.5	36.7	32.2	15.0	1.6	2.52
When planning holidays, the carbon footprint of different holidays is not made clear to tourists	614	24.1	54.9	19.2	1.5	0.3	1.99
It is easy to find out which hotels attempt to minimise their environmental impacts	614	2.1	6.7	36.5	42.8	11.9	3.56
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change	613	2.3	3.8	40.1	40.3	13.5	3.60

Responses to the first statement in Table 7.14 are consistent with the views expressed in Section 7.4.1. The vast majority of respondents (83%) agree or strongly agree that ‘For most overseas holiday destinations, flying is the only realistic travel option’. Related to the first statement, the second statement seeks to elicit respondents’ views on whether alternative transport modes to air travel are offered by travel intermediaries. Over half of respondents (51%) agreed or strongly agreed with the statement ‘Alternatives to flying are not offered by travel agents and tour operators’. If travel agents and tour operators are not offering alternative transport modes to customers, as more than half of respondents believe, then this will reinforce the view in the first statement of Table 7.14 that flying is the only option for most overseas holiday destinations. These findings support the opinion of Kollmuss and Agyeman (2002) and Anable et al. (2006) that enabling infrastructure is essential to behavioural change and that without it situational barriers are likely to be extremely powerful.

The vast majority of respondents (79%) agreed or strongly agreed that ‘When planning holidays, the carbon footprint of different holidays is not made clear to tourists’. Only 2% of respondents disagreed or strongly disagreed with this statement. According to respondents, the tourism industry is not providing

information on the carbon footprint of different holidays. Whilst carbon calculations for a complete holiday package could be quite complicated and involve some estimation, details of the carbon footprints of the various transport modes would be more straightforward to provide. A very small proportion of respondents (9%) agreed or strongly agreed that 'It is easy to find out which hotels attempt to minimise their environmental impacts'. More than half of respondents (55%) disagreed or strongly disagreed with the statement. An even smaller proportion (6%) agreed or strongly agreed that 'Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change'. Again, more than half of respondents (54%) disagreed or strongly disagreed with this statement, and a further 40% were uncertain. The tourism industry could certainly do more in the eyes of respondents to address the climate change impacts of holiday. Whilst presenting tourists with information on the carbon footprint of transport modes and publishing information on the efforts made by hotels to minimise their carbon footprint may not necessarily lead to a change in tourists' holiday behaviour, the current situation, where the industry is seen to be unengaged with climate change, is a barrier to action as it is reinforcing the view in respondents minds that they also do not need to worry about the climate change impacts of holidays.

### **7.4.3 Summary of structural barriers**

Both instrumental factors and situational factors present extremely strong barriers to action when it comes to tourists changing their holiday behaviour. The vast majority of respondents considered flying as the fastest and most convenient transport mode for travelling to overseas holiday destinations. More than half of respondents also believe that air travel is cheaper than other transport modes. These perceived advantages with air travel act as strong barriers to tourists changing their holiday behaviour to reduce their impacts on climate change. According to the views of the vast majority of respondents, there are also a number of situational factors working against behavioural change. Tourism intermediaries, accommodation providers and transport operators could all do more to encourage behavioural change by providing more information on products and promoting alternative travel options to flying. An additional situational barrier is the

perception amongst the majority of respondents that companies operating in the tourism industry do not want them to change their holiday behaviour to reduce impacts on climate change. The strength of these instrumental and situational barriers in a tourism and climate change context demonstrates the appropriateness and relevance of the Social Practices Model (Spaargaren 2003) to this study. With its emphasis on structural constraints in society, in addition to individual agency to act, the Social Practices Model provides an encompassing theoretical framework for examining barriers preventing changes in holiday behaviour.

## **7.5 FACTOR ANALYSIS**

The internal, external and structural barriers to action have been examined in the previous sections of this chapter. In total, 14 potentially relevant barriers were identified from the literature review and focus group research. These 14 barriers were addressed in the questionnaire using 34 attitude statements in questions 11, 12 and 13. An exploratory factor analysis was conducted on these 34 statements as a data reduction technique to extract a smaller number of latent variables (Rogerson 2001). The goal of factor analysis is to reduce a data set from a large group of interrelated variables to a smaller set of factors, which is achieved by explaining the maximum amount of common variance in a correlation matrix using the smallest number of explanatory constructs (Field 2009). The data reduction is achieved by identifying variables that correlate highly with a group of other variables, but do not correlate with other variables outside of that group, thus reducing the variables down to their underlying dimensions. Principal component analysis (PCA) was the method of factor analysis chosen. PCA was selected as it is the most commonly used form of exploratory factor analysis and is the most appropriate for cross-sectional research studies (Giles 2002). According to Tabachnick and Fidell (2001), PCA is the most appropriate factor analysis method for the researcher who is primarily interested in reducing a large number of variables down to a smaller number of components. Before conducting the factor analysis, variables were reverse scored where appropriate in order that low scores

reflect a negative attitude towards a statement and high scores reflect a positive attitude.

When running a factor analysis, it is ultimately down to the researcher to decide the number of factors to extract. There are a number of criteria on which the decision can be based. One commonly applied method is to use Kaiser's criterion, whereby all factors with eigenvalues greater than 1 are retained. Another option is to examine a scree plot of the eigenvalues and to extract the number of factors up to, but not including, the inflexion point of the curve. A third technique is to inspect the rotated component matrix and see which number of extracted factors provides the most interpretable solution. Breakwell et al. (2000) suggest the researcher identifies the minimum and maximum number of factors, then carries out an analysis for each potential solution, and finally selects the solution that makes the most theoretical sense. All three methods were used in this research when deciding the number of factors to extract.

After the factors have been extracted, the next step in the process is factor rotation. The factors are rotated in order to facilitate interpretation of the results of the analysis (Kinnear and Gray 2010). There are two types of rotation: orthogonal and oblique (Breakwell et al. 2000). Orthogonal rotation should be used when the variables are uncorrelated and oblique rotation should be used when the variables are correlated (Kinnear and Gray 2010). As the variables in the analysis are presumed to be independent and uncorrelated, orthogonal rotation was used. There are many different methods of orthogonal rotation that can be employed. Varimax rotation was used in this research, as it is widely recommended in the literature and simplifies the interpretation of the factors (Kline 1994; Giles 2002; Field 2009; Kinnear and Gray 2010). The factor analysis was repeated using oblique rotation as a precaution. As two statements were included for each internal and external barrier, and five statements for each structural barrier, there was a possibility that there could be some correlation (Field 2009). The component correlation matrix was checked to make sure that correlations between factors were below 0.32, which they were (see Table 7.15). Tabachnick and Fidell (2001) state that if correlations exceed 0.32 then there is 10% (or more) overlap in variance among factors, which is enough variance to warrant oblique rotation.

**Table 7.15: Component correlation matrix**

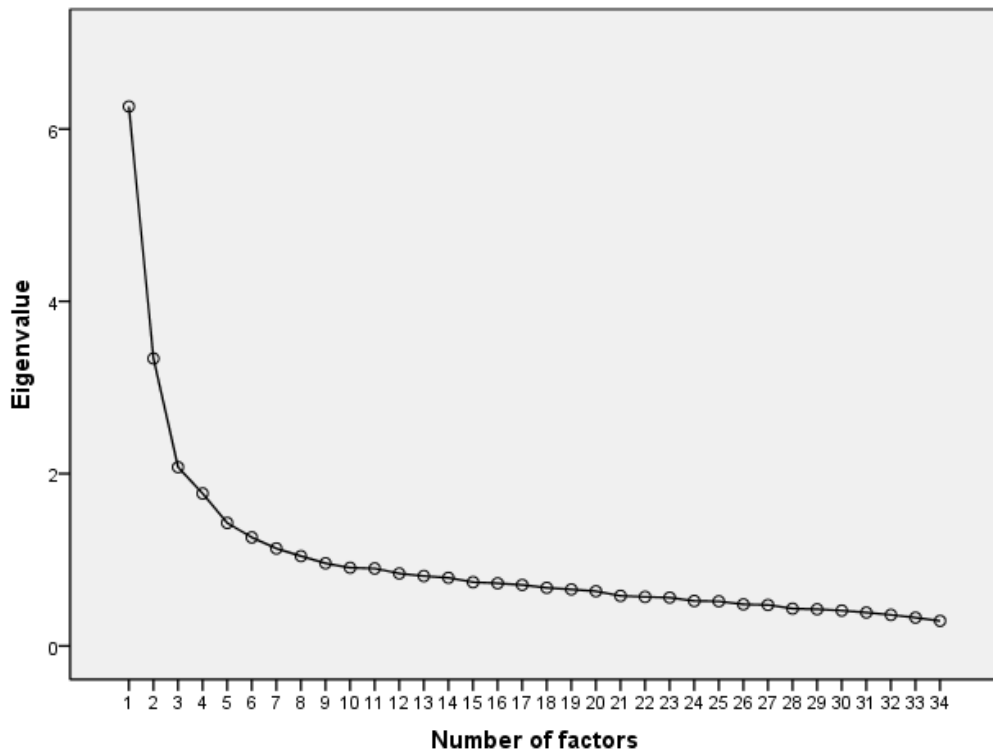
<b>Component</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1.000	-.219	-.072	-.038
2	-.219	1.000	.015	-.066
3	-.072	.015	1.000	-.072
4	-.038	-.066	-.072	1.000

Before proceeding with the factor analysis, the R-matrix was inspected to make sure that all 34 variables had at least one correlation of 0.3 and that multicollinearity in the component matrix was not present (Kinnear and Gray 2010). The suitability of the data for factor analysis was also assessed using Bartlett's Test of Sphericity, which employs a chi-square statistic to test for the presence of correlations among the variables, and the Kaiser-Meyer-Olkin measure of sampling adequacy, which provides a measure of the extent that the variables belong together and are therefore appropriate for factor analysis. As recommended by Field (2009), factor loadings of 0.4 were used as the cut-off point.

An initial analysis was run to obtain eigenvalues for each factor in the data. Eight factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 55.9% of the variance (see Table 7.16). The scree plot showed an inflexion point that justified retaining 4 factors (see Figure 7.1).

**Table 7.16: Factors with eigenvalues greater than 1**

<b>Factor</b>	<b>Eigenvalue</b>	<b>% of Variance</b>	<b>Cumulative %</b>
1	5.911	19.067	19.067
2	3.279	10.576	29.643
3	1.848	5.961	35.603
4	1.741	5.615	41.218
5	1.309	4.224	45.442
6	1.169	3.771	49.213
7	1.083	3.492	52.705
8	1.002	3.231	55.937



**Figure 7.1: Scree plot of eigenvalues**

PCA was conducted on the data set multiple times with 4, 5, 6, 7 and 8 factors extracted. The purpose of this was to determine which number of factors provided the most robust and interpretable solution. As the variables in the analysis are presumed to be unrelated, orthogonal rotation using a Varimax rotation method was employed. The variables did not load well on the 6 factor, 7 factor and 8 factor extractions. In each case, a high number of variables either loaded on more than one factor or failed to load (meet the 0.4 criteria) on any of the factors. The variables loaded in a more satisfactory manner on the 4 factor and 5 factor solutions. The rotated component matrices for the 4 factor and 5 factor solutions were inspected and the 4 factor extraction provided the most robust and interpretable solution. As the 4 factor solution meets Kaiser’s criterion, is before the point of inflexion in the scree plot, and offers the most interpretable solution in terms of the statements loading on each factor, it was therefore selected as the most appropriate factor extraction.

### 7.5.1 Results of four factor solution

A PCA was conducted on the 34 variables and the number of factors extracted was set at four. In the rotated component matrix, the cut-off for factor loadings was set at 0.4 as the literature suggests (Field 2009). Thirty one of the thirty four variables loaded on just one of the four factors. Three of the variables did not load on any of the four factors with a loading greater than or equal to 0.4. These variables were excluded from the analysis and the analysis was run again. The excluded variables were:

- Other people's holidays contribute more to climate change than my own
- The Government should introduce restrictions on tourists visiting certain long-haul destinations
- I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying

A PCA was conducted on the 31 remaining variables with orthogonal rotation (Varimax). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = 0.861. The recommended minimum is 0.5 (Field 2009). Bartlett's test of sphericity  $\chi^2(465) = 4620.06$ ,  $p < 0.001$ , indicated that correlations between items were sufficiently large for PCA. The four factors explained 41.2% of the variance. The recommended minimum is 40% (Field 2009). The 31 variables each loaded on just one of the four factors.

The four factor solution was run again applying an oblique rotation. The Direct Oblimin method of oblique rotation was used, as recommended in the literature (Kline 1994; Field 2009). The component correlation matrix was checked to make sure that correlations between factors were below 0.32. As all the correlation coefficients were below 0.32, orthogonal rotation is the appropriate rotation method.

The rotated component matrix for the four factor solution using orthogonal rotation is presented in Table 7.17. This table shows which of the four factors each variable (statement) loaded on.



**Table 7.17: Rotated component matrix for four factor solution**

	Factor			
	1	2	3	4
I believe that climate change is a serious threat to the future of our planet	.749			
I believe that my holidays have some affect on climate change	.696			
I am prepared to make substantial changes to the way I take holidays for climate change reasons	.692			
By taking fewer flights a year I will reduce my impact on climate change	.651			
Businesses in the tourism industry should do more to tackle climate change	-.643			
I try to minimise my carbon footprint	.574			
I am interested in protecting the environment	.571			
The Government is not doing enough to tackle climate change	-.560			
If a few people begin to change their holiday behaviour others will follow	.549			
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	.532			
Any actions an individual tourist can take will be insignificant on a global problem like climate change	.495			
There is considerable debate amongst scientists as to whether climate change is happening	.492			
I automatically think of flying when planning the travel part of my holidays		.763		
Flying is more convenient than travelling by train or coach to overseas holiday destinations		.755		
Travelling by train or coach to overseas holiday destinations takes too much time		.715		
For most overseas holiday destinations, flying is the only realistic travel option		.664		
Flying is the fastest way to travel to overseas holiday destinations		.616		
I usually explore alternatives to air travel when planning holidays		.569		
Flying is the cheapest way to travel to overseas holiday destinations		.557		
Going on overseas holidays is a normal thing to do		.525		
I like talking to my friends and family about the places I have visited on overseas holidays		.400		
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights			.604	
Airlines rather than passengers should be responsible for paying environmental taxes			.577	
Alternatives to flying are not offered by travel agents and tour operators			.507	
When planning holidays, the carbon footprint of different holidays is not made clear to tourists			.450	
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs			.414	
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change				-.646
Scientists will find a way to prevent climate change from happening				.589
It is easy to find out which hotels attempt to minimise their environmental impacts				-.560
Aeroplanes will be invented whose emissions do not contribute to climate change				.474
If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much				.412

## 7.5.2 Interpretation of the factor analysis

Factor loadings are regarded as high if they are greater than 0.6 (positive or negative sign is irrelevant) and moderately high if they are above 0.3 (Kline 1994). The statements loading on Factor 1 represent the largest share of variability in the data.

**Factor 1** (19% of variability) has high loadings on items related to internal barriers, in particular lack of knowledge about climate change, lack of environmental values, reluctance to change holiday lifestyles and self-efficacy.

**Factor 2** (11% of variability) has high loadings on items related to instrumental barriers connected with the benefits of flying and the internal barrier of air travel as an automatic habit.

**Factor 3** (6% of variability) has high loadings on items related to external barriers, in particular apportioning the responsibility for climate change on others (governments, the tourism industry and people in other countries).

**Factor 4** (6% of variability) has high loadings on items related to situational barriers and a reliance on technology to solve the climate change problem.

The 14 barriers identified from the literature review and focus group research have been reduced to four latent variables in the factor analysis (see Table 7.18). Factor 1 represents a barrier at the individual (social-psychological) level, Factor 2 represents a barrier connected to the dominant role of air travel in holidays, Factor 3 represents a barrier apportioning the blame and responsibility for climate change on others, and Factor 4 represents a barrier of climate change denial.

**Table 7.18: Barriers to engaging with climate change in a holiday context derived from factor analysis**

Barrier 1	Social-psychological factors at the individual level preventing engagement with climate change
Barrier 2	Air travel as habitual component of holidays
Barrier 3	Blame and responsibility for climate change placed on others
Barrier 4	Denial of climate change as a serious problem

## 7.6 CLUSTER ANALYSIS

Cluster analysis was conducted on the 34 variables (statements) in questions 11, 12 and 13 of the questionnaire. Cluster analysis is a technique that can be used to identify groups of similar cases in data sets (Giles 2002). The technique is frequently used to cluster people rather than variables (Breakwell et al. 2000).

Approaches to cluster analysis can be categorised into two broad types; hierarchical and non-hierarchical methods. Non-hierarchical cluster analysis begins with an a priori decision on the number of groups to form (Rogerson 2001). As there were no grounds on which to make a decision on the number of groups to select prior to the cluster analysis, the hierarchical approach was selected. Hierarchical methods start with  $n$  clusters (where  $n$  is the number of observations). At each stage of the process the closest pair of clusters is merged (Rogerson 2001). There are a number of different methods with which hierarchical cluster analysis can be performed (see, for example, Kaufman and Rousseeuw 1990). Ward's method of hierarchical cluster analysis was chosen as it is considered the best hierarchical method available (Hair et al. 2010). In Ward's hierarchical clustering method, union of every possible pair of clusters is considered and the two clusters whose fusion results in the minimum increase in an error sum-of-squares criterion are combined (Everitt 1993). Although the 34 statements were all subject to the same 5-point scale, the data was standardised using Z-scores in order to account for the differences in standard deviations amongst the variables (Hair et al. 2010).

A dendrogram was used to establish the number of substantive clusters present within the data (Field 2000). When deciding on the number of clusters, Rogerson (2001) recommends inspecting the dendrogram for a large horizontal range where the number of clusters does not change. This requires subjective judgement by the researcher. The dendrogram for this data suggested that there were either four or five substantive clusters (see Appendix 7.13).

The cluster analysis was then run again twice. In the first run, four clusters were specified, and in the second run five clusters were specified. The cluster means for

each cluster for each of the 34 variables were then calculated and entered into tables. The results of the four cluster solution (see Appendix 7.14) and the five cluster solution (see Appendix 7.15) were examined to see which solution offered the most interpretable and stable results. In the four cluster solution, one large cluster accounted for 47% of the sample. The five cluster solution split this large cluster into two smaller clusters. There were clear differences between these two smaller clusters in relation to the 34 variables. Therefore the five cluster solution was selected, as it offered the most comprehensible and robust solution.

Clusters 2 and 1 were the largest groups of respondents. The size of each cluster is shown in Table 7.19.

**Table 7.19: Number of respondents in each cluster**

<b>Cluster</b>	<b>Number of respondents</b>	<b>Percentage</b>
1	141	25.5
2	161	29.1
3	97	17.5
4	78	14.1
5	77	13.9

As well as calculating the cluster means for each of the 34 statements (see Appendix 7.15) the levels of agreement (% that agreed and strongly agreed) for each of the 5 clusters were also profiled against the attitude statements. Tables 7.20, 7.21 and 7.22 show levels of agreement by cluster with the statements relating to the internal, external and structural barriers respectively.

**Table 7.20: Levels of agreement by cluster: Internal barriers**

Statement	Cluster 1 Agreement %	Cluster 2 Agreement %	Cluster 3 Agreement %	Cluster 4 Agreement %	Cluster 5 Agreement %	Total Agreement %
<b>Lack of knowledge about climate change</b>						
There is considerable debate amongst scientists as to whether climate change is happening	75	58	58	56	91	66
I believe that climate change is a serious threat to the future of our planet	48	61	83	89	13	59
<b>Lack of environmental values</b>						
I try to minimise my carbon footprint	41	48	59	76	13	47
I am interested in protecting the environment	88	85	97	100	73	88
<b>Denial of personal responsibility</b>						
I believe that my holidays have some affect on climate change	45	61	79	83	16	57
Other people's holidays contribute more to climate change than my own	26	29	12	56	3	26
<b>Reluctance to change holiday lifestyles</b>						
I am prepared to make substantial changes to the way I take holidays for climate change reasons	11	8	30	68	1	21
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations	9	7	5	36	1	11
<b>Self-efficacy</b>						
Any actions an individual tourist can take will be insignificant on a global problem like climate change	45	58	21	39	79	49
By taking fewer flights a year I will reduce my impact on climate change	48	60	75	91	18	58
<b>Reliance on technology to solve the problem</b>						
Aeroplanes will be invented whose emissions do not contribute to climate change	36	36	21	28	48	35
Scientists will find a way to prevent climate change from happening	15	19	7	17	25	16
<b>Habits</b>						
I automatically think of flying when planning the travel part of my holidays	26	86	83	24	87	61
I usually explore alternatives to air travel when planning holidays	46	20	9	80	12	32
<b>Protecting the environment in other ways</b>						
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	18	32	10	9	66	26
If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much	23	44	12	17	23	26

**Table 7.21: Levels of agreement by cluster: External barriers**

Statement	Cluster 1 Agreement %	Cluster 2 Agreement %	Cluster 3 Agreement %	Cluster 4 Agreement %	Cluster 5 Agreement %	Total Agreement %
<b>Lack of political action</b>						
The Government is not doing enough to tackle climate change	42	52	56	90	8	<b>50</b>
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights	76	89	92	94	87	<b>87</b>
<b>Lack of action by business and industry</b>						
Businesses in the tourism industry should do more to tackle climate change	52	58	75	96	5	<b>58</b>
Airlines rather than passengers should be responsible for paying environmental taxes	57	67	60	63	49	<b>62</b>
<b>Social dilemmas</b>						
If a few people begin to change their holiday behaviour others will follow	24	21	57	60	4	<b>32</b>
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs	60	77	45	58	79	<b>65</b>
<b>Social norms</b>						
Going on overseas holidays is a normal thing to do	55	86	74	53	96	<b>73</b>
I like talking to my friends and family about the places I have visited on overseas holidays	62	89	83	76	96	<b>79</b>

**Table 7.22: Levels of agreement by cluster: Structural barriers**

Statement	Cluster 1 Agreement %	Cluster 2 Agreement %	Cluster 3 Agreement %	Cluster 4 Agreement %	Cluster 5 Agreement %	Total Agreement %
<b>Instrumental barriers</b>						
Flying is the fastest way to travel to overseas holiday destinations	87	99	98	86	99	<b>93</b>
Flying is the cheapest way to travel to overseas holiday destinations	32	79	46	33	68	<b>53</b>
Flying is more convenient than travelling by train or coach to overseas holiday destinations	62	97	93	53	95	<b>80</b>
Travelling by train or coach to overseas holiday destinations takes too much time	61	96	84	54	87	<b>77</b>
I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying	75	70	71	92	57	<b>73</b>
<b>Situational barriers</b>						
For most overseas holiday destinations, flying is the only realistic travel option	70	98	84	68	94	<b>83</b>
Alternatives to flying are not offered by travel agents and tour operators	43	59	54	59	49	<b>51</b>
When planning holidays, the carbon footprint of different holidays is not made clear to tourists	74	82	91	91	62	<b>79</b>
It is easy to find out which hotels attempt to minimise their environmental impacts	6	9	8	17	5	<b>9</b>
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change	2	7	1	14	7	<b>6</b>

Statements were identified for each cluster where levels of agreement were either higher or lower compared with the other cluster groups. These differences in levels of agreement with statements between clusters were used to establish the most prominent barriers. Some of the barriers were salient for more than one cluster. The most prominent barriers for each cluster are summarised in Table 7.23.

**Table 7.23: Summary of most prominent barriers for each cluster**

Cluster group	N	Most prominent barriers for each cluster
Cluster 4	78	Lack of political action Lack of action by business and industry
Cluster 3	97	Habits Lack of political action Lack of action by business and industry
Cluster 1	141	Lack of knowledge about climate change Denial of personal responsibility Reluctance to change holiday lifestyles
Cluster 2	161	Reluctance to change holiday lifestyles Self-efficacy Protecting the environment in other ways Social dilemmas Social norms Instrumental factors Situational factors
Cluster 5	77	Lack of knowledge about climate change Lack of environmental values Denial of personal responsibility Reluctance to change holiday lifestyles Habits Protecting the environment in other ways Social dilemmas Social norms Instrumental factors Situational factors

Cluster 4 is the group that identifies the least barriers to action in engaging with climate change in a holiday context. After Cluster 4, Cluster 3 and Cluster 1 are the groups that identify fewer barriers to action. Although three prominent barriers are identified for these two clusters, overall the levels of agreement with the 34 statements indicate that Cluster 3 experiences fewer barriers to action than Cluster 1. Respondents in Cluster 5 identify the most barriers to action out of all the cluster groups. There are a high number of barriers to overcome before respondents in Clusters 5 and 2 begin to change their holiday behaviour to reduce their impacts on climate change. There are fewer barriers to address for Clusters 4 and 3. There is also commonality in the salient barriers for these two clusters. The two major barriers for these two clusters are both external barriers. Respondents in these clusters view a lack of action by the Government and businesses in the tourism industry as the most salient barriers to them changing their holiday



behaviour. This suggests a more pro-active approach by the Government and tourism businesses in tackling tourism’s impacts on climate change could potentially lead to substantial changes in the holiday taking behaviour of these respondents.

### 7.6.1 Profile of clusters

In this section, the characteristics of each cluster are examined. Data analysis of the questionnaire has been re-run for each individual cluster and the differences between clusters compared. In Section 7.6.1, data in the tables has been presented in a way that the cluster with the least number of barriers to action (Cluster 4) appears first. The clusters are then ordered in terms of the increasing number of barriers to action each group identified. The cluster with the largest number of barriers to action (Cluster 5) appears last. This has been done so it is clearer to see, when comparing the clusters, how many barriers each group identified. The first item investigated is the number of overseas holidays taken in the last 3 years.

**Table 7.24: Number of overseas holidays taken in the last 3 years by cluster**

	<b>Cluster 4</b>	<b>Cluster 3</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 5</b>
Mean number of overseas holidays taken in the last 3 years	2.4	3.1	2.8	3.2	4.3

In Table 7.24, Cluster 4 (the cluster with the least number of barriers to action) had the lowest mean number of overseas holidays taken in the last 3 years and Cluster 5 (the cluster with the highest number of barriers to action) had the highest mean number of overseas holidays taken during this period. The other clusters had similar means to each other for the number of overseas holidays taken in the last 3 years.

Question 7 of the questionnaire asked ‘When planning your holidays, do you think about the impacts your holidays might have on climate change?’. Only a very small minority of respondents (8%) answered ‘yes’ to this question. Table 7.25 breaks down the yes and no responses to this question by cluster.

**Table 7.25: When planning your holidays, do you think about the impacts your holidays might have on climate change?**

	Cluster 4	Cluster 3	Cluster 1	Cluster 2	Cluster 5
Yes %	30	3	7	4	1
No %	71	97	93	96	99

Cluster 4 had by far the highest proportion of members (30%) saying that they did think about the impacts their holidays might have on climate change when planning their holidays compared with all of the other clusters. Only 1% of people in Cluster 5 answered ‘yes’ to this question.

In the questionnaire, respondents that answered ‘no’ to question 7 were asked to state their levels of agreement with a number of statements relating to their thoughts on climate change and holidays. The responses to these statements by cluster are presented in Table 7.26.

**Table 7.26: Levels of agreement by cluster: Views on holidays and climate change impacts**

Statement	Cluster 4 Agreement %	Cluster 3 Agreement %	Cluster 1 Agreement %	Cluster 2 Agreement %	Cluster 5 Agreement %
Thoughts on climate change impacts just don't enter my mind when planning holidays	64	81	75	85	92
I do not consider climate change impacts as being important when planning my holidays	50	56	68	79	95
I do not know how climate change is linked with holidays	20	23	26	38	45
My holidays do not have any impact on climate change	15	10	21	17	53
Thoughts about climate change are in the back of my mind but do not influence my holiday decisions	80	60	65	70	57

There was a general pattern for the first four statements in Table 7.26 in that levels of agreement with the statements increased in line with the number of barriers to action identified for each cluster. Cluster 4 had the lowest levels of agreement

with the first three statements in Table 7.26 and Cluster 5 had the highest levels of agreement with the first four statements.

The demographic characteristics of each cluster were also examined. The gender, age and level of education profile for each cluster were compared. The first demographic studied was gender (see Table 7.27).

**Table 7.27: Gender by cluster membership**

	<b>Cluster 4</b>	<b>Cluster 3</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 5</b>
Male %	41	27	46	47	62
Female %	59	73	54	53	38

Cluster 5 is the only cluster to have a higher proportion of males to females. This is also the cluster whose members identified the most barriers to action compared to the other clusters. The clusters that identified the least number of barriers to action have higher proportions of females to males and this is particularly the case for Cluster 3.

The age profiles of the clusters were examined and the results are shown in Table 7.28.

**Table 7.28: Age group by cluster membership**

	<b>Cluster 4</b>	<b>Cluster 3</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 5</b>
16-24 %	3	5	1	3	1
25-34 %	12	15	2	16	5
35-44 %	26	25	18	23	13
45-54 %	21	26	16	21	26
55-64 %	21	9	27	16	27
65-74 %	12	13	22	13	12
75+ %	7	7	13	9	16

Cluster 4 (41%) and Cluster 3 (45%) have a higher proportion of members aged under 45 compared with Cluster 5 (19%). All of the groups, however, have more than half their members aged 45 and over, reflecting the age profile of the sample as a whole (see Section 6.2.1).

The highest level of education completed by members of each clusters are shown in Table 7.29.

**Table 7.29: Highest level of education completed by cluster membership**

	Cluster 4	Cluster 3	Cluster 1	Cluster 2	Cluster 5
No formal qualifications %	0	4	18	10	12
O-Level/ CSE/ GCSE %	19	28	25	22	12
A-Level or equivalent %	14	16	16	15	8
Higher National Diploma or equivalent %	12	9	11	17	18
University degree or equivalent %	32	26	15	21	30
Post-graduate qualification %	21	14	14	11	18
Other %	3	4	2	6	3

There are no clear differences between the clusters with regards to the highest level of education completed. All the members of Cluster 4 have some level of formal qualification, whereas 12% of people in Cluster 5 have no formal qualifications. There is very little difference between Clusters 4 and 5, though, in terms of the proportion of members with university degrees and post-graduate qualifications. The clusters that identified the least number of barriers to action (Cluster 4) and the most barriers to action (Cluster 5) are the two clusters with the highest proportion of university graduates, with approximately half of each cluster consisting of members who hold a degree (53% and 48% respectively).

The clusters were also examined in relation to their members' opinions on the size of the climate change contributions of various factors. These factors concerned general everyday items (question 5 of the questionnaire) and items associated more specifically to holidays (question 6 of the questionnaire). The tables showing opinions on the size of the contributions for each cluster can be seen in Appendix 7.16.

With regards to the size of the contributions of the general everyday activities, Table 7.30 presents the means of the clusters for each factor and is included to help

provide a clearer understanding of the discussion of the clusters that follows the table. The lower the mean score, the larger the perceived size of the contribution to climate change of each activity.

**Table 7.30: Views on the size of the contribution of various factors to climate change by cluster**

Contribution to climate change	N	Cluster 4 Mean	Cluster 3 Mean	Cluster 1 Mean	Cluster 2 Mean	Cluster 5 Mean	Mean for All respondents
Flying/air travel	599	1.59	1.66	2.17	2.12	3.28	2.13
Food imported to the UK from overseas countries	602	2.01	2.25	2.53	2.44	3.11	2.45
Driving a car	597	2.05	2.16	2.65	2.37	3.54	2.51
Packaging on products	599	2.52	2.47	2.87	2.61	3.47	2.73
Going on holidays overseas	600	2.45	2.37	2.91	2.68	3.82	2.78
Heating homes	604	2.37	2.71	2.94	2.77	3.63	2.86
Use of electrical products in home	602	2.91	3.02	3.39	3.13	4.07	3.25
Using public transport	599	3.25	3.03	3.39	3.22	3.80	3.31
Using aerosol cans	590	3.27	2.96	3.19	3.53	3.92	3.34

Cluster 4 viewed the contribution of ‘Flying/air travel’ to climate change as larger than any of the other clusters, with 59% of respondents considering the contribution to be very large and a further 29% viewing the contribution to be large. Cluster 4 also considered the contribution of ‘Heating homes’ to climate change to be larger than any of the other clusters, and viewed it as the fourth largest contributor out of all the activities listed. Cluster 4 appears to have a good understanding of contributions to climate change. This cluster had the lowest means for all of the activities listed, thus it viewed the contributions of each activity to climate change as being larger compared with all the other clusters.

Over half (51%) of respondents in Cluster 3 viewed the contribution of ‘Flying/air travel’ to climate change to be very large, and a further 36% considered the contribution to be large. Cluster 3 also considered ‘Using aerosol cans’ to have a larger contribution to climate change than ‘Using public transport’ and ‘Use of electrical products in home’, which suggests some confusion amongst the members

of this cluster with regards climate change impacts and other environmental impacts. The means are slightly lower for all items compared with ‘All respondents’, thus Cluster 3 considers the contributions of the different items to climate change to be larger than the average for ‘All respondents’.

The responses of Cluster 1 are similar to the responses for ‘All respondents’ in that the ordering given to the different items based on the size of their perceived contribution are the same for the first six items in the table. A difference is that Cluster 1 viewed the contribution of ‘Using aerosol cans’ as larger than the contributions of ‘Use of electrical products in home’ and ‘Using public transport’, suggesting uncertainty regarding environmental impacts. The means are slightly higher for all items compared with ‘All respondents’, thus Cluster 1 considers the contributions of the different items to climate change to be smaller than the average for ‘All respondents’.

The responses of Cluster 2 are very similar to ‘All respondents’. One difference is that Cluster 2 considered ‘Driving a car’ to be the second largest contributor to climate change after ‘Flying/air travel’, whereas ‘All respondents’ viewed ‘Food imported to the UK from overseas countries’ to be the second largest contributor.

Only 6% of respondents in Cluster 5 viewed the contribution of ‘Flying/air travel’ as very large and only a further 18% considered the contribution as large. ‘Flying/air travel’ was viewed as the second largest contributor to climate change after ‘Food imported to the UK from overseas countries’. Cluster 5 considered the contributions to climate change of all the activities listed to be smaller than any of the other clusters. This cluster does not appear to believe that the activities listed make a substantial contribution to climate change.

The mean scores by cluster relating to the size of the contributions of holiday related factors to climate change are shown in Table 7.31. The actual opinions of the different clusters are, as mentioned earlier, given in Appendix 7.16.

**Table 7.31: Views on the size of the contribution of various holiday related factors to climate change**

Contribution to climate change	N	Cluster 4 mean	Cluster 3 mean	Cluster 1 mean	Cluster 2 mean	Cluster 5 mean	Mean for All respondents
Air travel/flying to the destination	603	1.60	1.72	2.24	2.16	3.38	2.16
Air conditioning used in tourist accommodation	603	2.39	2.51	2.87	2.77	3.56	2.80
Car driving to the destination	602	2.46	2.56	2.99	2.72	3.73	2.85
Coach travel to the destination	593	2.95	2.89	3.37	3.03	4.00	3.18
Water used in tourist accommodation	602	2.85	3.09	3.42	3.27	4.06	3.30
Train travel to the destination	595	3.16	3.16	3.44	3.22	4.16	3.34
Heating used in tourist accommodation	598	3.01	3.17	3.41	3.42	4.05	3.36
Ferry travel to the destination	597	3.16	3.28	3.59	3.24	4.16	3.44
Eating at restaurants	596	3.34	3.39	3.71	3.59	4.37	3.62

Over half of respondents (56%) in Cluster 4 considered the contribution of ‘Air travel/flying to the destination’ to climate change to be very large, and a further 32% viewed the contribution as large, which was a larger proportion than any of the other clusters. In general, this cluster viewed the contributions to climate change of all the items listed as being larger than the other clusters. However, Cluster 4 also considered the contribution of ‘Water used in tourist accommodation’ to climate change to be larger than the carbon emitting activities of ‘Coach travel to the destination’, ‘Heating used in tourist accommodation’, ‘Train travel to the destination’ and ‘Ferry travel to the destination’, which suggests some confusion amongst this cluster with regards impacts on climate change and impacts on water supplies and the environment.

Almost half of respondents (48%) in Cluster 3 considered the contribution of ‘Air travel/flying to the destination’ to climate change to be very large, and a further 34% viewed the contribution as large. Overall, the responses of Cluster 3 were similar to the responses of ‘All respondents’ except the means are lower, thus this cluster viewed the contributions as being larger compared to ‘All respondents’.

The responses of Cluster 1 are similar to the responses for ‘All respondents’. The means for this cluster are slightly higher than the means for ‘All respondents’, so contributions to climate change are viewed as being slightly smaller compared to ‘All respondents’.

The responses of Cluster 2 are similar to the responses for ‘All respondents’ except that ‘Train travel to the destination’ and ‘Ferry travel to the destination’ are considered to have larger contributions to climate change than ‘Water used in tourist accommodation’ and ‘Heating used in tourist accommodation’. The means for Cluster 2 are very similar to the mean scores for ‘All respondents’.

Cluster 5 viewed the contributions to climate change of all the items listed as being smaller compared with the other clusters. Only 4% of respondents considered the contribution of ‘Air travel/flying to the destination’ to climate change to be very large, whilst over a fifth (21%) of the members of this cluster viewed the contribution as being very small.

In general, the clusters are fairly consistent with one another in the order they place the items in terms of the perceived magnitude of the contributions to climate change. Clusters 4 and 3 generally viewed the contributions of all the items to climate change as being larger compared with the other clusters. Clusters 1 and 2 are broadly consistent with the responses from ‘All respondents’. Cluster 5 considered the contributions to climate change of all the items as being much smaller compared with the other clusters. All the clusters ranked ‘Water used in tourist accommodation’ in the middle of the nine items in terms of the contributions to climate change, which might suggest a confusion or lack of understanding between more general environmental impacts and climate change impacts.

### **7.6.2 Means of factor scores by cluster**

Analysis was conducted to investigate the relationship between cluster membership and each factor identified in the factor analysis. Table 7.32 shows the mean factor scores and corresponding standard deviations for each of the four factors by



cluster. The further away from zero a particular mean score is, the more strongly that cluster is related to that factor. If a mean score is negative then the factor is a strong barrier to engaging with climate change for the cluster in question. Conversely, a positive mean suggests that the factor is less of a barrier for that cluster. Factor 3: Blame and responsibility for climate change placed on others is the strongest barrier for Cluster 4 and is also a barrier for Cluster 2. For Cluster 3, the strongest barrier is Factor 2: Air travel as habitual component of holidays. For Cluster 1, the factor that is the strongest barrier is Factor 1: Social-psychological factors at the individual level. For Cluster 2, the strongest barrier is Factor 2: Air travel as habitual component of holidays. For Cluster 5, Factor 1: Social-psychological factors at the individual level is the strongest barrier, followed by Factor 2: Air travel as habitual component of holidays. Factor 1: Social-psychological factors at the individual level is the weakest barrier for Clusters 4 and 3, and Factor 2: Air travel as habitual component of holidays is the weakest barrier for Cluster 1.

**Table 7.32: Cluster membership and mean factor scores**

Cluster		Factor 1: Social- psychological factors at individual level	Factor 2: Air travel as habitual component of holidays	Factor 3: Blame and responsibility for climate change placed on others	Factor 4: Denial of climate change
1	Mean	-.3056134	.8838084	.1993371	.0079566
	Std. Deviation	.65837776	.66900678	.97303025	.87293690
2	Mean	.0312384	-.7431311	-.2744124	-.1538373
	Std. Deviation	.60253382	.62277401	.97752165	1.03652311
3	Mean	.6782295	-.3130821	.1918353	.3305934
	Std. Deviation	.55486790	.71096310	.77083297	.80953183
4	Mean	1.0984102	.7351669	-.3598548	.0691162
	Std. Deviation	.58973761	1.00901294	1.11847458	1.30395397
5	Mean	-1.5001909	-.4355756	.3153777	-.1671140
	Std. Deviation	.82505685	.67290611	.99966107	.92138291
Total	Mean	-.0038133	-.0028743	-.0022571	.0017056
	Std. Deviation	.99926042	.99852098	1.00072896	1.00079610

A one-way analysis of variance (ANOVA) was undertaken on the factors to see if there were significant differences between the means of the clusters. Levene's test was significant for all four factors ( $p < .05$ ), meaning that the variances for each cluster group were different for each factor. As cluster group variances are not equal, Welch's  $F$  should be reported rather than the  $F$ -ratio and the Games-Howell procedure should be used in post hoc tests (Field 2009).

**Table 7.33: One-way independent ANOVA results**

	<b>Factor 1: Social- psychological factors at individual level</b>	<b>Factor 2: Air travel as habitual component of holidays</b>	<b>Factor 3: Blame and responsibility for climate change placed on others</b>	<b>Factor 4: Denial of climate change</b>
Welch's $F$ statistic	166.440	138.264	9.893	5.480
df 1	4	4	4	4
df 2	236.170	230.987	237.460	236.265
Sig.	.000	.000	.000	.000

As Welch's  $F$  statistic is significant at the 5% level for each of the four factors (see Table 7.33), it can be concluded that there is a significant difference between cluster means. A post hoc test using the Games-Howell procedure was applied to determine which cluster means were significantly different for each of the four factors (see Table 7.34).

**Table 7.34: Results of post hoc tests to determine significant differences  
between clusters**

<b>Factor</b>	<b>Significant differences in mean factor scores by cluster (sig. is less than .05)</b>
Factor 1: Social-psychological factors at individual level	<p>The mean of cluster 4 is significantly different to the means of clusters 1, 2, 3 and 5</p> <p>The mean of cluster 3 is significantly different to the means of clusters 1, 2, 4 and 5</p> <p>The mean of cluster 1 is significantly different to the means of clusters 2, 3, 4 and 5</p> <p>The mean of cluster 2 is significantly different to the means of clusters 1, 3, 4 and 5</p> <p>The mean of cluster 5 is significantly different to the means of clusters 1, 2, 3 and 4</p>
Factor 2: Air travel as habitual component of holidays	<p>The mean of cluster 4 is significantly different to the means of clusters 2, 3 and 5</p> <p>The mean of cluster 3 is significantly different to the means of clusters 1, 2 and 4</p> <p>The mean of cluster 1 is significantly different to the means of clusters 2, 3 and 5</p> <p>The mean of cluster 2 is significantly different to the means of clusters 1, 3, 4 and 5</p> <p>The mean of cluster 5 is significantly different to the means of clusters 1, 2 and 4</p>
Factor 3: Blame and responsibility for climate change placed on others	<p>The mean of cluster 4 is significantly different to the means of clusters 1, 3 and 5</p> <p>The mean of cluster 3 is significantly different to the means of clusters 2 and 4</p> <p>The mean of cluster 1 is significantly different to the means of clusters 2 and 4</p> <p>The mean of cluster 2 is significantly different to the means of clusters 1, 3 and 5</p> <p>The mean of cluster 5 is significantly different to the means of clusters 2 and 4</p>
Factor 4: Denial of climate change	<p>The mean of cluster 4 is not significantly different to any of the other cluster means</p> <p>The mean of cluster 3 is significantly different to the means of clusters 1, 2 and 5</p> <p>The mean of cluster 1 is significantly different to the mean of cluster 3</p> <p>The mean of cluster 2 is significantly different to the mean of cluster 3</p> <p>The mean of cluster 5 is significantly different to the mean of cluster 3</p>

The analysis of mean factor scores by cluster revealed a consistency with the results of the cluster analysis in Section 7.6. The factors that each cluster related strongly to were consistent with the barriers that were most prominent for each cluster in the cluster analysis. The one-way independent ANOVA results confirmed that there were significant differences between the mean factor scores of the clusters. The post hoc tests showed which cluster means were significantly different for each of the four factors.

## 7.7 SUMMARY

This chapter examined the barriers to behavioural change in a holiday context. Of the eight internal barriers to action identified from the literature review and focus group research, the results of the questionnaire identified a ‘Reluctance to change holiday lifestyles’ with regards to holiday behaviour and ‘Habits’ in terms of automatically thinking of flying when going on holiday as the two strongest internal barriers. ‘Self-efficacy’ and ‘Protecting the environment in other ways’ were the next most prominent internal barriers. All four of the external barriers examined (‘Lack of political action’, ‘Lack of action by business and industry’, ‘Social dilemmas’ and ‘Social norms’) create strong obstacles to changing tourist behaviour. The levels of agreement and disagreement with the statements relating to instrumental factors and situational factors indicated that structural barriers are the most salient of all the barriers working against behavioural change in a holiday context.

Factor analysis was conducted on the 34 attitude statements that were included in the questionnaire to measure the strength of the barriers to action. A four factor extraction was found to provide the most comprehensive and interpretable solution. Thirty one of the thirty four variables (statements) loaded on the four factor solution. The three variables that did not load correctly were excluded from the analysis. The 31 variables were reduced to four latent variables (factors). Factor 1 represents a barrier at the individual social-psychological level. Of the variables that loaded on this factor, the analysis in Section 7.2 suggests that the strongest internal barriers for this factor are ‘Reluctance to change holiday lifestyles’ and ‘Self-efficacy’. Factor 2 represents a barrier connected to the role of air travel, in particular the perceived advantages of air travel over other transport options and automatic thoughts of flying when going on holiday. Factor 3 represents a barrier apportioning the blame and responsibility for climate change on politicians and businesses in the tourism industry. Factor 4 represents a barrier of climate change denial.

In the cluster analysis, the dendrogram suggested either a four or five cluster solution. Analysis of both solutions showed that the five cluster solution provided the most robust and interpretable results. After analysing the most prominent barriers for each cluster, the clusters were ordered in terms of the number of barriers to action each group identified. Earlier analysis in the chapter showed the most salient barriers to action for all respondents. The results of the cluster analysis highlighted that different barriers were stronger for different cluster groups. Cluster 4 identified the fewest barriers to changing holiday behaviour and Cluster 5 identified the largest number of barriers to action. Profiles of the clusters showed that Cluster 4 had taken the least number of mean overseas holidays in the last 3 years out of all five clusters, had the highest proportion of members saying that they did think about climate change impacts when planning their holidays, had more than twice the proportion of members aged under 45 compared with Cluster 5, and viewed the contributions of various items to climate change as larger than any of the other clusters. On the other hand, Cluster 5 had taken the highest number of mean overseas holidays in the last 3 years out of all five clusters, had the highest proportion of members stating that they did not think about climate change impacts when planning their holidays, was the only cluster to have a higher proportion of males than females, and viewed the contributions of various items to climate change as smaller than any of the other clusters. When mean factor scores by cluster were examined, the results of which factor were most prominent for each cluster was consistent with the results of the cluster analysis in terms of the salient barriers identified for each cluster.

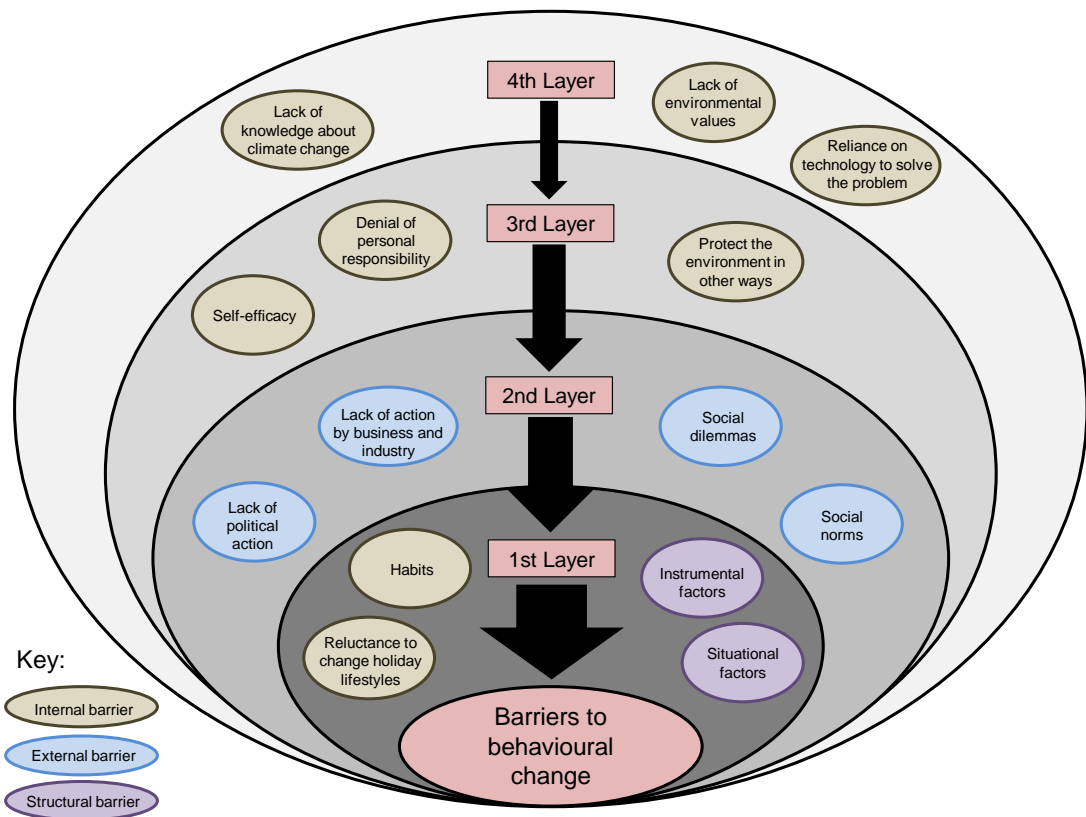
## **CHAPTER 8: CONCLUSIONS AND IMPLICATIONS**

### **8.1 INTRODUCTION**

The concluding chapter of this thesis begins with the presentation of the conceptual framework of the barriers to behavioural change in a holidays and climate change context. The framework is discussed and the rationale for the saliency of each barrier is explained. A section reviewing how the research findings meet the six objectives of this study follows. The contribution to knowledge of this study, in terms of empirical and theoretical contributions, is then detailed. This is followed by a discussion of the practical contributions of this research for policymakers. The limitations of this study are then outlined, before the chapter concludes with recommendations for further research.

### **8.2 CONCEPTUAL FRAMEWORK OF THE BARRIERS TO BEHAVIOURAL CHANGE**

The aim of the research was to analyse the role that the climate change impacts of holidays play in the decisions of tourists in order to develop a conceptual framework of the barriers to behavioural change. Potential barriers to behavioural change were first identified in the tourism and climate change literature and previous studies that have investigated the public's engagement with climate change. The focus group research conducted in Stage One of the data collection discovered a number of specific barriers to engaging with climate change in a holiday context. The barriers identified in the literature and the focus group research were then analysed and a list of the potentially most salient barriers was devised to be tested in the questionnaire in Stage Two of the data collection. Analysis of the qualitative and quantitative research undertaken in this study enabled the identification of the most salient barriers to behavioural change in a holidays and climate change context. These barriers are presented in a conceptual framework in Figure 8.1.



**Figure 8.1: Conceptual framework of the most salient barriers to behavioural change in a climate change and holidays context**

The ellipse at the bottom of the conceptual framework represents the collective barriers to behavioural change. Surrounding this ellipse are four layers, each containing barriers to action. The closer the layer to the bottom ellipse, the stronger and more salient the barriers contained in the layer. The increasing width of the arrows in the conceptual framework symbolises the increasing strength of the barriers in each layer. The 1<sup>st</sup> Layer outside of the inner ellipse contains the most salient barriers to action discovered in this research. The barriers in the 2<sup>nd</sup> Layer of the conceptual framework are not quite as powerful as the barriers to behavioural change in the 1<sup>st</sup> Layer, but are still very strong in a holidays and climate change context. The 3<sup>rd</sup> Layer contains barriers that were less salient, whilst the 4<sup>th</sup> Layer holds the weakest barriers identified in this research. The

rationale for the placement of the different barriers in each layer is provided in the next section.

### **8.2.1 Rationale for identifying the saliency of the barriers to action**

#### **1<sup>st</sup> Layer:**

The 1<sup>st</sup> layer contains the most salient barriers to action in a holidays and climate change context. Two of the internal barriers and the two structural barriers have been placed in this 1<sup>st</sup> layer. In the focus groups there was a strong resistance to the thought of changing holiday behaviour for climate change reasons. There was even stronger opposition to the idea of enforced future restrictions on tourists' ability to travel. A very high value was placed on holidays and the importance of freedom of choice emphasised. These views were reflected in the questionnaire, where a very strong reluctance to change holiday behaviour was evident. Habits were a very strong barrier to action in this research study. In the questionnaire, the majority of respondents stated that they automatically think of flying when planning their holidays and do not explore alternative modes of travel. Low-cost airlines were viewed very favourably in the focus group research, as they were considered responsible for making international travel more affordable and had enabled the taking of frequent overseas holidays. Structural barriers were extremely strong in both the qualitative and quantitative research. Instrumental factors, particularly those related to travel distance and time resulting in tourists' preference for flying, and situational factors, connected with the embedded structure of the tourism industry, act as strong constraints working against potential changes to holiday behaviour. All four of the barriers in the 1<sup>st</sup> layer were identified as potentially strong barriers to action in the literature reviewed in Chapter 3.

The four barriers in the 1<sup>st</sup> layer also reinforce each other, resulting in the construction of an even more powerful impediment to behavioural change. The reluctance to change holiday lifestyles and the automatic thoughts of flying to holiday destinations, combined with the time advantages of air travel over other transport modes and infrastructural constraints in the tourism supply chain result in



the entrenchment of current holiday practices that involve frequent overseas holidays and short breaks facilitated by air travel. These four barriers will be the hardest to overcome and present the strongest constraints to changing holiday behaviour.

### **2<sup>nd</sup> Layer:**

The four barriers in the 2<sup>nd</sup> Layer of the conceptual framework are all external barriers to action. Although these barriers were identified as being very strong in this research study, they have been placed in the 2<sup>nd</sup> Layer because they are considered slightly less powerful than the four barriers to action in the 1<sup>st</sup> Layer. Lack of political action, lack of action by business and industry and social dilemmas were very strong barriers to action in the questionnaire survey. ‘Responsibility lies with others’ was a very strong constraint discovered in the focus group research that collectively encapsulates these three barriers, with responsibility for climate change mitigation seen to rest with governments, businesses and other people. These barriers represent denial mechanisms (Stoll-Kleemann et al. 2001) that result in non-engagement with climate change issues. Although they serve as very powerful obstacles to action in a holiday context, they are not as salient as the four barriers in the 1<sup>st</sup> Layer. Social norms were identified as a strong barrier in the questionnaire. This barrier was not discovered in the focus groups research but, due to the underlying nature of social norms, this is not an unexpected finding. Social norms and expectations to consume have been identified in the literature as a potentially strong barrier to action in a holidays and climate change context (Lorenzoni et al. 2007).

### **3<sup>rd</sup> Layer:**

The 3<sup>rd</sup> Layer contains barriers of considerable strength in a holidays and climate change context. These barriers act against changes to holiday behaviour but are not as strong as the barriers in the first two layers. A sense of powerlessness was evident in two of the four focus groups and was identified as a substantial barrier. In the questionnaire, there were mixed responses to the statements measuring self-efficacy. There was a view that individual tourists could reduce their own impacts

on climate change by flying less frequently, but also a belief that the actions of an individual tourist would not make a difference to such a global problem. Protecting the environment in other ways was not identified as a barrier to action in the focus group research, but was evident in the tourism and climate change literature (Becken 2007; Barr et al. 2010; Dickinson et al. 2010). In the questionnaire this barrier was discovered to be a sizeable obstacle, with approximately a quarter of tourists believing that carbon savings in their home life could be used to justify the emissions from overseas holidays. There was some evidence in the focus groups of a denial of personal responsibility for climate change mitigation, although dialogue around this mainly involved blaming others for contributing to climate change. The questionnaire research revealed that the majority of tourists do believe that their holidays have some affect on climate change, thus suggesting that denial of personal responsibility is not one of the strongest barriers to changing holiday behaviour.

#### **4<sup>th</sup> Layer:**

The barriers in the 4<sup>th</sup> Layer are the weakest barriers to action identified in this research study. Whilst the barriers in the first three layers all have a considerable impact on behavioural change, particularly those in the first two layers, the barriers in the 4<sup>th</sup> Layer do not have such a strong influence. There was an indication in the focus groups that lack of knowledge could be a barrier to changing holiday behaviour as a rather limited understanding of the relationship between holidays and climate change was prevalent, but the findings of the questionnaire illustrated that the vast majority of tourists were at least aware that air travel is a significant contributor to climate change. In addition, the survey showed that the majority of tourists believe that climate change is a serious threat to the future of the planet. A lack of environmental values and a reliance on technology to solve the problem were not manifest in the focus group research, but were tested in the questionnaire as they were reported in the literature. The findings of the questionnaire revealed that these barriers are not particularly strong when it comes to changing holiday behaviour.

Whilst each internal, external and structural barrier identified in the conceptual framework all contribute separately to resistance to behavioural change, their impacts do not function in isolation. For the vast majority of tourists, a number of these barriers apply and operate when it comes to their holiday behaviour and decisions. Thus, there is a cumulative effect of these separate barriers, making the transition to behavioural change even more challenging for tourists.

### **8.3 REVIEW OF OBJECTIVES OF THE RESEARCH**

One of the objectives of this research was to develop a conceptual framework of the most salient barriers to behavioural change. The conceptual framework was presented in the previous section. The remaining five objectives of this research are now considered in turn.

#### **To identify the levels of awareness amongst tourists of the impacts holidays have on climate change**

The research showed that general awareness of climate change as a phenomenon is quite high, but a deeper knowledge and understanding of the causes and the contribution of human activity is lacking. The limited understanding of the science behind climate change is combined with a considerable degree of scepticism with regards to the magnitude of the problem. There was a high level of general awareness that flying has a substantial impact on climate change. However, there was much lower awareness of other ways in which holidays contribute to climate change. Despite the understanding that air travel is a significant contributing factor, the association between holidays and climate change impacts is not one that is readily made by tourists.

### **To establish the extent to which climate change impacts feature in the holiday decision-making processes of tourists**

The vast majority of tourists do not think about climate change impacts at all when planning their holidays. The research revealed a high level of consensus that thoughts on climate change impacts do not enter tourists' minds when holiday planning and that climate change impacts are not viewed as an important consideration during the holiday decision-making process. The absence of any mention of climate change when identifying important factors considered when planning holidays in the focus group research, combined with the very small minority of respondents in the questionnaire survey that stated they think about climate change when selecting their holidays, adds support to the proposition in Objective One that climate change is not conceptually linked to holidays in the vast majority of tourists' minds.

### **To explore the attitudes of tourists towards climate change and changing holiday behaviour**

This study has revealed that tourists do not hold positive attitudes towards changing holiday behaviour in order to reduce impacts on climate change. There was a complete absence of affirmative attitudes towards adapting holiday and flying behaviour for climate change reasons displayed in the focus group research. No opinions were expressed that tourists should alter their holiday practices. In the questionnaire survey, a sizeable minority of tourists agreed that the volume of air travel should be voluntarily reduced. However, there was a much greater degree of consistency in attitudes towards potential restrictions on the number of overseas holidays taken, where there were very high levels of opposition to the idea of enforced changes to holiday behaviour. The research has identified an awareness-attitude gap when it comes to holidays and climate change. The high levels of general awareness that air travel is a significant contributor to climate change does not manifest in positive attitudes to changing holiday behaviour to reduce carbon emissions from tourism.

**To identify the behavioural changes that tourists are engaging with in a holiday context to reduce their individual impacts on climate change**

The majority of tourists are not yet engaging in any forms of behavioural change in order to reduce the climate change impacts of their holidays. The quantitative and qualitative research findings both revealed that the vast majority of tourists do not even think about climate change when holiday planning. A small minority of tourists, however, stated in the questionnaire that they do think about climate change when holiday decision-making. In a follow-up open question, this very small group of tourists identified a number of behavioural changes that they were engaging in. These mainly revolved around changes to air travel practices, such as flying less frequently, using alternative transport modes for short-haul holidays and stopping flying all together.

**To analyse the major barriers to tourists adopting less carbon-intensive holiday practices and to determine which barriers are more salient for different groups of the population**

The focus group research identified six major barriers preventing tourists from changing their holiday behaviour. Using the barriers to action identified in the focus group research and the literature review, the questionnaire survey was designed to enable further analysis of the major barriers to behavioural change and to establish the most salient barriers for different groups. The most powerful internal barriers identified in this research were 'Reluctance to change holiday lifestyles', 'Habits' and 'Self-efficacy'. All four external barriers to action examined proved to be powerful ones: 'Lack of political action', 'Lack of action by business and industry', 'Social dilemmas' and 'Social norms'. Structural barriers in the tourism industry present major obstacles to behavioural change amongst tourists. The instrumental factors identified in the focus group research relating to preferences for air travel over alternative transport modes were evident in the findings of the questionnaire survey. There are also a number of situational factors preventing behavioural change. In addition to situational barriers connected with air travel, barriers also exist as a result of failures by tourism

intermediaries, accommodation providers and transport operators to do more to promote behavioural change and encourage holidays with lower carbon footprints.

The hierarchical cluster analysis produced five groups. The most salient barriers to action were identified for each cluster. Cluster 4 identified the least number of barriers to action and was thus the cluster group least resistant to making changes to holiday practices. Cluster 5 identified the most barriers to action out of all the clusters, and was the most resistant to changing holiday behaviour. The profiles of each cluster were compared with one another. The least resistant group to behavioural change, Cluster 4, had taken the least number of overseas holidays in the last 3 years, had the highest proportion of members declaring that they think about climate change impacts when planning their holidays and had the highest levels of awareness of the contributions of holidays to climate change compared with the other clusters. Demographically, Cluster 4 had more than double the proportion of members aged under 45 compared with Cluster 5.

### **To develop a conceptual framework of the most salient barriers to behavioural change**

A conceptual framework of the most salient barriers to behavioural change was presented in Section 8.2. As a result of analysis of the qualitative and quantitative research conducted in this study, four barriers were identified as being the most salient and powerful in a holidays and climate change context: A reluctance to change holiday lifestyles; Habits (in the form of automatic thoughts of using air travel to reach holiday destinations); Instrumental factors; and Situational factors.

## **8.4 CONTRIBUTION TO KNOWLEDGE**

This study investigating tourists' awareness of and engagement with climate change impacts and holidays has resulted in a number of important contributions to knowledge. This section outlines and discusses the main empirical and theoretical contributions.

### **8.4.1 Empirical contribution**

This study contributes new knowledge to the field of tourism and climate change in a number of different ways. Previous studies have tended to focus on tourists' awareness of and attitudes towards climate change and air travel (Gössling et al. 2006; Becken 2007; Randles and Mander 2009; Barr et al. 2010; Cohen et al. 2011). This study is one of the first to explicitly examine the extent to which thoughts about climate change feature in the holiday decisions of tourists. The research revealed that the vast majority of tourists do not think about climate change impacts at all when planning their holidays. The reasons why tourists do not think about climate change impacts when planning holidays were also investigated and established. For the small minority of tourists that do think about climate change, this research discovered how thoughts about climate change feature and what affects these thoughts have on holiday decisions.

This study is the first to identify the most salient barriers to action in a climate change and holidays context. This research contributes to the literature on the public's engagement with climate change (Stoll-Kleemann et al. 2001; Anable et al. 2006; Lorenzoni et al. 2007) and barriers to behavioural change (Blake 1999; Kollmuss and Agyeman 2002). In addition to establishing the most powerful barriers to changing holiday behaviour, this study also contains a detailed exploration of these barriers to action. A cluster analysis was conducted on the barriers and five cluster groups were identified. The most salient barriers for these different groups were investigated and the profiles of each group detailed. A factor analysis was also performed and the fourteen barriers to action identified in the literature review and focus group research were reduced to four latent variables (factors).

The results of this research contribute to the literature that has investigated tourists' awareness of climate change. In contrast with some of the earlier studies (Gössling et al. 2006; Shaw and Thomas 2006; Becken 2007; Randles and Mander 2009) that found a generally low awareness amongst tourists of the impacts air travel has on climate change, this study discovered that the majority of tourists are aware that flying makes a substantial contribution to climate change. This finding is

supported by the results of Cohen et al. (2011); tourists are aware to some degree of the impact of air travel on climate change. With the exception of air travel, this research revealed that tourists were not aware of other ways in which holidays can contribute to climate change. In this respect, the findings of this research were consistent with previous studies that have proposed that tourists do not have a deeper knowledge of climate change issues or the science related to climate change (Anable et al. 2006; Randles and Mander 2009; Barr et al. 2010).

This study provides further insights into the reluctance amongst tourists to change their holiday behaviour (Becken 2007; Randles and Mander 2009; Barr et al. 2010). Similar to the findings of Becken (2007), this research discovered a belief amongst tourists that they have a right to fly as much as they want and revealed the high importance placed on freedom of choice when it comes to choosing holidays. There was extremely strong opposition to the idea of future restrictions limiting tourists' ability to travel freely. Consistent with the findings of Randles and Mander (2009) and Barr et al. (2010), the prospect of increased taxes on air travel were viewed slightly more favourably than quotas limiting the number of flights allowed in a year, especially by those tourists wealthy enough to pay the higher taxes and thus continue their holiday and flying behaviour.

In contrast with Cohen et al. (2011), this research revealed that tourists have a strong affinity with low-cost airlines and adjudge them largely responsible for making overseas holidays more accessible and affordable. In general, there were positive views expressed towards airlines and air travel, despite the environmental impacts and contribution to climate change. This research also adds support to the claims of Randles and Mander (2009) that air travel has become a habit for the majority of tourists and Gössling et al. (2009) that flying is an integrated and unquestioned part of many people's lifestyles. In this study, the majority of tourists stated they automatically think of flying when planning their holidays and do not explore alternative modes of transport to air travel.

Whilst this research found strong evidence of tourists believing that responsibility for climate change lies with others, a denial mechanism identified in the climate change engagement literature by Stoll-Kleemann et al. (2001) and Lorenzoni et al.



(2007), it also revealed that many tourists accept some personal responsibility for the impacts their holidays have on climate change. This challenges the findings of Becken (2007), Gössling et al. (2009) and Randles and Mander (2009) who found that the majority of tourists were not prepared to accept personal responsibility for contributing to climate change. As with the increased awareness of the impacts of air travel on climate change discovered in this research compared with earlier studies, the increased level of acknowledgement of personal responsibility may signal a growing understanding and acceptance of climate change over time by tourists. Although recognition of personal responsibility for impacts on climate change is higher than in previous studies, a belief that governments, businesses and people in other countries are more responsible for contributing to climate change than UK residents was still a powerful barrier to action preventing tourists from changing their holiday behaviour. This is consistent with the findings of other studies (Becken 2007; Randles and Mander 2009; Cohen et al. 2011).

This study also contributes to empirical knowledge with regards the attitudes and behaviour of the most frequent overseas holiday takers. This study discovered that tourists that have taken four or more overseas holidays in the last three years were more likely to consider climate change impacts as being unimportant when planning holidays, to express stronger negative attitudes towards changing holiday behaviour and to be the most resistant to adapting future holiday practices in order to reduce carbon emissions compared with tourists that holiday less frequently. The attitudes and behaviour of this group of frequent travellers were aligned and consistent. In contrast to McKercher et al.'s (2010) study, this research found that the most frequent overseas tourists exhibited a lower level of awareness of the impacts of air travel on climate change compared with less frequent travellers.

This study makes an important intellectual contribution to overall tourism research through the demonstrated applicability of psychological and sociological theories to the tourism discipline. Understanding of tourist engagement with climate change impacts and the identification of barriers to action have been enhanced in this study by examining them in relation to psychological and sociological constructs. The successful application of tenets of psychological and sociological theories in this study offers an interesting perspective for tourism research in

general. As tourism is an inherently social activity, the argument is made that its study can, in many instances, be strengthened through the application of theories and models from the social sciences.

#### **8.4.2 Theoretical contribution**

Underpinning this study is the Social Practices Model (Spaargaren 2003). The findings of this research support the theoretical framework of the Social Practices Model and add empirical analysis that has been called for in the literature (Verbeek and Mommaas 2007). The strength of the structural barriers to changing holiday behaviour for climate change reasons, discovered in this research, advocates the emphasis placed on structural constraints in society by the Social Practices Model. An important dimension of the model is the system of provision and the levels of green provisioning. The infrastructural barriers identified in this research in terms of air travel being the only realistic transport mode for travelling to most overseas holiday destinations from the UK, combined with situational factors centred around a tourism industry that is constrained by the embedded fabric of promoting holidays involving flying, highlights the importance of social structure and the limited system of provision with regards to holidays. This research reveals that the levels of green provisioning (Spaargaren 2003) envisioned by tourists are very low when it comes to overseas holidays. For most medium and long-haul holiday destinations there are no 'green' or substantially lower carbon-emitting travel options. The only choice tourists have is to change their holiday destination to one closer to the UK, thus enabling the use of alternative transport modes. However, this research has revealed that there is a very strong reluctance amongst tourists to voluntarily change their holiday behaviour for climate change reasons. Whilst the Social Practices Model places a greater emphasis on structural constraints in society than many of the psychology attitude-behaviour models, it also positions an equal significance on the agency of an individual to act. This study has illustrated that even if the structural constraints did not exist, there are still a number of very powerful barriers to behavioural change connected to the individual. In this respect, this research supports the tenet of the Social Practices Model that holiday behaviour is constrained by both individual agency to act and structural limitations.

This study empirically supports the hypothesis of the Social Practices Model that some individuals deliberately insulate specific social practices from the environmental considerations that they apply in other segments of their lifestyle. Consistent with findings in other studies (Becken 2007; Barr et al. 2010; Dickinson et al. 2010), this research discovered evidence of a belief amongst tourists that holidays are special and that the climate change impacts of holidays should be treated differently to activities related to their everyday home lives. A substantial minority of tourists stated that if they reduce their carbon footprint in their home lives then the climate change impacts of their overseas holidays will not be so important.

Holidays have been regarded as a social practice in this research and the focus has been on awareness of and attitudes towards holidays and climate change rather than flying and climate change. The proposal of Verbeek and Mommaas (2007) that the overall holiday package should be viewed as a social practice, rather than the chosen transport mode, has been used as a justification for this stance. Verbeek and Mommaas (2007) argue that although holidays are not an everyday activity, they are nonetheless characterised by routinised behavioural patterns. They suggest that most tourists have a routinised way of booking holidays and many do not question which modes of transport they will use or in what type of accommodation they will stay. The finding in this research that the majority of tourists automatically think of flying to their holiday destination and do not even consider alternative transport options adds support to Verbeek and Mommaas' premise that holidays are a social practice.

This study also makes a theoretical contribution to arguments concerning the attitude-behaviour gap and Cognitive Dissonance Theory (Festinger 1957). This research established that tourists generally have a high level of awareness that air travel is a substantial contributing factor to global climate change. Although there was a much lower level of awareness of other ways that holidays contribute to climate change, flying was identified as having a considerable impact. This awareness of the detrimental impact of air travel on climate change did not, however, manifest in the attitudes of tourists towards changing holiday behaviour. The research revealed that the majority of tourists do not hold positive attitudes

towards voluntarily changing holiday practices in order to reduce carbon emissions. There were also very strong attitudes expressed opposing the idea of enforced travel restrictions being introduced in the future. In this study, attitudes and behaviour relating to climate change impacts and holiday decisions were consistent, as the majority of tourists are not engaging in behavioural changes to lessen impacts on climate change. Thus, this research would suggest that there is an awareness-attitude gap rather than an attitude-behaviour gap with respect to holidays and climate change. It is not clear from this study whether awareness is failing to translate to attitudes or whether behaviour is influencing tourists' attitudes. What has been ascertained, though, is that despite the awareness that air travel contributes to climate change, the vast majority of tourists do not think about climate change impacts when planning their holidays. This finding raises the question as to whether the conceptual association between holidays and climate is made by tourists or is somehow suppressed.

Whilst the Social Practices Model (Spaargaren 2003) is the main theoretical framework underpinning this study, the research also draws on a number of psychological theories. The Social Practices Model advocates that social practices are influenced by both structural constraints and individual agency to act. When examining the barriers to behavioural change related to individual agency to act, the psychological theories offer useful insights into the internal barriers that affect tourists' decisions. One of the weaknesses of these psychological theories is the general lack of attention given to structural constraints in society. Structural constraints, as identified in this research, can often have considerable impacts on individuals' behaviour. By combining the strengths of environmental sociology theories and social psychology theories, this study investigates more fully the barriers to behavioural change in a holidays and climate change context than would be possible if sociological theories or psychological theories were examined in isolation of one another. The adoption of the Social Practices Model from environmental sociology and the fusion with components of psychological theories in this study has resulted in a new way to examine engagement with climate change and has, thus, made a broader intellectual contribution to social science.

## **8.5 PRACTICAL CONTRIBUTION: IMPLICATIONS FOR POLICYMAKERS**

Climate change is one of the most urgent global problems facing the planet. The increasing contribution of tourism, in particular air travel, to climate change makes this research valuable to a number of different institutions. A wide range of international bodies, governments and non-governmental organisations are actively engaged with reducing GHG emissions and limiting future climate change. Specifically, the findings of this research provide important information to policymakers seeking to reduce the impact of tourism's contribution to climate change through affecting behavioural change by individual tourists.

This research has demonstrated that the majority of tourists are aware that air travel has a substantial impact on climate change. Although levels of awareness of the impacts of flying on climate change are quite high, tourists are less aware of other holiday related impacts on climate change. Of particular interest is the fact that an association between holidays and climate change impacts is not one that is formed automatically in the minds of the tourists that took part in this research. Policymakers need to address this issue and find a way to induce tourists to make the connection in their minds between their holidays and impacts on climate change. It is not necessarily a lack of knowledge that is causing the problem, as the majority of tourists are aware that air travel is a significant contributor to climate change. The problem is more that this awareness is in the back of tourists' minds, rather than being a prominent consideration in their thoughts.

This conjecture that tourists are failing to make, or possibly choosing not to make, the association between their holidays and impacts on climate change is reinforced by other findings in the research. The study revealed that the overwhelming majority of tourists do not think about climate change impacts at all when planning their holidays and do not view climate change as an important consideration. If tourists are to change their holiday behaviour in order to have lower impacts on climate change then policymakers need to convince tourists that climate change is an important issue when planning their holidays.

A key finding from this research that has important implications for policymakers is the significance of the number of overseas holidays taken by tourists. In this study, tourists that had most frequently taken overseas holidays had lower levels of awareness of the impacts of holidays on climate change and expressed more negative attitudes towards changing holiday behaviour than less frequent travellers. The tourists that take the most overseas holidays also reported the lowest levels of engagement with changing their holiday behaviour for climate change reasons and exhibited the strongest reluctance to change behaviour in the future. This is an important issue for policymakers aiming to reduce tourism's impact on climate change. Not only do more frequent travellers present the greatest challenge in terms of resistance to changing holiday behaviour, they are also the tourists that have the largest impacts on climate change contributions. Policymakers need to examine the mechanisms that lead to frequent overseas holidays by tourists.

As one of the objectives of this study, the most salient barriers to tourists changing their holiday behaviour were identified and analysed. This information is of crucial importance to policymakers. Having established the strongest barriers to action in a holidays and climate change context, which are a combination of internal, external and structural constraints, policymakers can use this information and attempt to break them down. However, tackling these barriers will not be such a straightforward task as identifying them. The barriers are very strong and some of them reinforce each other, making them collectively more powerful. The most salient internal barriers – a reluctance to change holiday lifestyles and flying as a habitual practice – are likely to be very difficult to overcome. The research showed that tourists are very resistant to changing their holiday behaviour for climate change reasons and that they place a very high level of importance on their holidays. This importance, combined with the emotional attachment to holidays (Böhler et al. 2006; Cohen and Higham 2011), suggests that it will be difficult to influence these established patterns of behaviour.

The greatest challenge to policymakers, however, will be tackling the structural barriers to behavioural change. Both infrastructural and situational barriers present a number of significant obstacles to overcome. In terms of transport modes for overseas holidays, air travel is perceived by tourists as quicker, cheaper and more

convenient than the alternatives. Policymakers could increase the promotion of overseas holiday destinations for which air travel is not necessarily faster, cheaper and more convenient than other transport modes. Many holiday destinations in Western Europe can be reached by train, coach and ferry from the UK. Peeters and Schouten (2006) suggest that tourism destinations should use their marketing budgets to target tourists from neighbouring countries rather than distant, long-haul inbound markets, in order to reduce the climate change impacts of travel. In addition, further action could be taken to make alternative forms of transport more competitive with flying. Policymakers could subsidise train, coach and ferry travel; they could reduce taxes on fuel for these transport modes; they could invest more money in infrastructure, particularly the rail network in Western Europe; and they could encourage and fund the development of new booking systems that would enable tourists to purchase one integrated ticket for travel to their holiday destination rather than having to purchase numerous tickets from numerous different transport companies which is often the case currently. These changes will not be possible, however, without substantial financial investment and a co-ordinated international approach to transport.

Whilst it may be possible for policymakers to exert some influence over tourism behaviour for holiday destinations in Western Europe, long-haul holiday destinations present more of an issue. For most long-haul holiday destinations there is no viable alternative transport option to air travel. If carbon emissions from long-haul holidays are to be reduced in the future then this will not be achieved by encouraging tourists to use lower carbon emitting transport modes. Instead, behavioural change in terms of the number of long-haul holidays taken and the distance travelled to destinations will need to be realised. This presents a much greater challenge for policymakers. This research has demonstrated that the majority of tourists are very resistant to changing their aspirational holiday lifestyles and strongly object to Government interference in the way they choose to take their holidays. Policymakers need to find a way to change long-haul holiday behaviour if GHG emissions from the tourism industry are to be reduced, but this is likely to be a long and slow process.

The cluster analysis performed on the barriers to action identified five cluster groups. Two of the clusters (Cluster 4 and Cluster 3) exhibited the least number of barriers to action out of all five groups. These two clusters combined constituted a third of the overall sample of respondents. If policymakers could effectively initiate behavioural change amongst tourists in these two cluster groups it could potentially have a significant impact on reducing carbon emissions. There was also commonality in the most salient barriers to action for these two clusters. The two most prominent barriers for Clusters 4 and 3 were lack of political action and lack of action by business and industry. These two external barriers could be directly addressed by policymakers. The UK Government could address a perceived lack of political action by sending out clearer messages on its position regarding tourism's contribution to climate change. In a wider sense, politicians and policymakers need to set an example and lead from the front in terms of being seen to reduce their carbon footprints and changing their behaviour and lifestyles. Policymakers could also legislate to make tourism businesses more accountable for mitigating climate change contributions from the industry. In addition, tourism businesses could be required to provide more information to tourists on the carbon footprints of their products and to do more to promote lower carbon emitting options. The analysis of the situational barriers to behavioural change demonstrated that the majority of tourists believe that travel agents and tour operators do not offer alternatives to flying, that the carbon footprint of different holidays is not made clear, and that it is difficult to find out which hotels attempt to minimise their environmental impacts.

If tourists in these two cluster groups viewed the Government and tourism businesses to be taking a more pro-active approach to tackling climate change, then this could potentially result in behavioural change in a substantial proportion of overseas travellers belonging to these cluster groups. There is, however, a possibility that blaming the Government and businesses for their inactivity and lack of engagement with climate change could be a form of denial mechanism (Stoll-Kleemann et al. 2001) for some of the members of these cluster groups. Apportioning the blame on governments and industry may be a way of dealing with dissonance and it is possible that the removal of these barriers may not result in substantial behavioural change. Further research could be undertaken to



investigate the potential for behavioural change within these cluster groups (see Section 8.7).

The findings of this research provide policymakers with detailed information on the most salient barriers to behavioural change in a holidays and climate change context. Recommendations for how these barriers could be tackled and possibly overcome have been made in this section. Whilst there is a considerable amount of scope for behavioural change by UK tourists, and evidence of some willingness to engage with climate change when planning holidays by a minority of tourists in this study, the findings of this research suggest that instigating significant changes in tourists' attitudes and behaviour will not be an easy or quick task. The barriers to behavioural change are strong for the majority of tourists and there is considerable resistance to changing holiday practices. Behavioural change is likely to be a difficult and slow process, but it is vital that policymakers strive to affect this change if emissions from the tourism industry are to be reduced in the future.

## **8.6 LIMITATIONS OF THE STUDY**

The methodological limitations associated with this study have been discussed in detail in Chapter 4. These limitations include the under representation of the lower social classes in the focus group research and younger people, in particular those aged between 16 and 24, in the questionnaire survey. The most pertinent limitation of this research, however, concerns external validity and the generalisability of the questionnaire data. The sample used in the survey came from the Bournemouth area of the UK. Whilst the sample is representative of the Bournemouth postcode population (the Royal Mail Postcode Address File having been used as the sampling frame), it is not necessarily representative of the UK population. Therefore, the findings of this study can only be generalised to tourists living in the Bournemouth postcode area, and cannot be generalised to all UK tourists. However, the findings and conclusions of this research are still relevant and useful in providing an indicative understanding of the relationship between UK tourists and engagement with climate change considerations in a holiday context. The

internal validity of this research has been enhanced by triangulating the findings of the focus group research with the results of the questionnaire survey. Examination of and reflection on the findings of the qualitative and quantitative data showed that there was a consistency of results between the two data collection methods in relation to the objectives of the research. By incorporating the findings of the focus group research in the design of the questionnaire, this also helped ensure the reliability of the research.

## **8.7 SUGGESTIONS FOR FURTHER RESEARCH**

There are a number of areas for further research that have materialised out of this study. This research has identified the key barriers preventing tourists from changing their holiday behaviour in order to have lower impacts on climate change. Further research could be conducted to ascertain why these barriers are so strong. This research could then lead to further investigation into how these barriers can be targeted and eventually overcome. Qualitative research would provide an excellent opportunity to generate a greater insight into the facets of each barrier and to probe for ways that the barriers may be reduced or even nullified. Some of the structural barriers to action, in particular, will be very difficult to overcome without a radical change in tourists' attitudes towards holidays.

This research has revealed that it is the most frequent overseas holiday takers that have the lowest levels of awareness of the impacts of holidays on climate change, are less likely to think about climate change impacts when planning their holidays, and are the most resistant to changing their holiday behaviour. Further research could be undertaken, specifically with these frequent travellers, in order to investigate whether engagement with climate change can be increased and changes in holiday behaviour initiated. If the GHG emissions from the tourism industry are to be reduced in the future, then changing the attitudes and behaviour of the most frequent overseas holiday takers is essential to this goal.

As discussed in Chapter 2, tourism's contribution to climate change is dominated by emissions from air travel. Further research could be conducted on the barriers identified in this study that directly relate to air travel; in particular flying as a habitual practice. The findings of both the focus group research and questionnaire survey established that, for the majority of tourists, flying has become an automatic choice of transport mode for travelling to holiday destinations. The habitual nature of flying is so strong that alternatives to air travel are not even considered when planning holidays. More research is needed to explore slow travel (low carbon) tourism transport practices and to identify how these might be more strongly embraced.

Another important area for further research concerns current and future Government policy. This study highlighted the fact that lack of action by the Government in tackling climate change is a barrier to tourists changing their holiday behaviour. Section 8.5 of this chapter discussed the practical contribution of the findings from this study for policymakers; in particular how the Government could use the results of this research to tackle the barriers to behavioural change and influence holiday decisions. What is not clear throughout this study is what the UK Government's position is with regards to reducing the impacts of the tourism industry's contribution to climate change and, specifically, whether they desire to see a decrease in the volume of air travel. The Draft Aviation Framework (Department for Transport 2012) states that the Government's primary objective is to achieve long term economic growth and acknowledges the major contribution aviation makes to the economy. The framework also concedes that current airport capacity is insufficient to maintain the UK's international connectivity and will need to be expanded in the future. It is possible that the absence of a clear policy direction with regards discouraging the increasing use of air travel could be a factor impacting on tourists' reluctance to change holiday behaviour and is thus an area justifying further research.

The focus of this research has been on UK tourists' engagement with climate change. The findings and implications of this study are likely to be relevant for a number of other countries in the developed world. Whilst some research has already been undertaken on tourists' attitudes towards climate change in other

European countries and in Australasia, further research could be undertaken specifically examining barriers preventing behavioural change. In addition, Chapter 2 highlighted the high growth in outbound international tourism taking place in many developing countries, particularly the BRIC nations. The growth in international holidays and air travel in these countries has been extremely high over the last few years, and is predicted to continue increasing at rates high above countries in the developed world. With very little research, to date, conducted on tourism and climate change impacts in developing countries, this presents an opportunity to explore tourists' awareness of and attitudes towards holidays and climate change. A comparison of the awareness levels and attitudes of tourists in developed and developing countries towards climate change and changing holiday behaviour could provide valuable insights into the size and scale of the challenge facing policymakers in reducing carbon emissions from tourism at the global level.

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## **Appendix 4.1: Focus groups topic guide**

### **Overview of discussion guide:**

Introduction (5 min)

Around the table – participant introductions (5 min)

Introductory question – What do you know or understand about climate change?  
(10 min)

Listing exercise – List the ways you think your lifestyle might contribute to climate change.

Follow-up question – Do you do anything to reduce your impact on climate change? (15 min)

Holidays and climate change (Part 1): Ranking exercise – What are the important factors you consider when making decisions about where to go on holiday? (10 min)

Holidays and climate change (Part 2) – How might your holidays impact on climate change? (10 min)

Potential barriers to climate change featuring more prominently in holiday decision-making – Things to discuss: Low-cost airlines, carbon offsetting, responsible tourism/travel, eco-tourism, etc. (15 min)

Concluding remarks – any questions from participants, thank everyone (5 min)

Total 1hr 15 min (approx)

## **Draft Discussion Guide:**

### **Introduction**

Welcome everyone and thank them for coming.

Introduce myself.

Overview of topic (the focus group will be discussing climate change).

Re-emphasise that no specific knowledge is required.

Tape recording – so as to not miss comments – and confidentiality – no names used.

Mobile phones switched to silent?

I'm interested in your thoughts and views, so no right or wrong answers.

Differing views very welcome.

Explain name tents - you can talk to each other directly, you don't have to go through me.

Help yourself to tea and coffee during the discussion.

### **Around the table**

“Let's begin. To start with, I'd like to go around the table and for you to introduce yourselves. If you could just say your name and a little bit about you, for example what you enjoy doing in your spare time.”

### **Introductory question:**

“I'd like to start by asking a really open question, and that is”:

#### **Q.1 “What do you know or understand about climate change?”**

*Probe if greenhouse gases are not mentioned - (“Are you familiar with the term Greenhouse Gases?”) Check what is understood by this term.*

*Probe if carbon emissions are not mentioned - (“Are you familiar with the term ‘Carbon Emissions?’”) Check what is understood by this term.*

If any group member has not said anything in response to this question, then ask directly for their views before moving on to the next question.

**Transition question:**

“Now you’ve established as a group what climate change means to you, I’d like you to take the pen and paper in front of you and:”

**Task one:**

**Q.2 “List the ways you think your lifestyle might contribute to climate change”**

*(If further direction is required, say – “the things that you do or consume that might have an impact on climate change through the production of greenhouse gases”)*

After a couple of minutes thinking time, go around the table getting each person’s examples. The moderator will write down each thing mentioned **on his notepad** and keep a tally. Moderator to explain that participants should read out all the things on their list, even if it has already been mentioned.

**Follow-up Transition question:**

“Bearing in mind some of the ways that your lifestyle might contribute to climate change...”

**Q.3 “Does anyone do anything to reduce their impact on climate change?”**

*Eventually prompt if no examples are given.*

*Also prompt if very few examples are given.*

*Probe for agreement if necessary: (For example: If someone says, “switching off electrical appliances not in use”, the moderator can say, “do you understand why*

*John might do this?” and “does anyone else switch off electrical appliances at the plug when not in use?”)*

**Key questions:**

**Holidays and climate change (Part 1)**

Depending on previous answers and discussion, moderator either says:

“So far the discussion has centred on people’s home and work lives. I’d now like you to think about holidays for a moment.”

Or:

“Holidays and/or air travel have been mentioned a couple of times during our group discussion. I’d now like you to focus in particular on your holidays.”

**Task two:**

**Q.4 “If you’ve been on an overseas holiday in the last couple of years, could you please write down on your paper where you went on your last overseas holiday?”**

**If you haven’t been abroad for a while, could you please write down where you went on your last holiday in Britain?”**

[Pause]

**Below this, I’d like you to write down the important things that you considered when making the decision to go on this holiday.”**

*“What were the factors that influenced you to take this holiday?”*

Participants are given a few minutes to make a list.

When the participants have finished, the moderator can ask people to call out, one at a time, the things written down on their lists. The moderator will write down each thing mentioned on a piece of card. Similar factors can be grouped together on the same card (for example, cost and price). When all the listed things have been mentioned, the moderator will ask the group to collectively rank them in terms of importance as a holiday decision-making factor. **Only rank if climate change or environmental considerations are mentioned.** If not, move on to **Q.5a.**

After this is completed, the moderator will read out the list for the benefit of the tape recorder and to check the participants are happy with their decision.

### **Holidays and climate change (Part 2)**

Depending on whether climate change is mentioned in the list of holiday decision-making factors and, if it is, how highly it is ranked, the moderator says either:

“Climate change has been mentioned as an important factor in your holiday making decisions. I’d now like to ask you to discuss in more detail.”

**Q.5 “The ways in which your holidays might impact on climate change?”**

Or:

**Q.5a “Climate change has not been mentioned in the list of things you consider when deciding where to go on holiday.”**

**“Does climate change feature at all in your holiday decision-making?”**

“Can I ask you to consider:”

**Q.5b “In what ways might your holidays impact on climate change?”**

*Probe if necessary*

## **Potential barriers to climate change considerations**

[If climate change is not an important factor in holiday decision-making, how can its significance be increased?]

“I would now like to hear your views on a few things associated with holidays:”

**Q.6a “Firstly, what are your thoughts on low-cost airlines?”**

**Q.6b “What are your thoughts on carbon offsetting schemes?”**

**Q.6c “If the Government tried to limit your flights, through taxes or quotas for example, what would your thoughts be?”**

**Q.6d “What are your thoughts on Responsible tourism or travel?”**

**Q.6e “What are your thoughts on eco-tourism holidays?”**

## **Conclusion**

“We’ve finally come to the end of my questions.”

“I would welcome your feedback.” –

“Is there anything that I have missed out of this discussion that you would have liked included?”

Or “Is there anything you would have liked me to have done differently?”

“If anyone would like a copy of the transcripts of this focus group, please contact me in a couple of weeks time (participants have my business card).”

“Before we finish, does anyone have any questions?”

“Thank you very much for your time today. Before you leave I will hand out the Marks & Spencer vouchers. Could I please ask you to sign this sheet to acknowledge your receipt of the vouchers.”

## Appendix 4.2: Draft version of questionnaire used in pre-test

### Holidays and Climate Change Questionnaire

The following questions relate to holidays and climate change. You do not need any specific knowledge of climate change to complete the questionnaire. There are no right or wrong answers to the questions. It is your opinions that are important and all views are relevant to this study. Please complete all the sections of the questionnaire. All the information that you provide will be kept confidential and anonymous.

Overseas holidays include all overnight trips taken outside of the UK for leisure purposes, including main holidays, short breaks, and visits to family and friends. Climate change (also known as global warming) refers to the increases in global average air and ocean temperatures as a result of human activity.

#### **SECTION A: Your holidays**

This section contains questions relating to the holidays that you have taken.

##### **1. Have you ever been on an overseas holiday?**

Yes	No

If you answered 'Yes' please continue to Question 2

If you answered 'No' please move on to Question 5 in SECTION B

##### **2. How many overseas holidays have you taken in the last 3 years? \_\_\_\_\_**

##### **3. Have you visited countries in the following continents on overseas holidays in the last 3 years?**

	Yes	No
Europe (other than countries in the UK)		
North America		
South America		
Africa		
Asia		
Australasia		
Antarctica		

##### **4. What modes of transport have been the main method of travel to your overseas holiday destinations in the last 3 years? (Please tick all that you have used)**

Plane	
Train	
Car	
Coach	
Ferry	
Other (please state)	

## SECTION B: Your thoughts on climate change

This section contains questions relating to your views on climate change.

### 5. In your opinion, how large or small is the contribution of the following to climate change?

Please tick one box in each row.	Very Large	Large	Uncertain	Small	Very Small
Heating homes					
Use of electrical products in home					
Driving a car					
Flying/air travel					
Using public transport					
Using aerosol cans					
Going on holidays overseas					
Packaging on products					
Food imported to the UK from overseas countries					

### 6. Thinking now specifically about holidays, how large or small is the contribution of the following to climate change?

Please tick one box in each row.	Very Large	Large	Uncertain	Small	Very Small
Heating used in tourist accommodation					
Air conditioning used in tourist accommodation					
Water used in tourist accommodation					
Activities engaged in whilst on holiday					
Eating at restaurants					
Air travel/flying to the destination					
Train travel to the destination					
Car driving to the destination					
Coach travel to the destination					
Ferry travel to the destination					

## SECTION C: Your holiday decisions and climate change

This section contains questions relating to how climate change may or may not influence in some way your holiday decisions.



**7. When planning your holidays, do you think about the impacts your holidays might have on climate change?**

Yes	No

If you answered 'Yes' please continue to Question 8

If you answered 'No' please move on to Question 9

**8. Please explain in the box below how your thoughts about the impacts of holidays on climate change influence your holiday planning:**

Please move on to Question 10 in SECTION D.

**9. If you answered 'No' to Question 7, please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Thoughts on climate change just don't enter my mind when planning holidays					
I do not consider climate change as being important when planning my holidays					
I do not know how climate change is linked with holidays					
My holidays do not have any impact on climate change					
Thoughts about climate change are in the back of my mind but do not influence my decisions					
I think about climate change in my home life but not while I'm planning my holidays					

## SECTION D: Your thoughts on holidays

This section contains questions relating to your thoughts on holidays and climate change.

**10. Can you please state your levels of agreement or disagreement with the following statements that relate to holidays and impacts on climate change:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Tourists should fly less					
Tourists should take fewer holidays a year of longer duration					
Tourists should use a carbon offsetting scheme					
Tourists should actively seek accommodation providers that have a green/environmental policy					
The Government should increase taxes on airline tickets to reflect the environmental costs of flights					
The Government should introduce quotas limiting the number of flights a tourist can take in a year					

**11. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
I believe that climate change is a serious threat to the future of our planet					
Any actions an individual tourist can take will be insignificant on a global problem like climate change					
Aeroplanes will be invented whose emissions do not contribute to climate change					
I am prepared to make substantial changes to the way I take holidays for climate change reasons					
Other people's holidays contribute more to climate change than my own					
I am greatly concerned by climate change issues					
There is considerable debate amongst scientists as to whether climate change is happening					
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations					
By taking fewer flights a year I will reduce my impact on climate change					
Scientists will find a way to prevent climate change from happening					
I believe that my holidays have some affect on climate change					
Travelling by train to overseas holiday destinations takes too much time					

**12. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
I automatically think of flying when planning the travel part of my holidays					
The Government is not doing enough to tackle climate change					
Alternatives to flying are not offered by holiday companies					
If a few people begin to change their holiday behaviour others will follow					
Flying is the cheapest way to travel to holiday destinations					
Going on holidays overseas brings many positive benefits to tourist destinations					
Tourists have a choice of whether to fly or use alternative transport modes to reach their holiday destinations					
Businesses should do more to tackle climate change					
It is easy to find out which hotels attempt to minimise their environmental impacts					
It feels normal to take frequent overseas holidays					
Travelling by train is more convenient than flying to overseas holiday destinations					
It does not matter what impacts my holidays have on climate change if I try to reduce my carbon footprint in my home life					
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change					
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs					
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights					
When planning holidays, the carbon footprint of different holidays is not made clear to tourists					
It is difficult to avoid flying when taking overseas holidays					
Airlines rather than passengers should be responsible for paying environmental taxes					
Travelling by train to overseas holiday destinations is too expensive					
If I protect the environment in other ways, I do not need to worry about the impacts of my holidays on climate change					
I like talking to my friends and family about the places I have visited on overseas holidays					
Flying is the fastest way to travel to overseas holiday destinations					
I try to minimise my carbon footprint					
Travel agents and other holiday companies could do more to promote environmentally friendlier holidays					

## SECTION E: Changes to your lifestyle

This section contains questions relating to your actions on holiday and at home.

**13. Please read the statements below and tick the relevant box if the action is something you already do or intend to do in the future for climate change reasons:**

Please tick one box in each row.	I already do this	I intend to do this in the future	I do not intend to do this
Fly less often			
Stop flying all together			
Use trains for short-haul holiday trips			
Take fewer holidays a year of longer duration			
Take more short-haul holidays and fewer long-haul holidays			
Only take holidays in the UK			
Use ethical/responsible tour operators			
Use a carbon offsetting scheme			
Actively seek accommodation providers that have a green/environmental policy			
Use public transport whilst on holiday			
Purchase locally produced goods whilst on holiday			

**14. Moving away from thinking about holidays for a moment, please read the statements below relating to everyday activities and tick the relevant boxes regarding your actions:**

Please tick one box in each row.	I already do this	I intend to do this in the future	I do not intend to do this
Recycle household waste			
Use re-usable bags for your shopping			
Buy fair trade products			
Buy locally produced products			
Use low energy lightbulbs			
Switch electrical appliances off when not in use rather than leaving them on standby			
Make efforts to reduce water consumption in the home			
Make efforts to reduce electricity usage in the home			
Turn the thermostat on the heating to a lower temperature			
Improve the insulation in your home			
Reduce the number of car journeys made			
Buy a car with lower carbon emissions			
Use public transport more often			
Join a local conservation group			
Support environmental action groups/charities			

**15. If there is anything you would like to add on the subject of holidays and/or climate change, please use the box provided below:**

--

**SECTION F: About yourself**

In this final section of the questionnaire, I would like to ask you a few questions about yourself and your family to help classify your answers statistically. I would just like to repeat again that all the answers you provide will remain confidential and anonymous.

**16. Are you?**

Male	Female

**17. In which age group are you?**

16-24	
25-34	
35-44	
45-54	
55-64	
65-74	
75+	

**18. Are there any children in your household?**

Yes	No

**19. What is the highest level of education you have completed?**

No formal qualifications	
O-Level/ CSE/ GCSE	
A-Level or equivalent	
Higher National Diploma or equivalent	
University degree or equivalent	
Post-graduate qualification	

**20. Are you currently?**

Retired	
Studying	
Not employed	
Working full-time	
Working part-time	
Looking after the home full-time	

**21. What is your occupation? (If retired or not working please give your last job)**

\_\_\_\_\_

Thank you for completing this questionnaire. Your participation has been most valuable.

### Appendix 4.3: Feedback form for pre-test questionnaire

#### Feedback form for questionnaire:

Were there any questions or responses that were unclear or that you didn't understand?
How many minutes did it take you to complete the questionnaire?
Did you see any mistakes in the questionnaire?
Do you have any suggestions for improving the questionnaire?
Do you have any general comments or thoughts on the questionnaire?

Thank you!!

## Appendix 4.4: Draft version of questionnaire used in pilot study

### Overseas Holidays and Climate Change Questionnaire

The following questions relate to holidays and climate change. You do not need any specific knowledge of climate change to complete the questionnaire. There are no right or wrong answers to the questions. It is your opinions that are important and all views are relevant to this study. Please complete all the sections of the questionnaire. All the information that you provide will be kept confidential and anonymous.

Overseas holidays include all overnight trips taken outside of the UK for leisure purposes, including main holidays, short breaks, and visits to family and friends.

#### SECTION A: Your holidays

##### 1. Have you ever been on an overseas holiday?

Yes	No

If you answered 'Yes' please continue to Question 2

If you answered 'No' please move on to Question 5 in SECTION B

##### 2. How many overseas holidays have you taken in the last 3 years? \_\_\_\_\_

If you have not taken any overseas holidays in the last 3 years please move on to Question 5 in SECTION B

##### 3. Have you visited countries in the following continents on overseas holidays in the last 3 years? (Please tick all that you have visited)

Europe (other than countries in the UK)	
North America	
South America	
Africa	
Asia	
Australasia	
Antarctica	

##### 4. What modes of transport have been the main method of travel to your overseas holiday destinations in the last 3 years? (Please tick all that you have used)

Plane	
Train	
Car	
Coach	
Ferry	
Other (please state)	



## SECTION B: Your thoughts on climate change

5. In your opinion, how large or small is the contribution of the following to climate change?

Please tick one box in each row.	Very Large	Large	Medium	Small	Very Small	Uncertain
Heating homes						
Use of electrical products in home						
Driving a car						
Flying/air travel						
Using public transport						
Using aerosol cans						
Going on holidays overseas						
Packaging on products						
Food imported to the UK from overseas countries						

6. Thinking now specifically about holidays, how large or small is the contribution of the following to climate change?

Please tick one box in each row.	Very Large	Large	Medium	Small	Very Small	Uncertain
Heating used in tourist accommodation						
Air conditioning used in tourist accommodation						
Water used in tourist accommodation						
Eating at restaurants						
Air travel/flying to the destination						
Train travel to the destination						
Car driving to the destination						
Coach travel to the destination						
Ferry travel to the destination						

**SECTION C: Your holiday decisions and climate change**

**7. When planning your holidays, do you think about the impacts your holidays might have on climate change?**

Yes	No

If you answered 'Yes' please continue to Question 8  
 If you answered 'No' please move on to Question 9

**8. Please explain in the box below how your thoughts about the impacts of holidays on climate change influence your holiday planning:**

Please move on to Question 10 in SECTION D.

**9. If you answered 'No' to Question 7, please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Thoughts on climate change impacts just don't enter my mind when planning holidays					
I do not consider climate change impacts as being important when planning my holidays					
I do not know how climate change is linked with holidays					
My holidays do not have any impact on climate change					
Thoughts about climate change are in the back of my mind but do not influence my holiday decisions					

**SECTION D: Your thoughts on holidays and climate change**

**10. Can you please state your levels of agreement or disagreement with the following statements that relate to holidays and impacts on climate change:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Tourists should fly less					
Tourists should take fewer holidays a year of longer duration					
Tourists should use a carbon offsetting scheme					
Tourists should actively seek accommodation providers that have a green/environmental policy					
The Government should increase taxes on airline tickets to reflect the environmental costs of flights					
The Government should introduce quotas limiting the number of flights a tourist can take in a year					

**11. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Flying is the fastest way to travel to overseas holiday destinations					
Flying is the cheapest way to travel to overseas holiday destinations					
Flying is more convenient than travelling by train or coach to overseas holiday destinations					
Travelling by train or coach to overseas holiday destinations takes too much time					
I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying					
For most overseas holiday destinations, flying is the only realistic travel option					
Alternatives to flying are not offered by travel agents and tour operators					
When planning holidays, the carbon footprint of different holidays is not made clear to tourists					
It is easy to find out which hotels attempt to minimise their environmental impacts					
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change					

**12. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Any actions an individual tourist can take will be insignificant on a global problem like climate change					
I believe that climate change is a serious threat to the future of our planet					
I am prepared to make substantial changes to the way I take holidays for climate change reasons					
If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much					
Going on overseas holidays is a normal thing to do					
I automatically think of flying when planning the travel part of my holidays					
I try to minimise my carbon footprint					
Other people's holidays contribute more to climate change than my own					
I am interested in protecting the environment					
I usually explore alternatives to air travel when planning holidays					
I believe that my holidays have some affect on climate change					
If a few people begin to change their holiday behaviour others will follow					
I like talking to my friends and family about the places I have visited on overseas holidays					
By taking fewer flights a year I will reduce my impact on climate change					
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change					

**13. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
The Government is not doing enough to tackle climate change					
Airlines rather than passengers should be responsible for paying environmental taxes					
Scientists will find a way to prevent climate change from happening					
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs					
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations					
There is considerable debate amongst scientists as to whether climate change is happening					
Businesses in the tourism industry should do more to tackle climate change					
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights					
Aeroplanes will be invented whose emissions do not contribute to climate change					

**SECTION E: Changes to your lifestyle**

**14. Please read the statements below and tick the relevant box if the action is something you already do or intend to do in the future for climate change reasons:**

Please tick one box in each row.	I already do this	I intend to do this in the future	I do not intend to do this
Fly less often			
Stop flying all together			
Use trains or coach for short-haul holiday trips			
Take fewer holidays a year of longer duration			
Take more short-haul holidays and fewer long-haul holidays			
Only take holidays in the UK			
Use ethical/responsible tour operators			
Use a carbon offsetting scheme			
Actively seek accommodation providers that have a green/environmental policy			
Use public transport whilst on holiday			
Purchase locally produced goods whilst on holiday			

**15. Moving away from thinking about holidays for a moment, please read the statements below relating to everyday activities and tick the relevant boxes regarding your actions:**

Please tick one box in each row.	I already do this	I intend to do this in the future	I do not intend to do this
Recycle household waste			
Use re-usable bags for your shopping			
Use low energy lightbulbs			
Switch electrical appliances off when not in use rather than leaving them on standby			
Make efforts to reduce water consumption in the home			
Turn the thermostat on the heating to a lower temperature			
Improve the insulation in your home			
Reduce the number of car journeys made			
Buy a car with lower carbon emissions			
Use public transport more often			
Join a local conservation group			
Support environmental action groups/charities			

**16. If there is anything you would like to add on the subject of holidays and/or climate change, please use the box provided below:**

## SECTION F: About yourself

This final section contains a few questions about yourself in order to help classify your answers statistically. I would just like to repeat again that all the answers you provide will remain confidential and anonymous.

### 17. Are you?

Male	Female

### 18. In which age group are you?

16-24	
25-34	
35-44	
45-54	
55-64	
65-74	
75+	

### 19. Are there any children in your household?

Yes	No

### 20. What is the highest level of education you have completed?

No formal qualifications	
O-Level/ CSE/ GCSE	
A-Level or equivalent	
Higher National Diploma or equivalent	
University degree or equivalent	
Post-graduate qualification	

### 21. Are you currently?

Retired	
Studying	
Not employed	
Working full-time	
Working part-time	
Looking after the home full-time	

Thank you for completing this questionnaire. Your participation has been most valuable.

## Appendix 4.5: Cover letter used in pilot study

September 2010

Dear Sir/Madam,

My name is Andrew Hares and I am a PhD researcher at Bournemouth University. I am carrying out a survey on people's views on the climate change impacts of holidays.

I need the help of your household in completing the attached questionnaire. Your property is in one of a number of postcodes that were randomly selected for this study. If there is more than one occupier, please would the adult who has the next birthday complete the questions.

It is your thoughts and views that I am interested in. You do not need to have taken any overseas holidays or have any knowledge of climate change in order to complete the questionnaire.

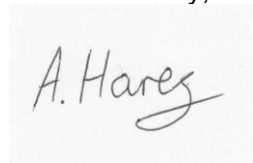
This is an academic study and not a marketing or sales survey. All the information that you provide in the questionnaire will be kept completely confidential and anonymous.

Your cooperation in filling out this questionnaire is essential to the success of this research. The questionnaire is likely to take approximately 10 to 15 minutes to complete.

I will collect the questionnaire on **Friday** of this week. If you will be out or do not wish to be disturbed, please leave the completed form in a plastic bag on your doorstep.

Thank you for your help.

Yours faithfully,

A handwritten signature in black ink that reads "A. Hares". The signature is written in a cursive style and is placed on a light grey rectangular background.

Andrew Hares

PhD Researcher  
School of Tourism  
Bournemouth University



## Appendix 4.6: Reminder letter used in pilot study

September 2010

Dear Sir/Madam,

I delivered a questionnaire to your home on Tuesday of this week. The questionnaire is about people's views on holidays and climate change. It is part of an academic research study at Bournemouth University, and is not a marketing or sales survey.

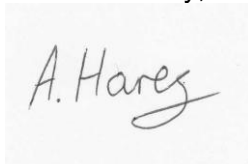
The questionnaire should only take about 10 to 15 minutes to complete and all the information that you provide will be kept completely confidential and anonymous.

In the covering letter that accompanied the questionnaire, I said that I would be calling to collect it today. As I have not been able to collect it from you today, please could you return the completed questionnaire in the stamped addressed envelope attached to this letter.

Your participation in filling out this questionnaire is very important to the success of this research. I would be most appreciative if you could complete and return the survey in the postage paid envelope provided.

Thank you in advance for your support.

Yours faithfully,

A handwritten signature in cursive script that reads "A. Hares". The signature is written in dark ink on a light-colored, slightly textured background.

Andrew Hares

PhD Researcher  
School of Tourism  
Bournemouth University

## Appendix 4.7: Questionnaire used in main survey

### Overseas Holidays and Climate Change Questionnaire

The following questions relate to holidays and climate change. You do not need any specific knowledge of climate change to complete the questionnaire. There are no right or wrong answers to the questions. It is your opinions that are important and all views are relevant to this study. Please complete all the sections of the questionnaire. All the information that you provide will be kept confidential and anonymous.

Overseas holidays include all overnight trips taken outside of the UK for leisure purposes, including main holidays, short breaks, and visits to family and friends.

#### SECTION A: Your holidays

##### 1. Have you ever been on an overseas holiday?

Yes	No

If you answered 'Yes' please continue to Question 2

If you answered 'No' please move on to Question 5 in SECTION B

##### 2. How many overseas holidays have you taken in the last 3 years? \_\_\_\_\_

If you have not taken any overseas holidays in the last 3 years please move on to Question 5 in SECTION B

##### 3. Have you visited countries in the following continents on overseas holidays in the last 3 years? (Please tick all that you have visited)

Europe (other than countries in the UK)	
North America	
South America	
Africa	
Asia	
Australasia	
Antarctica	

##### 4. What modes of transport have been the main method of travel to your overseas holiday destinations in the last 3 years? (Please tick all that you have used)

Plane	
Train	
Car	
Coach	
Ferry	
Cruise ship	
Other (please state)	

**SECTION B: Your thoughts on climate change**

**5. In your opinion, how large or small is the contribution of the following to climate change?**

Please tick one box in each row.	Very Large	Large	Medium	Small	Very Small	Uncertain
Heating homes						
Use of electrical products in home						
Driving a car						
Flying/air travel						
Using public transport						
Using aerosol cans						
Going on holidays overseas						
Packaging on products						
Food imported to the UK from overseas countries						

**6. Thinking now specifically about holidays, how large or small is the contribution of the following to climate change?**

Please tick one box in each row.	Very Large	Large	Medium	Small	Very Small	Uncertain
Heating used in tourist accommodation						
Air conditioning used in tourist accommodation						
Water used in tourist accommodation						
Eating at restaurants						
Air travel/flying to the destination						
Train travel to the destination						
Car driving to the destination						
Coach travel to the destination						
Ferry travel to the destination						

**SECTION C: Your holiday decisions and climate change**

**7. When planning your holidays, do you think about the impacts your holidays might have on climate change?**

Yes	No

If you answered 'Yes' please continue to Question 8  
 If you answered 'No' please move on to Question 9

**8. Please explain in the box below how your thoughts about the impacts of holidays on climate change influence your holiday planning:**

Please move on to Question 10 in SECTION D.

**9. If you answered 'No' to Question 7, please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Thoughts on climate change impacts just don't enter my mind when planning holidays					
I do not consider climate change impacts as being important when planning my holidays					
I do not know how climate change is linked with holidays					
My holidays do not have any impact on climate change					
Thoughts about climate change are in the back of my mind but do not influence my holiday decisions					

**SECTION D: Your thoughts on holidays and climate change**

**10. Can you please state your levels of agreement or disagreement with the following statements that relate to holidays and impacts on climate change:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Tourists should fly less					
Tourists should take fewer holidays a year of longer duration					
Tourists should use a carbon offsetting scheme					
Tourists should actively seek accommodation providers that have a green/environmental policy					
The Government should increase taxes on airline tickets to reflect the environmental costs of flights					
The Government should introduce quotas limiting the number of flights a tourist can take in a year					

**11. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Flying is the fastest way to travel to overseas holiday destinations					
Flying is the cheapest way to travel to overseas holiday destinations					
Flying is more convenient than travelling by train or coach to overseas holiday destinations					
Travelling by train or coach to overseas holiday destinations takes too much time					
I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying					
For most overseas holiday destinations, flying is the only realistic travel option					
Alternatives to flying are not offered by travel agents and tour operators					
When planning holidays, the carbon footprint of different holidays is not made clear to tourists					
It is easy to find out which hotels attempt to minimise their environmental impacts					
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change					

**12. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Any actions an individual tourist can take will be insignificant on a global problem like climate change					
I believe that climate change is a serious threat to the future of our planet					
I am prepared to make substantial changes to the way I take holidays for climate change reasons					
If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much					
Going on overseas holidays is a normal thing to do					
I automatically think of flying when planning the travel part of my holidays					
I try to minimise my carbon footprint					
Other people's holidays contribute more to climate change than my own					
I am interested in protecting the environment					
I usually explore alternatives to air travel when planning holidays					
I believe that my holidays have some affect on climate change					
If a few people begin to change their holiday behaviour others will follow					
I like talking to my friends and family about the places I have visited on overseas holidays					
By taking fewer flights a year I will reduce my impact on climate change					
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change					

**13. Can you please state your levels of agreement or disagreement with the following statements:**

Please tick one box in each row.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
The Government is not doing enough to tackle climate change					
Airlines rather than passengers should be responsible for paying environmental taxes					
Scientists will find a way to prevent climate change from happening					
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs					
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations					
There is considerable debate amongst scientists as to whether climate change is happening					
Businesses in the tourism industry should do more to tackle climate change					
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights					
Aeroplanes will be invented whose emissions do not contribute to climate change					

**SECTION E: Changes to your lifestyle**

**14. Please read the statements below and tick the relevant box if the action is something you already do or intend to do in the future for climate change reasons:**

Please tick one box in each row.	I already do this	I intend to do this in the future	I do not intend to do this
Fly less often			
Stop flying all together			
Use trains or coach for short-haul holiday trips			
Take fewer holidays a year of longer duration			
Take more short-haul holidays and fewer long-haul holidays			
Only take holidays in the UK			
Use ethical/responsible tour operators			
Use a carbon offsetting scheme			
Actively seek accommodation providers that have a green/environmental policy			
Use public transport whilst on holiday			
Purchase locally produced goods whilst on holiday			

**15. Moving away from thinking about holidays for a moment, please read the statements below relating to everyday activities and tick the relevant boxes regarding your actions:**

Please tick one box in each row.	I already do this	I intend to do this in the future	I do not intend to do this
Recycle household waste			
Use re-usable bags for your shopping			
Use low energy lightbulbs			
Switch electrical appliances off when not in use rather than leaving them on standby			
Make efforts to reduce water consumption in the home			
Turn the thermostat on the heating to a lower temperature			
Improve the insulation in your home			
Reduce the number of car journeys made			
Buy a car with lower carbon emissions			
Use public transport more often			
Join a local conservation group			
Support environmental action groups/charities			

**16. If there is anything you would like to add on the subject of holidays and/or climate change, please use the box provided below:**



## SECTION F: About yourself

This final section contains a few questions about yourself in order to help classify your answers statistically. I would just like to repeat again that all the answers you provide will remain confidential and anonymous.

### 17. Are you?

Male	Female

### 18. In which age group are you?

16-24	
25-34	
35-44	
45-54	
55-64	
65-74	
75+	

### 19. Are there any children in your household?

Yes	No

### 20. What is the highest level of education you have completed?

No formal qualifications	
O-Level/ CSE/ GCSE	
A-Level or equivalent	
Higher National Diploma or equivalent	
University degree or equivalent	
Post-graduate qualification	
Other (please state)	

### 21. Are you currently?

Retired	
Studying	
Not employed	
Working full-time	
Working part-time	
Looking after the home full-time	

Thank you for completing this questionnaire. Your participation has been most valuable.

## Appendix 4.8: Cover letter used in main survey

October 2010

Dear Sir/Madam,

My name is Andrew Hares and I am a PhD researcher at Bournemouth University. I am carrying out a survey on people's views on the climate change impacts of holidays.

I need the help of your household in completing the attached questionnaire. Your property is in one of a number of postcodes that were randomly selected for this study. If there is more than one occupier, please would the adult who has the next birthday complete the questions.

It is your thoughts and views that I am interested in. You do not need to have taken any overseas holidays or have any knowledge of climate change in order to complete the questionnaire.

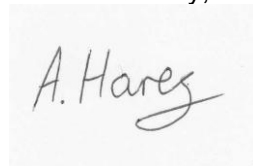
This is an academic study and not a marketing or sales survey. All the information that you provide in the questionnaire will be kept completely confidential and anonymous.

Your cooperation in filling out this questionnaire is essential to the success of this research. The questionnaire is likely to take approximately 10 to 15 minutes to complete.

I will collect the questionnaire on **Thursday** of this week. If you will be out or do not wish to be disturbed, please leave the completed form in a plastic bag on your doorstep.

Thank you for your help.

Yours faithfully,

A handwritten signature in black ink that reads "A. Hares". The signature is written in a cursive style and is placed on a light grey rectangular background.

Andrew Hares

PhD Researcher  
School of Tourism  
Bournemouth University

## Appendix 4.9: Reminder letter used in main survey

October 2010

Dear Sir/Madam,

I delivered a questionnaire to your home on Monday of this week. The questionnaire is about people's views on holidays and climate change. It is part of an academic research study at Bournemouth University, and is not a marketing or sales survey.

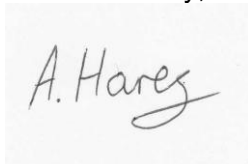
The questionnaire should only take about 10 to 15 minutes to fill in and all the information that you provide will be kept completely confidential and anonymous.

In the covering letter that accompanied the questionnaire, I said that I would be calling to collect it today. As I have not been able to collect it from you today, please could you return the completed questionnaire in the freepost envelope attached to this letter.

Your participation in filling out this questionnaire is very important to the success of this research. I would be most appreciative if you could complete and return the survey in the postage paid envelope provided.

Thank you in advance for your support.

Yours faithfully,

A handwritten signature in black ink that reads "A. Hares". The signature is written in a cursive style and is centered within a light gray rectangular box.

Andrew Hares

PhD Researcher  
School of Tourism  
Bournemouth University

## Appendix 4.10: Bournemouth University Ethics Checklist

### Initial Research Ethics Checklist



**Note:** *All researchers* must complete this brief checklist to identify any ethical issues associated with their research. Before completing, please refer to the BU *Research Ethics Code of Practice* which can be found [www.bournemouth.ac.uk/researchethics](http://www.bournemouth.ac.uk/researchethics). School Research Ethics Representatives (or Supervisors in the case of students) can advise on appropriate professional judgement in this review. A list of Representatives can be found at the aforementioned webpage.

**Sections 1-5 must be completed by the researcher and Section 6 by School Ethics Representative/ Supervisor prior to the commencement of any research.**

1 RESEARCHER DETAILS						
Name	Andrew Hares					
Email	ahares@bournemouth.ac.uk					
Status	<input type="checkbox"/> Undergraduate	<input checked="" type="checkbox"/> Postgraduate			<input type="checkbox"/> Staff	
School	<input type="checkbox"/> BS	<input type="checkbox"/> CS	<input type="checkbox"/> DEC	<input type="checkbox"/> HSC	<input type="checkbox"/> MS	<input checked="" type="checkbox"/> SM
Degree Framework & Programme	PhD					
2 PROJECT DETAILS						
Project Title	The climate change impacts of holidays: Its role in the decisions of tourists					
Project Summary <i>Sufficient detail is needed; include methodology, sample, outcomes etc</i>	A questionnaire survey using a drop and collect method conducted on a random sample of households in the Bournemouth postcode area.					
Proposed Start & End Dates	September to October 2010					
Project Supervisor	Keith Wilkes and Janet Dickinson					
Framework Project Co-ordinator						
3 ETHICS REVIEW CHECKLIST – PART A						
I	Has a health & safety evaluation / risk assessment been conducted?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No			
II	Is approval from an external Research Ethics Committee (e.g. Local Research Ethics Committee (REC), NHS REC) required/sought?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			

<b>III</b>	Is the research solely literature-based?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>IV</b>	Does the research involve the use of any dangerous substances, including radioactive materials?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>V</b>	Does the research involve the use of any potentially dangerous equipment?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>VI</b>	Could conflicts of interest arise between the source of funding and the potential outcomes of the research? (see section 8 of BU Research Ethics Code of Practice).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>VII</b>	Is it likely that the research will put any of the following at risk: Living creatures?  Stakeholders? The environment? The economy?	<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No
<b>VIII</b>	Does the research involve experimentation on any of the following: Animals?  Animal tissues? Human tissues (including blood, fluid, skin, cell lines)? Genetically modified organisms?	<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No
<b>IX</b>	Will the research involve prolonged or repetitive testing, or the collection of audio, photographic or video materials?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>X</b>	Could the research induce psychological stress or anxiety, cause harm or have negative consequences for the participants or researcher (beyond the risks encountered in normal life)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>XI</b>	Will the study involve discussion of sensitive topics (e.g. sexual activity, drug use, criminal activity)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>XII</b>	Will financial inducements be offered (other than reasonable expenses/ compensation for time)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>XIII</b>	Will it be necessary for the participants to take part in the study without their knowledge / consent at the time?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>XIV</b>	Are there problems with the participant's right to remain anonymous?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>XV</b>	Does the research <i>specifically</i> involve participants who may be vulnerable?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>XVI</b>	Might the research involve participants who may lack the capacity to decide or to give informed consent to their involvement?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>4 ETHICS REVIEW CHECKLIST – PART B</b>			
Please give a summary of the ethical issues and any action that will be taken to address these.			
<b>Ethical Issue: None</b>		<b>Action:</b>	

<b>5 RESEARCHER STATEMENT</b>			
I believe the information I have given is correct. I have read and understood the BU Research Ethics Code of Practice, discussed relevant insurance issues, performed a health & safety evaluation/ risk assessment and discussed any issues/ concerns with a School Ethics Representative/ Supervisor. I understand that if any substantial changes are made to the research (including methodology, sample etc), then I must notify my School Research Ethics Representative/ Supervisor and may need to submit a revised Initial Research Ethics Checklist. By submitting this form electronically I am confirming the information is accurate to my best knowledge.			
<b>Signed</b>	Andrew Hares	<b>Date</b>	06/09/10
<b>6 AFFIRMATION BY SCHOOL RESEARCH ETHICS REPRESENTATIVE/ SUPERVISOR</b>			
Satisfied with the accuracy of the research project ethical statement, I believe that the appropriate action is:			
The research project proceeds in its present form		<input checked="" type="checkbox"/> <b>Yes</b>	<input type="checkbox"/> <b>No</b>
The research project proposal needs further assessment under the School Ethics procedure*		<input type="checkbox"/> <b>Yes</b>	<input type="checkbox"/> <b>No</b>
The research project needs to be returned to the applicant for modification prior to further action*		<input type="checkbox"/> <b>Yes</b>	<input type="checkbox"/> <b>No</b>
* The School is reminded that it is their responsibility to ensure that no project proceeds without appropriate assessment of ethical issues. In extreme cases, this can require processing by the School or University's Research Ethics Committee or by relevant external bodies.			
<b>Reviewer Signature</b>	Janet Dickinson	<b>Date</b>	06/09/10
<b>Additional Comments</b>			

## Appendix 4.11: Bournemouth University Risk Assessment Form

### General Risk Assessment Form

Before completing this form, please read the associated guidance on 'I: Health & Safety/Public/Risk Assessment/Guidance'.

Use this form for all risks except from hazardous substances, manual handling & Display Screen Equipment (specific forms are available for these).

If the risk is deemed to be 'trivial' there is no need to formally risk assess.

All completed forms must give details of the person completing the assessment.

Risk assess the activity with its present controls (if any) -then re-assess if action is to be taken and after further controls are put in place.

The completed form should be kept within the School/Service/Department.

<p>1. Describe the Activity being Risk Assessed: Conducting a drop and collect household survey in the Bournemouth postcode area. The researcher will be knocking on people's doors and asking them to complete a survey in their own time. The researcher will not be entering the properties.</p>
<p>2. Location(s): Bournemouth, Poole, Christchurch, Swanage, Ringwood and Wimborne.</p>
<p>3. Persons at potential Risk (e.g. Specific Staff only, General Staff, Students, Public etc.): Just the researcher, Andrew Hares.</p>
<p>4. Potential Hazards i.e. <u>What Could Happen?</u> (NB: List hazards without considering any existing controls): Car accident driving to locations. Physical harm from homeowners. Attacked by dogs. Finger injuries from letterboxes.</p>
<p>5. Control Measures Already In Place: Take due care when driving. Be sure not to enter homes of participants and to walk away from potentially dangerous situations. Not to enter premises where dogs are in the garden. Be careful when posting questionnaires through letterboxes. A log of the researcher's daily movements will be kept with another person and the researcher will check-in and check-out with this person each day. The log will contain information on where the researcher will be carrying out the survey each day of the study.</p>
<p>6. Standards to be Achieved: (ACOPs, Qualifications, Regulations, Industry Guides, Suppliers instructions etc)</p>
<p>7. Are the risks adequately controlled (bearing in mind 4. &amp; 5.)? <b>Write 'Yes' or 'No':</b> Yes If <b>Yes</b>, Step 8: <u>Ensure that those affected are informed of the Risks and Controls:</u> Confirm how you have done this (e.g. written instructions):  Then, complete boxes below and the assessment is finished until the review date(s):</p>

9. Person(s) Who did Assessment:	Andrew Hares	10. Date:	06/09/10	11. Review Date:	06/09/11
12. Checked By:	Janet Dickinson	13. Date:	06/09/10	14. Review Date:	06/09/11

If **No** (to Q7) go to next section and estimate 'Residual Risk'.

Estimating the Residual Risk:  
 15. Choose a category that best describes the degree of harm which could result from the hazard, then choose a category indicating what the likelihood is that a person(s) could be harmed. Check only **ONE** box within the table which matches both of your choices.

Degree of harm likelihood	<b>Slightly Harmful</b> (e.g. minor injuries such as minor cuts/bruises not always requiring first aid)	<b>Harmful</b> (e.g. serious but short-term injuries such as broken bones or curable disease)	<b>Extremely Harmful</b> (e.g. would cause fatality, major long-term injuries or incurable disease)
<b>Highly Unlikely</b>	Trivial Risk <input type="checkbox"/>	Tolerable Risk <input type="checkbox"/>	Moderate Risk <input type="checkbox"/>
<b>Unlikely</b>	Tolerable Risk <input type="checkbox"/>	Moderate Risk <input type="checkbox"/>	Substantial Risk <input type="checkbox"/>
<b>Likely</b>	Moderate Risk <input type="checkbox"/>	Substantial Risk <input type="checkbox"/>	Intolerable Risk <input type="checkbox"/>

16. Then note the advice below on suggested action and timescale	
<b>Residual Risk Level</b>	<b>Action and Timescale</b>
Trivial Risk <input type="checkbox"/>	No action is required and no documentary records need to be kept.
Tolerable Risk <input type="checkbox"/>	No additional controls are required. Consideration may be given to a more cost-effective solution or improvement that imposes no additional cost burden. Monitoring is required to ensure that the controls are maintained
Moderate Risk <input type="checkbox"/>	Efforts should be made to reduce the risk, but the costs of prevention should be carefully measured and limited. Risks reduction measures should be implemented within a defined period. Where the moderate risk is associated with extremely harmful consequences, further assessment may be necessary to establish more precisely the likelihood of harm as a basis for determining the need for improved control measures.
Substantial Risk <input type="checkbox"/>	Work should not be started until the risk has been reduced. Considerable resources may have to be allocated to reduce the risk. Where the risk involves work in progress, urgent action should be taken.
Intolerable Risk <input type="checkbox"/>	Work should not be started or continued until the risk has been reduced. If it is not possible to reduce the risk even with unlimited resources, work has to remain prohibited.



17. If 'Moderate' 'Substantial' or 'Intolerable': What New Control Measures are to be Considered to reduce risk?		18. Referred to:	19. On Date:
20. <u>Ensure those affected are informed of the Risks &amp; Controls</u> Confirm how you have done this e.g. written instructions:			
21. Person(s) Who did Assessment:		22. Date:	23. Review Date:
24. Checked By:		25. Date:	26. Review Date:

## Appendix 5.1: Journal article – Hares et al. (2010)

Hares, A., Dickinson, J. and Wilkes, K., 2010. Climate change and the air travel decisions of UK tourists. *Journal of Transport Geography*, 18, 466-473.

### Climate change and the air travel decisions of UK tourists

#### Abstract

Whilst much effort has been made to communicate to the public the importance of reducing carbon footprints in the home, one area where emissions are growing rapidly and little attempt has been made to increase consumer understanding of the impacts is holidays, particularly those involving air travel. Using focus group research, this paper explores tourists' awareness of the impacts of travel on climate change, examines the extent to which climate change features in holiday travel decisions and identifies some of the barriers to the adoption of less carbon-intensive tourism practices. The findings suggest that many tourists do not consider climate change when planning their holidays. The failure of tourists to engage with the climate change impact of holidays, combined with significant barriers to behavioural change, presents a considerable challenge in moving the tourism industry onto a sustainable emissions path. The findings are discussed in relation to theoretical perspectives from psychology and sociology.

**Keywords:** air travel; climate change, tourism

#### 1. Introduction

Tourism is a highly energy-intensive industry and has only recently attracted attention as an important contributor to climate change through greenhouse gas (GHG) emissions. It has been estimated that tourism contributes 5% of global carbon dioxide emissions (UNWTO, 2007). Studies show that transport may be responsible for over 90% of tourism's overall contribution to global climate change (Gössling, 2002), with air travel dominating these emissions. Gössling and Peeters (2007) conclude that in an average holiday or short break involving air travel, 60-95% of its contribution to global warming will be caused by the flight. The growth, and predicted future growth, in international tourism is a major concern. International tourist arrivals grew to 903 million in 2007 and are forecast to increase to 1.6 billion in 2020 (UNWTO, 2008). International tourism is largely dominated by developed countries. The current tourism trend in these industrialised countries has been described as hyper-mobility (Høyer, 2000) and is characterised by the taking of several short-breaks and longer holidays every year. Global growth rates of air travel have been in the order of 5-6% per year in the period 1970-2000 and are predicted to continue growing at annual rates of 5% until 2020 (Gössling and Peeters, 2007). Estimates suggest that carbon dioxide emissions from air travel could rise to more than 15% of total carbon dioxide emissions from all sources by 2050 (Dubois and Ceron, 2006).

The tourism sector needs to progressively reduce its GHG contributions if it is to move onto a sustainable emissions path. Aviation has been identified as the most important area for reducing these emissions (Peeters et al., 2006). There have been a number of potential changes proposed for reducing the impact of air travel on climate change. These include technological changes, market-based changes and behavioural changes. Emission reductions from technological changes to aircraft engine design could be in the order of 20% by 2050 (Penner et al., 1999), with further potential reductions coming from improvements in air traffic management and operational efficiency. However, even if these emission reductions are achieved the impacts will not be that significant, as the forecasted growth in air travel demand will far outpace the predicted technological efficiencies. There are also limitations with the impacts market-based changes could have on emissions from air travel. Market-based changes, such as taxes on jet fuel or aircraft emissions, are hugely unpopular with the airline industry and politically very difficult to enforce due to the 1950 resolution by the International Civil Aviation Organisation to exempt fuel for international air travel from taxation. Research suggests that even if taxes on jet fuel were introduced, they would have to be very high in order to have a serious impact on the demand for air travel (Olsthoorn, 2001; Tol, 2007). The third of the options, behavioural change, is considered to have the most important role to play in leading to reductions in GHG emissions from air travel associated with tourism (Gössling et al., 2007).

As part of a wider study, this paper reports the findings of exploratory focus group research designed to investigate the role that climate change plays in the holiday and travel decisions of UK tourists. The paper has three objectives: to explore the levels of awareness amongst UK tourists of the impacts travel has on climate change, to establish the extent to which climate change considerations feature in holiday travel decision-making processes, and to investigate the major barriers to UK tourists adopting less carbon-intensive travel practices.

## **2. Climate change and tourist behaviour**

Until recently, there has been very little research undertaken to investigate whether tourists are aware of the impacts that their holidays and travel have on climate change. Several studies report low awareness of the impact of air travel on climate change (Becken, 2007; Gössling et al., 2006; Shaw and Thomas, 2006). In the UK a number of quantitative studies have examined public attitudes towards air travel (Department for Transport, 2002, 2006a, 2008). In the most recent (Department for Transport, 2008) study, 66% of total respondents said they believed that air travel harms the environment, with 44% of these respondents specifically mentioning climate change and 64% saying they would be willing to pay more for air travel in order to reflect the environmental harm. In a quantitative study, that asked directly about climate change, 62% would take fewer flights to reduce impacts (Lorenzoni and Pidgeon, 2006).

For most people, an understanding of climate change is brought about by the media where people are exposed to a variety of conflicting and unreliable views (Becken, 2007). Outside tourism, there are issues generally with climate change action and people have little faith their actions will make a difference, most individuals finding it difficult to disentangle themselves from high carbon lifestyles (Bickerstaff et al., 2008). Becken (2007) suggests that tourists distinguish between tourism travel and everyday life taking more responsibility for climate change in the latter. This could be because people feel they have earned the right to fly and take holidays (Barr et al., 2008). Becken (2007) argues travel has symbolic meaning and people value the freedom, or, as Shaw and Thomas (2006)

suggest, it is seen as a 'right'. There is also evidence of a variety of denial mechanisms that are employed to avoid taking action (Lorenzoni et al., 2007; Stoll-Kleeman et al., 2001).

When it comes to understanding behavioural change, a wide range of conceptual theories have been developed, utilising various social, psychological, subjective and objective variables in order to model consumer behaviour (Jackson, 2005). These theories of behavioural change operate at a number of different levels, including the individual level, the interpersonal level and the community level (Halpern et al., 2004). A number of theories have been designed specifically to examine pro-environmental behaviour, whilst more general consumer behaviour theories have also been used to predict behaviour in a climate change context. Many studies have investigated an inconsistency between people's attitudes and behaviour (Barr, 2004; Blake, 1999; Kollmuss and Agyeman, 2002). This inconsistency is commonly referred to as the attitude-behaviour gap and is particularly prevalent when examining behavioural change related to environmental issues (Nickerson, 2003). Anable et al. (2006) consider this attitude-behaviour gap as one of the greatest challenges facing the climate change agenda. Therefore, identifying these barriers to action is a critical step in facilitating behavioural change.

Other perspectives on the attitude-behaviour gap have emerged from the sociology of consumption, particularly from social practice theory. Spaargaren and van Vliet (2000) argue that social psychological models stress the importance of people's adherence to values and beliefs but are weak on the ways individual action is framed by structures in society. Randles and Mander (2009), for example, question whether behaviour can be causally derived from attitudes at all. They argue that behaviour is socially constituted through a combination of individual agency (beliefs, norms and values regarding action) and interaction with the resources available (physical structures and social rules). The resulting social practices create a "*propensity for 'lock-in' and... an inherent resistance to change*" (p95). Similarly, Adey et al. (2007, p785) suggest that "*aeromobility is now embedded in the global fabric*". Such approaches (re)contextualise behaviour decisions rather than isolate them from the rules and resources which structure actions.

Kollmuss and Agyeman (2002) conclude that the question of what determines pro-environmental behaviour is such a complex one that it cannot be visualised through one single framework or diagram. Anable et al. (2006, p64) concur with this view and state that there is no "*grand unified theory*" that provides a definitive explanation of behavioural change; hence the purpose of this paper is not to apply any particular one of these behaviour theories. Instead, the analysis reflects on theoretical perspectives, offered by psychology and sociology, in relation to the barriers to behavioural change presented by focus group participants.

### **3. Methodology**

Despite the potentially high-risk scenario for the tourism industry and the global environment, relatively little research has been undertaken with respect to tourism and climate change (Becken, 2007; Hunter and Shaw, 2007). Furthermore, much of the research on transport and tourism has been grounded in quantitative geography traditions focused on price elasticity and space/time considerations. However, more recently work has emerged that seeks to develop a nuanced understanding of society's desire for travel (see for example, Adey et al., 2007; Randles and Mander, 2009). Exploratory focus group research was employed

here as it has the potential to highlight important factors and variables that are not evident in the limited tourism and climate change literature and to facilitate a better understanding of how air travel is embedded in tourist practice. It can be argued that focus groups offer a more natural environment than that of individual interviews, as participants are interacting with other people, just as they do in real life (Krueger and Casey, 2000). The literature also suggests that group interaction will lead to a wider range of views, as participants seize and develop on the comments of other group members (Bryman, 2008). Group discussion can result in participants defending and more fully explaining their views, thus providing a greater insight into their thoughts and beliefs. However, there is scope for group bias. To minimise potential group bias individual tasks were integrated with group discussion.

Four focus groups were conducted in Bournemouth, UK. The number of participants in each group ranged between 7 and 10, with 34 participants in total taking part. Each group was relatively homogeneous and the participants were recruited from pre-existing groups. The first group consisted of students (Student Group), the second group consisted of parents with young children (Family Group), the third group consisted of working professionals (Professionals Group) and the fourth group consisted of relatively affluent retirees (Retired Group). The aim was not for a representative sample or to make comparisons between groups, but to cast a wide net to embrace a diversity of understandings and experiences of travel. Whilst potential participants were not screened prior to selection on their income or travel habits, the intention was to recruit people with differing socio-demographic profiles. The Family Group was recruited from a relatively economically deprived area of Bournemouth and, along with the Student Group, contained relatively less affluent participants. The Professionals and Retired Groups contained relatively affluent participants. The results of the focus groups revealed that not only were the participants in the Professionals and Retired Groups regular travellers (more than one overseas trip a year), so were most of the participants in the Student Group. Participants in the Family Group were less frequent travellers, but all had taken at least one holiday in the last two years and all but one of the participants had taken at least one overseas flight in this period.

It has been argued that participants should receive adequate information on the focus group during recruitment, so that they are able to give their informed consent to take part (Bloor et al., 2001). Potential participants were told that the focus group discussion would be about climate change and people's everyday lives. Mention of holidays and travel were deliberately avoided in the recruitment process so as not to create a connection in the participants' minds between holidays and climate change if one did not already exist. By disclosing that climate change was the main theme of the group discussions, the researcher was aware that this could potentially lead to social desirability bias. In addition, there was the possibility that the participants may be more interested in, and knowledgeable about, climate change than the population in general as they volunteered to take part. However, failure to disclose this information would not only have raised concerns regarding covert recruitment methods, it may also have resulted in the recruitment of participants who felt misled and were then unwilling to discuss climate change.

The focus group design consisted of largely open questions and tasks that proceeded from the general to the more specific as follows:

- a) Understanding of climate change (open question)
- b) How lifestyles might impact on climate change (task)

- c) Ways holidays might impact on climate change (open question)
- d) Important factors when planning a holiday (task)
- e) Climate change as a factor in holiday decisions
- f) Barriers to behavioural change

The focus groups were undertaken during summer 2008 and lasted between 1.5 and 2 hours. Each was recorded using digital voice recorders and then transcribed verbatim. Codes were generated inductively from the raw data, rather than deductively from theory and previous research (Boyatzis, 1998), though the material was strongly influenced by the questions asked in the focus groups. Techniques outlined by Ryan and Bernard (2003) were used to discover themes in the data. These included searching for repetitions in the data sets, and searching for similarities and differences by making systematic comparisons across the data. The following two sections discuss the findings of the main focus group themes and relate them to relevant theory.

#### **4. Holiday travel and climate change**

##### **4.1 Understanding of climate change**

The most dominant understanding of climate change was related to changes in weather patterns that participants had personally observed in their lifetime. In particular, milder winters, with very little snowfall over recent years, and wetter summers. Many of the participants were unsure about what climate change is and some were sceptical it was taking place. There was some uncertainty about the human contribution to climate change through the production of greenhouse gases.

*“A lot of controversy at the moment ... whether or not global warming is actually caused by human activity or whether there’s a counter argument it’s actually caused by solar flares and things like that ... there seems to be a lot of completely opposing views”*

Male 4, Professionals Group

There was also confusion between climate change and holes in the ozone layer. Consistent with other recent studies (Anable et al., 2006; Randles and Mander, 2009), whilst general awareness of climate change was quite high, with almost all the participants being familiar with the terms ‘climate change’ and ‘greenhouse gases’, in many cases they did not have a strong understanding of either the causes of climate change or the role that humans, including themselves, are having on the levels of GHGs being released into the atmosphere.

When asked how their lifestyle impacted on climate change, flying was the third most common response (Table 1). After discussing the items on their lists, participants were then asked to make a list of any things they did to reduce their impact on climate change. Many of the participants said that they did these things as much for financial reasons as environmental reasons. Although flying was the third most acknowledged impact on climate change, not one participant mentioned that they do anything to address this in terms of flying less or using alternative transport modes. The other contributions, which related to home life rather than holidays, were all to a certain extent countered (Table 1). The Low-Cost Hypothesis (Diekmann and Preisendörfer, 2003) suggests that environmental concern influences behaviour primarily in situations connected with low cost and little inconvenience for individuals. It is, therefore, unsurprising that the participants in this study report high levels of recycling activity (considered a low-

cost and low-inconvenience domain) but do not report any reductions in their air travel (considered a high-cost and high-inconvenience domain).

**Table 1. Top five contributions to climate change and mitigation measures identified by participants**

<b>Contributions to climate change</b>	<b>Mitigation measures</b>
1. Car driving	Walking or cycling
2. Electrical appliances in home	Minimising electricity leakage
3. Flying	
4. Heating home	Minimising electricity leakage
5. Consumption/disposal of waste	Recycling Don't use plastic bags

In the discussion on holidays and climate change, travel to and from the destination was identified as having the biggest impact on climate change, with particular reference made to flying. However, the most common view expressed in the Retired Group was that their holidays do not have any impact on global climate change. They acknowledged that air travel does produce GHG emissions, but considered the impacts of their own individual actions to be inconsequential and thus a negligible effect on climate change.

#### 4.2. Climate change and holiday travel decision-making

The five most important factors considered by participants when planning their last overseas holiday were:

1. Price/cost
2. Weather
3. Family and friends
4. Minimal travel time
5. Activities

In all the groups, price/cost (except the Retired Group) and minimising travel time were important, which reflects the traditional transport geography analysis (Davidov et al., 2006). In total, across the four groups, more than thirty different factors were mentioned as important elements considered when planning holidays. Even though climate change was clearly the main topic of discussion, not one of the participants identified climate change, or even environmental concerns in general, as a factor they consider when making decisions about their holidays. In a focus group context there is potential for group bias, however, the consistency of this finding across all four groups suggests group bias did not play a role. This questions whether climate change is conceptually linked to tourism at all. One of the dominant psychological models used in the environment and behaviour field is that of the Theory of Planned Behaviour (Ajzen, 1991). In this model attitudes need to be specific to the behaviour in question to bring about affect. This would appear not to be the case and it is suggested that climate change is not in the attitudinal set of tourism decisions for many people. This

questions studies that suggest people are prepared to modify their flying behaviour in response to climate change.

As climate change was not mentioned in the previous discussion, each group was specifically asked whether climate change considerations featured in their thoughts and decisions when they planned their holidays. All but two of the participants said that they did not think about climate change at all even though flying had been widely acknowledged as contributing to climate change earlier in the focus groups.

*"I don't think about it at all ... to be honest I never care"*

Male 5, Student Group

*"I might mention it or I might think about it or joke about it, but really when it comes down to it if I am doing things that are good for the environment like not flying too often its primarily because of the cost basically ... I could dress it up as being about climate change but it's the fact that I can't afford flights that are particularly damaging to the environment rather than anything else"*

Male 2, Student Group

*"I think people are just not aware of it, only people who are active in the care of animals and the trees ... to be honest it doesn't enter my thoughts at all"*

Female 2, Family Group

*"I don't find that important for a holiday ... I think with the flights they've made them so cheap now that would just override any climate change things"*

Male 1, Family Group

*"I have never ever considered climate change with regard to a holiday"*

Male 6, Retired Group

Two participants, both females in their 20s, said that climate change considerations were in the back of their mind when planning their holidays. Both participants had used carbon offsetting schemes, but neither on a regular basis. They also stated that climate change considerations did not alter their holiday decisions in any additional way.

*"I feel a bit guilty about all that and sometimes I do those extra payments but I would still go"*

Female 2, Student Group

Another acknowledges considering climate change when planning day trips in the UK but not overseas holidays.

*"It is in the back of my mind, not particularly so much when I take the odd holiday abroad, but it certainly is on day trips. I feel by using my car I am actually contributing to global warming"*

Male 1, Professionals Group

A number of spontaneous justifications for not thinking about climate change when planning holidays were mentioned in the focus groups and several participants were keen to defend their decisions to fly on a regular basis. Of even



more concern, perhaps, was the fact that a number of younger participants in both the Student and Professionals Groups expressed a view that climate change was actually making them travel more. There was a belief that they should travel as much as possible now, while flights are relatively cheap, and before travel is possibly restricted or made more difficult in the future due to climate change concerns.

*“There is more in the media and it does make me think. But it probably makes me think I should travel more now because I might not have the opportunity ... in twenty years you just won’t be able to get to some of the places that are really accessible now”*

Female 6, Professionals Group

It is therefore evident that some links are made between tourism and climate change but there is much confusion and little impact on behaviour. The data suggest an information deficit. From this, traditional communication models would indicate scope for awareness raising to bring about behavioural changes. However, such an approach is questioned by Randles and Mander (2009) who argue that information campaigns alone are unlikely to bring about change due to the social embeddedness of practice. This is evident in the participants’ habitual choice of flying for overseas holidays. The following section develops this aspect through an exploration of the barriers to behavioural change.

## **5. Barriers to behavioural change**

The final part of the focus group revolved around a number of questions aimed at generating discussion on potential ways that holiday and travel behaviour might change in favour of less carbon-intensive tourism practices. Outlined below are some, but not all, of the barriers identified from this research.

### **5.1 Dismissal of alternative transport modes**

Strong preferences for air travel over alternative travel modes were expressed in all four groups. Flying was considered the only viable option for most holiday destinations and illustrates the extent to which participants were ‘locked-in’ to flying (Randles and Mander, 2009). Trains were dismissed as being too slow and too expensive. France was identified as one of the few overseas holiday destinations that could be reached by train or ferry. In discussions about other holiday destinations, participants said they would only consider flying. Even for holidays within the UK, a number of participants said that they prefer to fly, rather than drive or take the train, confirming a view that trains cannot compete with planes in terms of price or travel time. This criticism of alternative modes reflects the representation that public transport is poor and needs improving in the UK (Dickinson et al., 2009), as the quotes below illustrate.

*“I did manage to take a train on my previous holiday because that was Paris. So I presume that I saved a little bit compared to flying but in general, like everybody says, it’s difficult to avoid flying when you want to go on holiday”*

Male 3, Student Group

*“It’s a problem being on an island here, the quickest way to get somewhere is to fly basically”*

Male 1, Student Group

*“It’s cheaper to fly than it is to drive or take the train ... and so much quicker”*

Female 1, Family Group

*“If there was some investment in the infrastructure of the travel routes, for example in Japan you get on these bullet trains that run on time and obviously they’re carrying a lot more people for the fuel that they use but in England especially there is no investment in that kind of thing, so I don’t think we look far enough to the future in this country, it’s all very short term ... if the public transport system had a better infrastructure then we might all jump on a speed train to Edinburgh as opposed to sitting on a plane or driving”*

Male 3, Professionals Group

The dismissal of alternative transport modes can be conceived as either a structural barrier, in the sense that flying is perhaps the only realistic option to reach long-haul holiday destinations, or a perceived behavioural control barrier (Ajzen, 1991) in that an individual perceives flying as the only option open to them and therefore precludes all other transport options. The extent to which this is a structural or perceived barrier will depend to a great extent on the distance to the destination. This can also be interpreted in a social practices perspective as an interaction with the resources available where much international tourism is institutionally structured around flying. To increase the availability of different transport modes, tourists could choose holiday destinations closer to home. However, the participants were resistant to changing their holiday plans for climate change reasons.

Many participants also seemed to have an affinity with low-cost airlines. There was a widespread view that they have opened up travel to the masses, making overseas holidays accessible and affordable for many. This perception is supported by Nilsson (2009, p126), who states that *“To passengers, low-cost carriers have reduced fares and improved opportunities to travel”*. Almost all the participants in the Student, Family and Professionals Groups claimed that the advent of low-cost airlines had enabled them to take more overseas holidays.

*“They give accessibility to people to travel at an affordable cost. I think back years ago when I was a kid, we never thought of going abroad because our family could never afford that, and suddenly everyone can get on a plane and go somewhere”*

Female 5, Family Group

*“I didn’t get on a plane until I was sixteen, and I think in the last twelve years I probably do at least ten journeys on a plane a year now”*

Female 6, Professionals Group

The repeated use of air travel as the preferred transport mode for holiday taking could be considered as habitual behaviour for these participants. Studies show that frequent past behaviour can have a significant effect on future behaviour (Ouellette and Wood, 1998). The frequency with which the participants of these three groups are using low-cost air travel may well act as a barrier to the adoption, or even consideration, of alternative transport modes in the future. In the Retired Group, low-cost airlines were not used that frequently, although the participants still flew regularly. The participants in this group preferred what they considered to be the more sociable flight times and comfort levels of scheduled airlines. As this group was also the most affluent, the cost of holidays was much less of an

issue for them. Despite preferring scheduled airlines, participants in this group still had a very favourable view of low-cost airlines, as they believed low-cost airlines had introduced necessary competition to the marketplace and were largely responsible for bringing down the cost of flying in general.

Similar positive views of low-cost air travel were also exhibited by the participants in a study by Shaw and Thomas (2006). Despite the negative climate change and environmental consequences associated with flying, it appears that airlines are held in a positive light by many of the focus group participants who took part in this research.

## 5.2 Importance of holidays

The second barrier comes in the form of the value or importance that many of the participants placed on holidays. There was a strong reluctance across all groups to consider changing their tourism behaviour. When the possibility of future quotas limiting the number of flights individuals could take in a year was discussed, there was universal disapproval. Not one participant thought that an enforced restriction on flights for climate change reasons was acceptable. The loss of freedom of choice was identified as a reason why governments should not restrict their ability to fly.

*“I’d feel pretty restricted about personal freedom and things like that, and I’m quite sure there are plenty of other ways for a government to do more about climate change”*

Female 2, Student Group

*“Whatever happened to freedom of the individual, and freedom of choice, and all the things that we’re supposed to hold dear”*

Male 8, Retired Group

Becken (2007) also found that the value of freedom to travel is firmly established in the minds of many tourists and that restricting this travel is considered unacceptable. The possibility of higher taxes on flights to reflect environmental costs were also met with disapproval although viewed slightly more favourably than quotas, especially by those participants who thought they would be able to afford them and hence could continue their travel behaviour. One participant in the Professionals Group mentioned that an increase in taxes might result in people taking fewer holidays of a longer duration. This idea was scorned upon by the rest of the group who still considered this to be an infringement on their personal freedom. As Adey et al. (2007, p785) suggest *“it is impossible to imagine life without flight”*.

Participants gave a number of spontaneous justifications for their travel behaviour. The cultural and social benefits of travel, to individuals and society, were put forward as a reason to continue with travel. As were the economic benefits tourism brings to poorer countries.

*“I think that travel’s important for people to understand each other’s culture ... so many social reasons why we need to travel and experience different parts of the world”*

Female 3, Student Group

*"We're planning on going to Thailand, to places that were affected by the tsunami on Boxing Day, and you know the tourism industry is something that will help re-build ... in some places where there was poverty tourism brings wealth"*

Male 3, Professionals Group

In the Student Group and the Family Group the discussion moved on to conversations about 'dream' holidays and how it was their financial situations rather than climate change concerns which was preventing them from travelling even more.

*"If I could fly to Kenya I would and it would be great. I probably wouldn't really take a moment to think about climate change, I'd be like yeah I'm going to Kenya!"*

Female 3, Student Group

*"I'm sure that I wouldn't think of climate change if I got the chance to go to Australia. I would not think on no better not ... I would love to go"*

Female 3, Family Group

*"I think there's no such thing as a holiday of a lifetime anymore. I think everyone's so well travelled that people are looking for that new place and I think it's making places that are fairly remote very attractive, but they haven't got the infrastructure to suit that, so it's being impacted purely for our own pleasure. Finding that new place that is untouched by tourism"*

Female 2, Professionals Group

This discussion reflects the discourse of aspirational lifestyles associated with flying (Thurlow and Jaworski, 2006).

### 5.3 Responsibility lies with others

The third barrier relates to the belief amongst participants that responsibility for climate change lies with others, and is consistent with the findings of Stoll-Kleemann et al. (2001) and Lorenzoni et al. (2007). In all four groups the major contributors to climate change were considered to be governments, businesses and other countries. Very little responsibility was seen to lie with individuals in terms of personal contributions to climate change. In addition, when it came to tackling climate change, responsibility was again seen to belong to collective bodies rather than individuals. Personal responsibility (often referred to as personal norms or moral norms in the socio-psychological behaviour literature) is considered a key variable in implementing pro-environmental behaviour (Stern et al., 1999). The lack of personal responsibility displayed by the focus group participants is clearly a barrier to adjusting their holiday travel behaviour in favour of lower carbon options.

The Government featured prominently throughout all four focus groups. There was a common view that the UK Government should practice what they preach. Politicians should lead by example, and they can not expect the general public to take climate change seriously when they have big cars, take lots of flights and own second homes.

*“When you look at the Government and they say they’re putting taxes on this for greener that and the other, and they’re still using cars and still flying places so they’re not concerned”*

Female 1, Family Group

*“If you look at a government collectively and what they could do to help a country as a whole be more carbon neutral then I think there’s an awful lot more governments could do, in the way they trade, the way they act in terms of MPs and second homes”*

Male 2, Professionals Group

There was also considerable scepticism about how serious the UK Government were about tackling the causes of climate change, and annoyance that so called green taxes were not being used directly to combat the problem. There were doubts expressed as to whether the Government really wants people to fly less because airport capacity is being expanded.

*“It’s a means of raising taxation. I fully appreciate the impact to the environment and everything else but I think there’s an element of how much money can we make out of this on the back of climate change”*

Male 2, Professionals Group

Participants also believed that many companies were falsely marketing green credentials. Big business was widely considered to be more responsible for climate change than consumers. Businesses were not doing their fair share in addressing climate change and were passing on responsibility to consumers. Carbon offsetting schemes were viewed unfavourably because they were deemed to place the emphasis on the general public rather than on the airlines ‘who are actually adding to the problem’.

*“Big companies, they’ve created this society, we’ve had to fit around what they’ve put out. They’ve given us cars, they’ve given us cheap flights, they’ve given us the heating etcetera”*

Male 1, Family Group

In the Family and Retired Groups in particular, there was a feeling that the actions of one person cannot make a difference.

*“If we don’t fly somebody else will”*

Male 7, Retired Group

*“As an individual we can do nothing, it doesn’t come on the Richter Scale, never ... I mean there’s a thousand million in India and more than one and a half thousand million in China, we don’t make a mark”*

Male 9, Retired Group

*“I think the human brain, to be quite honest, cannot possibly envisage what is really happening in outer space and time. We’re insects in this enormous universe and I think as individuals we’ll have very little effect on what is going to happen in the next thousand years”*

Male 7, Retired Group

These participants were exhibiting a strong external locus of control (Cleveland et al., 2005), whereby they considered that any efforts they made as individuals to reduce their carbon emissions would be insignificant in the global context. This

sense of 'powerlessness' is viewed by Stoll-Kleemann et al. (2001) as a denial mechanism for accepting personal responsibility. Social dilemmas, the conflict between self-interest and the common good, were evident across all four groups. Participants questioned changing their holiday behaviour when other people were not prepared to change theirs, using the lack of action by others to justify inactivity (Anable et al., 2006; Randles and Mander, 2009; Shaw and Thomas, 2006). These comments referred to the behaviour of other people and the behaviour of other countries. Tackling climate change was seen as a very 'Western' or 'European' thing with America, China, India, Eastern Europe and developing countries all being criticised for not doing enough with regards climate change.

*"That's the difficulty if it's just one country seen to do X and Y to make a difference ... there are still a lot of countries who are far behind us and I think it would seem a bit unfair if we have things imposed on us where others won't"*

Female 6, Professionals Group

*"You've only got to drive past a power station in Eastern Europe, or dare I say Spain and Italy, to realise if they're not going to play why should we"*

Male 3, Retired Group

*"That was aptly put by my wife. She said when they turn the lights off in Las Vegas then she'll believe it. And as they haven't done, she doesn't believe it"*

Male 9, Retired Group

## **6. Conclusions and implications for policy**

Whilst the participants in these focus groups had a basic understanding of climate change, they generally lacked a more in-depth knowledge. Nonetheless, flying was widely identified as a major cause of climate change. When it comes to planning holidays, climate change does not feature in the thoughts or decisions of many of the participants even though many of them acknowledged air travel as a cause of climate change. The association between holidays and climate change, in the minds of the participants, is either not made when planning holidays or is somehow suppressed.

The research identified three major barriers to behavioural change when it comes to taking holidays, all of which present significant obstacles in terms of reducing the impact of international travel on climate change. The first barrier – dismissal of alternative transport modes to air travel – can be seen as a structural or psychological barrier. For many holiday destinations, access by air travel is the only realistic option. Therefore, tourists may consider that they have no choice but to continue flying when they go on holiday. However, the impacts of holidays on climate change can still be reduced, even when air travel is involved, if tourists take fewer holidays of longer duration (hence fewer flights), and travel shorter distances to the destination. If UK tourists were to take more holidays in the UK and less overseas, or even take their holidays in Western Europe, this would open up a number of transport options, such as train and coach, which have less impact on climate change.

However, as the second barrier illustrates, the participants in these focus groups were very much against making changes to their travel behaviour. The participants attached a very high importance and value to their holidays and were reluctant to consider adapting them for climate change reasons. The third barrier

– responsibility lies with others – may help explain this unwillingness to change travel behaviour. The participants were not prepared to accept personal responsibility for the impacts their holidays have on climate change. Instead, they put forward a number of denial mechanisms for why responsibility lies with governments, businesses and other countries, rather than with the individual. The impacts of an individual on climate change were argued as being insignificant in the context of a global problem, and that changing individual travel behaviour would make no difference.

Whilst previous studies suggest an attitude-behaviour gap in relation to environmental issues this research would suggest that, in the case of holidays and international travel, there is an awareness-attitude gap rather than an attitude-behaviour gap. The participants, whilst not necessarily having an in-depth knowledge, were aware that air travel has a significant detrimental impact on climate change. However, this awareness did not appear to translate into pro-environmental attitudes with regards holidays and climate change. In this respect, attitudes and behaviour were consistent in that neither were pro-environmental. It may be the case that awareness is not leading to correlating attitudes, or it may be that behaviour is having a strong influence over attitudes in this holiday situation. Cognitive Dissonance Theory (Festinger, 1957) suggests that where there are inconsistencies between an individual's attitudes and behaviour resulting in internal feelings of discomfort, the individual will adjust either their attitudes or behaviour to reduce this discrepancy. As the participants were reluctant to change their travel behaviour, it is possible they may have aligned their attitudes towards holidays and climate change to be consistent with their behaviour. A similar explanation is offered by Self-Perception Theory (Bem, 1967), which suggests that in certain situations attitudes are inferred on the basis of observations about one's own behaviour. This links to the suggestion that air travel has become embedded in contemporary lifestyles and, while people are aware of the climate change issues, they are unwilling to give up their lifestyle. Therefore, people employ a variety of denial mechanisms (Stoll-Kleeman et al., 2001) to justify continued flights.

While it is not possible to make generalisations from this type of research, a number of policy relevant suggestions can be made. Further research needs to be conducted to investigate why environmental awareness does not translate to pro-environmental attitudes and pro-environmental behaviour when it comes to holidays and climate change. Whilst it may come as no surprise that tourists are reluctant to make significant changes to their lifestyles, especially when such strong social benefits are associated with holidays, finding ways to induce behavioural change is essential for the sustained long-term future of the tourism industry. Information regarding the scale of climate change impacts associated with travel and holidays needs to be presented in a way that is accessible and relevant to the general public. Fiscal measures to increase the costs of flights are unpopular and argued to be iniquitous. However, given the bulk of the problem can be attributed to the more affluent taking more frequent flights (Adey et al., 2007), this deserves further exploration. There are significant trust concerns regarding government and industry action. This is a considerable barrier and it is paramount that government sends out clear messages about its own activities. In addition, the current UK Government policy regarding air travel could be considered somewhat contradictory. The Air Transport White Paper Progress Report (Department for Transport, 2006b) states that the Government is committed to ensuring that aviation reflects the full costs of its climate change emissions and reiterates support for the inclusion of aviation in the EU Emissions Trading Scheme. At the same time, the report also stresses that international

aviation is critical for a successful economy and justifies decisions to expand future airport capacity in the UK. Government forecasts for air passenger demand at UK airports, which include adjustments for passengers paying increased air fares in the future to reflect climate change costs, predict that annual passenger numbers will increase from 228 million in 2005 to 490 million in 2030 (Department for Transport, 2006b). It is possible that the absence of a clear policy direction with regards discouraging the increasing use of air travel could be a factor impacting on reluctance to change tourism behaviour and is thus an area justifying further research. Finally, alternatives to flying are not in the reference frame for international holidays, nor are they associated with aspirational lifestyles. More work is needed to explore slow/low carbon tourism transport practices to establish how these might be more strongly embraced.

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## **Appendix 5.2: TTRA conference paper**

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### **The role of climate change in the travel decisions of UK tourists**

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#### **Abstract**

Whilst much effort has been made to communicate to the public the importance of reducing carbon footprints in the home, one area where emissions are growing rapidly and little attempt has been made to increase consumer understanding of the impacts on climate change is holidays, particularly those involving air travel. Using focus group research, this paper explores tourists' awareness of the impacts of holidays on climate change, examines the extent to which climate change features in holiday decisions and identifies some of the barriers to the adoption of less carbon-intensive tourism practices. The findings suggest that climate change is not considered at all by the vast majority of tourists when planning their holidays. The failure of tourists to make the association between holidays and climate change, combined with significant barriers to behavioural change, presents a considerable challenge in moving the tourism industry onto a sustainable emissions path.

**Keywords:** air travel; climate change

#### **1 INTRODUCTION**

Tourism is a highly energy-intensive industry and has only recently attracted attention as an important contributor to climate change through greenhouse gas emissions (GHGs). Studies show that transport may be responsible for over 90% of tourism's overall contribution to global climate change (Gossling 2002), with air travel dominating these emissions. Gossling and Peeters (2007) conclude that in an average holiday or short break involving air travel, 60-95% of its contribution to global warming will be caused by the flight. The growth, and predicted future growth, in international tourism is a major concern. International tourist arrivals grew to 903 million in 2007 and are forecast to increase to 1.6 billion in 2020 (UNWTO 2008). International tourism is largely dominated by developed countries. The current tourism trend in these industrialised countries has been described as hyper-mobility (Hoyer 2000) and is characterised by the taking of short-breaks in remote destinations several times a year. Global growth rates of air travel have been in the order of 5-6% per year in the period 1970-2000 and are predicted to continue growing at annual rates of 5% until 2020 (Gossling and Peeters 2007).

As part of a wider study, this paper reports the findings of exploratory focus group research designed to investigate the role that climate change plays in the holiday and travel decisions of UK tourists. The research has three objectives: to explore the levels of awareness amongst UK tourists of the impacts holidays and travel have on climate change, to establish the extent to which climate change considerations feature in holiday and travel decision-making processes, and to investigate the major barriers to UK tourists adopting less carbon-intensive tourism consumption practices. Until recently, there has been very little research undertaken to investigate whether tourists are aware of the impacts that their holidays and travel have on climate change. Several studies report low awareness of the impact of air travel on climate change (Becken 2007, Gossling et al. 2006, Shaw and Thomas 2006). In the UK, a number of quantitative studies have examined public attitudes towards air travel. In the most recent Department for Transport (2008) study, 66% of respondents said they believed that air travel harms the environment, although when asked what types of environmental impacts they thought resulted, only 44% mentioned climate change (29% of overall sample). These studies suggest that tourists either do not have a good understanding of the impacts their travel has on climate change or are unwilling to acknowledge the effects of their travel.

The tourism sector must progressively reduce its GHG contributions if it is to move onto a sustainable emissions path. Aviation has been identified as the most important area for reducing these emissions (Peeters et al. 2006). There have been a number of potential changes proposed for reducing the impact of air travel on climate change namely technological; market-based and behavioural changes. Of these options, behavioural change is considered to have the most important role to play in leading to reductions in GHG emissions from air travel associated with tourism (Gossling et al. 2007). The third objective of this research addresses the need for behavioural change in tourism consumption. The findings of this paper shed light on the extent to which barriers to action are inhibiting tourists from changing their tourism practices.

When it comes to understanding behavioural change, a wide range of conceptual theories have been developed, utilising various social, psychological, subjective and objective variables in order to model consumer behaviour (Jackson 2005). These theories of behavioural change operate at a number of different levels, including the individual level, the interpersonal level and the community level (Halpern et al. 2004). A number of theories have been designed specifically to examine pro-environmental behaviour, whilst more general consumer behaviour theories have also been used to predict behaviour in a climate change context. Anable et al. (2006) suggest that pro-environmental behaviour is such a complex concept that there is no '*grand unified theory*' that provides a definitive explanation of behavioural change; hence the purpose of this paper is not to evaluate any particular one of these consumer behaviour theories. Instead, the findings are discussed in the context of several models with specific reference to barriers put forward by the focus group participants as reasons against changing their travel and tourism behaviour. These barriers can lead to inconsistency between people's attitudes and behaviours. This inconsistency is commonly referred to as the attitude-behaviour gap and is particularly prevalent when examining behavioural change related to environmental issues (Nickerson 2003). Anable et al. (2006) consider this attitude-behaviour gap as one of the greatest challenges facing the climate change agenda. Therefore, identifying these barriers to action is a critical step in facilitating behavioural change.

## **2 METHODS**

Despite the potentially high-risk scenarios for the tourism industry and the global environment, relatively little research has been undertaken with respect to tourism and climate change (Becken 2007, Hunter and Shaw 2007). Therefore, exploratory focus

group research was chosen as it has the potential to highlight important factors and variables that are not evident in the limited tourism and climate change literature. It can be argued that focus groups offer a more natural environment than that of individual interviews, as participants are interacting with other people, just as they do in real life (Krueger and Casey, 2000). The literature also suggests that group interaction will lead to a wider range of views, as participants seize and develop on the comments of other group members (Bryman 2008). Group discussion can result in participants defending and more fully explaining their views, thus providing a greater insight into their thoughts and beliefs.

Four focus groups were conducted in Bournemouth, UK. The number of participants in each group ranged between 7 and 10, with 34 participants in total taking part. In terms of composition, each group was relatively homogeneous and the participants were recruited from pre-existing groups. Although the sample is not considered representative, the aim was to include a broad selection of participants in order to get an adequate cross-section of views. The first group consisted of students (Student Group), the second group consisted of parents with young children (Family Group), the third group consisted of working professionals (Professionals Group) and the fourth group consisted of retirees (Retired Group).

It has been argued that participants should receive adequate information on the focus group during recruitment, so that they are able to give their informed consent to take part (Bloor et al. 2001). Potential participants were told that the focus group discussion would be about climate change and people's everyday lives. Mention of holidays and travel were deliberately avoided in the recruitment process, as the researcher did not want to create a connection in the participants' minds between holidays and climate change if one did not already exist. By disclosing that climate change was the main theme of the group discussions, the researcher was aware that this could potentially lead to social desirability bias. In addition, there was also the possibility that the participants may be more interested in and knowledgeable about climate change than the population in general as they volunteered to take part.

The focus groups lasted between 1.5 and 2 hours, and each one was recorded using digital voice recorders. The recordings were then transcribed verbatim by the researcher. The transcripts were read a number of times before codes were developed. The codes were then reviewed and connections between codes were sought. The themes identified were generated inductively from the raw data, rather than deductively from theory and previous research (Boyatzis 1998). The researcher used techniques outlined by Ryan and Bernard (2003) to discover themes in the data. These included searching for repetitions in the data sets, and searching for similarities and differences by making systematic comparisons across the data. The final stage of the analysis involved relating the findings back to the relevant literature and theory.

### **3 FINDINGS**

#### **3.1 Awareness of the impacts holidays and travel have on climate change**

When asked about their understanding of climate change, the most dominant top of mind response in each of the four groups was for participants to talk about changes in weather patterns that they had personally observed in their lifetime. In particular, milder winters, with very little snowfall over recent years, and wetter summers were mentioned. When it came to understanding and even believing in climate change there were mixed responses. Many of the participants were unsure about what climate change is, particularly in the Family Group. In other groups, there was a lot of uncertainty about the human

contribution to climate change through the production of greenhouse gases. A number of participants, particularly in the Retired Group, did not believe that climate change was happening. There was also confusion in all the groups between climate change and holes in the ozone layer.

Whilst general awareness of climate change was quite high, with almost all the participants being familiar with the terms 'climate change' and 'greenhouse gases', in most cases they did not have a strong understanding of either the causes of climate change or the role that humans, including themselves, are having on the levels of GHGs being released into the atmosphere. These findings are consistent with the conclusions of Anable et al. (2006 p11) that "*recognition of the concept of climate change among the UK population is exceptionally high, but a more sophisticated understanding appears to be random and inconsistent*".

As the impacts that individuals, including themselves, may have on climate change were not mentioned in the preceding discussions, participants were asked to make a list of the ways they thought their lifestyles might contribute to climate change. The five most frequently mentioned contributions to climate change were:

1. Car driving
2. Electrical appliances in home
3. Flying
4. Heating home
5. Consumption/disposal of waste

Of particular interest to this research is the fact that flying was the third most common response of the participants. After discussing the items on their lists, participants were then asked to make a list of any things they did to reduce their impact on climate change. The five most frequently mentioned actions were:

1. Recycling
2. Walking
3. Minimising electricity leakage
4. Don't use plastic bags
5. Cycling

It is important to mention that many of the participants said that they did these things as much for financial reasons as environmental reasons. Interestingly, although flying was the third most widely acknowledged impact on climate change, not one participant mentioned that they do anything to address this in terms of flying less or using alternative transport modes.

Following on from these discussions, participants were asked to consider in what ways their holidays might impact on climate change. Travel to and from their destination was identified as having the biggest impact. Flying was referred to in particular, partly because most of the participants had already identified flights as a significant contributor to climate change, and also because that was the method of transport they most frequently used for holidays.

*"I guess in terms of climate change, the travel is the only thing I can think of"*

Female 6, Professionals Group

*"It's the flight isn't it ... I think that's quite a big issue"*

Female 3, Family Group

There tended to be long pauses after flights had been discussed as participants seemed to struggle to identify other impacts that holidays might have on climate change. After a little prompting, energy and resource wastage at hotels and resorts was the next most common theme. A number of participants identified their own behaviour as contributing, as illustrated by this quote referring to a winter holiday taken a few months earlier.

*“We leave the heating on twenty four hours a day for five days ... we do it while we’re away because where we go it’s an all-inclusive”*

Female 1, Family Group

Others referred to hotels wasting resources through excessive air conditioning and heating, washing bedding and towels every day and leaving lights on in corridors all night. Another theme that emerged was that mass tourism has had a considerable impact on the local environment at many popular destinations. This confusion between the impacts of tourism on global climate change and on the local environment of holiday destinations was also encountered by Gossling et al. (2006) in their study of tourists’ perceptions of climate change.

### **3.2 Climate change and holiday/travel decision-making**

Participants were asked to think about the important things they considered when planning their last overseas holiday. The five most important factors identified were:

1. Price/cost
2. Weather
3. Family and friends
4. Minimal travel time
5. Activities

In total across the four groups, more than thirty different factors were mentioned as important elements considered when planning holidays. However, climate change, or even environmental concerns in general, were not mentioned once. Even though climate change was clearly the main topic of discussion in the focus groups, not one of the participants identified climate change as a factor they consider when making decisions about their holidays. This would suggest that the focus group participants were not providing socially desirable responses.

As climate change was not mentioned in the previous discussion, each group were specifically asked whether climate change considerations featured in their thoughts and decisions when they planned their holidays. All but two of the participants said that they did not think about climate change at all. As the following quotes illustrate, climate change does not feature in the vast majority of participants’ thoughts, even though flying had been widely acknowledged as contributing to climate change earlier in the focus groups.

*“I don’t think about it at all ... to be honest I never care”*

Male 5, Student Group

*“I think people are just not aware of it ... to be honest it doesn’t enter my thoughts at all”*

Female 2, Family Group

*“I have never ever considered climate change with regard to a holiday”*

Male 6, Retired Group

Two participants from different groups, both females in their 20s, said that climate change considerations were in the back of their mind when planning their holidays. Both participants had used carbon offsetting schemes to offset flights, but neither did it on a regular basis. They also stated that climate change considerations did not alter their holiday decisions in any additional way other than to sometimes offset flights.

Of even more concern, perhaps, was the fact that a number of younger participants in both the Young and Professionals Groups expressed a view that climate change was actually making them travel more. There was a belief that they should travel as much as possible now, while flights are relatively cheap, and before travel is possibly restricted or made more difficult in the future due to climate change concerns.

*“There is more in the media and it does make me think. But it probably makes me think I should travel more now because I might not have the opportunity ... in twenty years you just won’t be able to get to some of the places that are really accessible now”*

Female 6, Professionals Group

### **3.3 Barriers to behavioural change**

The final part of the discussion revolved around a number of questions aimed at generating discussion on potential ways that holiday and travel behaviour might change in favour of less carbon-intensive tourism practices. Participants were not asked specifically to identify any barriers or obstacles preventing them from adjusting their holiday behaviour. The barriers identified in this analysis were derived from the responses and discussions emanating from questions relating to alternative modes of transport, carbon offsetting schemes, potential future travel restrictions and responsible tourism. Outlined below are some, but not all, of the barriers identified from this research.

The first barrier identified is the strong preference for air travel over alternative travel modes that were expressed in all four groups. Flying was considered the only viable option for most holiday destinations. Trains were dismissed as being too slow and too expensive. France was identified as one of the few overseas holiday destinations that could be reached by train or ferry. In discussions about other holiday destinations, participants said they would not consider any other modes of transport other than flying.

*“It’s difficult to avoid flying when you want to go on holiday”*

Male 3, Student Group

The dismissal of alternative transport modes can be conceived as either a structural barrier, in the sense that flying is perhaps the only realistic option to reach long-haul holiday destinations, or a perceived behavioural control barrier (Ajzen 1991) in that an individual perceives flying as the only option open to them and therefore precludes all other transport options. The extent to which this is a structural or perceived barrier will depend to a great extent on the distance to the destination. To increase the availability of different transport modes, tourists could choose holiday destinations closer to home. However, the focus group participants in this research were resistant to changing their holiday plans for climate change reasons.

Many participants also seemed to have an affinity with low-cost airlines. There was a widespread view that they have opened up travel to the masses, making overseas holidays accessible and affordable for many. Similar positive views of low-cost air travel were also exhibited by the participants in a study by Shaw and Thomas (2006). Despite the negative



climate change and environmental consequences associated with flying, it appears that airlines are held in a positive light by the majority of the focus group participants.

The second barrier comes in the form of the value or importance that the majority of participants placed on holidays. There was a strong reluctance across all the groups to consider changing their tourism behaviour. When the possibility of future quotas limiting the number of flights individuals could take in a year was discussed, there was universal disapproval. Not one participant thought that an enforced restriction on flights for climate change reasons was acceptable. The loss of freedom of choice was identified as a reason why governments should not restrict their ability to fly.

*“I’d feel pretty restricted about personal freedom and things like that, and I’m quite sure there are plenty of other ways for a government to do more about climate change”*

Female 2, Student Group

In her study of the awareness of aviation’s impact on climate change amongst international tourists to New Zealand, Becken (2007) also found that the value of freedom to travel is firmly established in the minds of many tourists and that restricting this travel is considered unacceptable.

The third barrier relates to the belief amongst participants that responsibility for climate change lies with others. In all four groups the major contributors to climate change were considered to be governments, businesses and other countries. Very little responsibility was seen to lie with individuals in terms of personal contributions to climate change.

*“Big companies, they’ve created this society, we’ve had to fit around what they’ve put out. They’ve given us cars, they’ve given us cheap flights, they’ve given us the heating etcetera”*

Male 1, Family Group

In addition, when it came to tackling climate change, responsibility was again seen to belong to collective bodies rather than individuals. Personal responsibility (often referred to as personal norms or moral norms in the socio-psychological behaviour literature) is considered a key variable in implementing pro-environmental behaviour (Stern et al. 1999). The lack of personal responsibility displayed by the focus group participants is clearly a barrier to adjusting their holiday and travel behaviour in favour of practices that have a lower impact on climate change.

There was also considerable scepticism about how serious the UK Government were about tackling the causes of climate change, and annoyance that so called green taxes were not being used directly to combat the problem.

*“It’s a means of raising taxation. I fully appreciate the impact to the environment and everything else but I think there’s an element of how much money can we make out of this on the back of climate change”*

Male 2, Professionals Group

There were doubts expressed as to whether the government really wants people to fly less because airport capacity is being expanded. Similar issues of trust concerning government intentions in relation to climate change policy were reported by Stoll-Kleemann et al. (2001).

In the Family and Retired Groups in particular, there was a feeling that the actions of one person cannot make a difference. These participants were exhibiting a strong external

locus of control, whereby they considered that any efforts they made as individuals to reduce their carbon emissions would be insignificant in the global context. This sense of 'powerlessness' is viewed by Stoll-Kleemann et al. (2001) as a denial mechanism for accepting personal responsibility.

Across all four groups the argument was put forward that why should someone change their holiday behaviour when other people were not prepared to change theirs.

*"If we don't fly somebody else will"*

Male 7, Retired Group

This is an example of a social dilemma, the conflict between self-interest and the common good. Related to this is the tendency to use the lack of action by others to justify one's own inactivity (Anable et al. 2006). Shaw and Thomas (2006) found that participants in their research also expressed this barrier to action – that personal sacrifice in terms of reducing air travel would have no value unless this change in behaviour was reciprocated by others.

#### **4 CONCLUSIONS**

Whilst the participants in these focus groups had a basic understanding of climate change, they generally lacked a more in-depth knowledge. Nonetheless, the vast majority identified flying as a major cause of climate change. Although air travel was widely acknowledged as impacting on climate change, participants struggled to identify other aspects of holidays that contribute to climate change. When it comes to planning holidays, climate change does not feature in the thoughts or decisions of the vast majority of participants even though most of them had identified flying as a cause of climate change. The association between holidays and climate change, in the minds of the participants, is either not made when planning holidays or is somehow suppressed.

The focus group research identified three major barriers to behavioural change when it comes to taking holidays, all of which present significant obstacles in terms of reducing the impact of international travel on climate change. The first barrier – dismissal of alternative transport modes to air travel – can be seen as a structural or psychological barrier. For many holiday destinations, access by air travel is the only realistic option. Therefore, tourists may consider that they have no choice but to continue flying when they go on holiday. However, the impacts of holidays on climate change can still be reduced, even when air travel is involved, if tourists take fewer holidays of longer duration (hence fewer flights), and travel shorter distances to the destination. If UK tourists were to take more holidays in the UK and less overseas, or even take their holidays in Western Europe, this would open up a number of transport options, such as train and coach, which have less impact on climate change. However, as the second barrier identified illustrates, the participants in these focus groups were very much against making changes to their travel behaviour. The participants attached a very high importance and value to their holidays and were reluctant to consider adapting them for climate change reasons. The third barrier – responsibility lies with others – may help explain this unwillingness to change travel behaviour. The participants were not prepared to accept personal responsibility for the impacts their holidays have on climate change. Instead, they put forward a number of denial mechanisms for why responsibility lies with governments, businesses and other countries, rather than with the individual. The impacts of an individual on climate change were argued as being insignificant in the context of a global problem, and that changing individual travel behaviour would make no difference.

Whilst previous studies suggest an attitude-behaviour gap in relation to environmental issues this research would suggest that, in the case of holidays and international travel, there is a knowledge-attitude gap rather than an attitude-behaviour gap. The participants, whilst not necessarily having an in-depth knowledge, were aware that air travel has a significant detrimental impact on climate change. However, this knowledge did not appear to translate into pro-environmental attitudes with regards holidays and climate change. In this respect, attitudes and behaviour were consistent in that neither were pro-environmental. It may be the case that knowledge is not leading to correlating attitudes, or it may be that behaviour is having a strong influence over attitudes in this holiday situation. Cognitive Dissonance Theory (Festinger 1957) suggests that where there are inconsistencies between an individual's attitudes and behaviour, the individual will adjust either their attitudes or behaviour to reduce this discrepancy. As the participants were reluctant to change their travel behaviour, it is possible they may have aligned their attitudes towards holidays and climate change to be consistent with their behaviour. An alternative explanation is offered by Self-Perception Theory (Bem 1967), which suggests that in certain situations attitudes are inferred on the basis of observations about one's own behaviour. Further research needs to be conducted to investigate why environmental knowledge does not translate to pro-environmental attitudes and pro-environmental behaviour when it comes to holidays and climate change. Whilst it may come as no surprise that tourists are reluctant to make significant changes to their lifestyles, especially when such strong social benefits are associated with holidays, finding ways to induce behavioural change is essential for the sustained long-term future of the tourism industry.

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## Appendix 6.1: Spearman's rho test results

### Correlations

			I believe that my holidays have some affect on climate change	By taking fewer flights a year I will reduce my impact on climate change
Spearman's rho	I believe that my holidays have some affect on climate change	Correlation Coefficient	1.000	.470**
		Sig. (2-tailed)	.	.000
		N	611	603
	By taking fewer flights a year I will reduce my impact on climate change	Correlation Coefficient	.470**	1.000
		Sig. (2-tailed)	.000	.
		N	603	605

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

## Appendix 6.2: Transcripts of responses to Question 8

“Air travel, significant pollutant. Large amount of fuel burnt for relatively short distance/holiday. In terms of burnt fuel/day etc.”

“Avoiding airplanes. Carefully choosing accommodation (farm holidays).”

“Because of climate change I now holiday close to home.”

“By electing to stay in the UK.”

“Consider travelling by train or car instead of flying to the south of France. Have taken 3 holidays this year - all in UK, plus one to south of France. The UK ones were all affected by consideration to climate change.”

“Don't take short breaks which involve flying. Only fly once a year or less for at least 2 weeks holiday.”

“Have begun to select destinations that can be reached by trains/Eurostar. Used trains and public transport exclusively for multi-destination European holiday last year.”

“I always pay additional carbon off-set charge where it is available. This is a voluntary payment. Use public transport when on holiday (do not hire a car).”

“I am aware of the impact of holidays on climate change. As they are readily available if I didn't go someone else would. I do not think there will be as many flights in years to come, if nothing else it is too costly.”

“I am aware that flying puts a lot of CO<sub>2</sub> into the atmosphere so I avoid 'weekend breaks' by air. Holidays need to be of a reasonable duration to justify the travel. I also try to be environmentally friendly and try to walk or cycle rather than use the car for every trip, and only use air conditioning or heating if really needed.”

“I am trying to stay in the country I come from. Also, I try to go/use public transport. I'm not only thinking about climate change when I plan my holidays but also in daily life!”

“I choose not to fly although I have done in the past.”

“I don't do too many short breaks as these involve flights to and from, so I maybe do one big holiday so reducing number of flights or journeys to/from destinations. I also pick destinations not too hot or too cold so I don't need heating or air conditioning. I don't travel by car. I try to use multiperson transport ie coach/train.”

“I have recently resorted to train travel to reach a holiday destination rather than car use. I also believe that I would use train to holiday in Europe, rather than fly.”

“I like going to 'off the beaten track' type holidays and walking holidays with companies that take carbon footprint into account.”

“I think about the impact but it doesn't stop me taking holidays abroad.”

“I think airplanes contribute most to global warming and so we made a conscious decision to travel via Eurostar wherever possible.”

“I try to avoid trains as much as possible. Prefer to hire a good quality diesel car as these pollute less.”

“I try to limit long-haul flights but have to balance that with my need to see/visit relatives and friends. In travelling within and to Europe I tend to use public transport or a combination of ferry and car.”

“I usually stay within cycling distance of the house. Have had one holiday abroad to USA in the last 15 years. Whilst there we car shared with family, and stayed 3 weeks, so making use of the plane fuel.”

“I worry about flying long distances and what impact that has on my carbon footprint and would avoid flying too far.”

“I would avoid travel to places where ecological balance is at risk. I don't travel just for the sake of travelling - I only travel long haul to visit friends/relatives or attend meetings.”

“I wouldn't travel a long distant for a short break. Using the car, just for one trip is a waste of resources. We visit and do chores on route. Unnecessary travel examples: flying to shop in New York for a weekend, is laughable, and should be banned! A coach trip to Germany Christmas shopping, I feel the same, ridiculous. Going to France to buy cheese, well don't we have cheese? Flying should be more expensive.”

“Offset air travel using a carbon exchange website.”

“Prefer to choose UK for holidays. Try not to go abroad too often.”

“Take trains when possible. Would use it more often if possible to get further by such means without interminable waiting and delays. Problem: if I curtail my enjoyment of holidays by air to overseas destinations (ie beyond Europe), the effect will be negligible whilst I'll get no such holidays and no-one will notice anyway.”

“Tend to use mass transport systems.”

“The impact of air travel. Destruction/exploitation of local environments to accommodate tourism. Use of other, possibly scarce resources, eg water, devoted to tourists and their consumption.”

“Travel to Europe by train if possible to reduce air travel.”

“Travelling to holiday destinations would largely be done by plane, but travelling within countries would be done by train where possible.”



“Try not to fly when viable alternative. We are going skiing and will travel by coach instead of flying. Also when travelling to Scotland we go by train instead of car or flying.”

“Try to choose holiday companies with green/ethical policies - trying to not fly to destination.”

“Use carbon offsetting scheme. Don't go abroad more than once a year, sometimes once every two years.”

“We are always aware that beside the cost of the holiday, the impact of using non-renewable resources impact on the future generations.”

“We avoid going abroad for holidays and will only very very occasionally go to visit family.”

“We do think about how environmentally responsible the company we are holidaying with - this isn't very easy. I think the government should be more proactive in making all companies (not just holiday companies) in being more environmentally friendly.”

“We look at things like: shortest journey route, use as less water and electricity as possible, take least amount of luggage.”

“We now stay in UK and travel by coach or train.”

“We try not to take flights because of the carbon footprint.”

“We try to avoid air travel to distant countries. We use our own holiday (and motor home) unit and keep speeds down to maximise miles per litre. We value water and try to minimise overuse. We try to avoid excess packaging.”

“Why holiday abroad with the effects on climate change when we can holiday at home in our beautiful country.”

“Would not travel any more often than essential.”

### Appendix 6.3: Spearman's rho test results

Correlations			Thoughts on climate change impacts just don't enter my mind when planning holidays	I do not consider climate change impacts as being important when planning my holidays
Spearman's rho	Thoughts on climate change impacts just don't enter my mind when planning holidays	Correlation Coefficient	1.000	.680**
		Sig. (2-tailed)	.	.000
		N	545	542
	I do not consider climate change impacts as being important when planning my holidays	Correlation Coefficient	.680**	1.000
		Sig. (2-tailed)	.000	.
		N	542	546

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

## Appendix 6.4: Spearman's rho test results

			Correlations	
			I do not know how climate change is linked with holidays	My holidays do not have any impact on climate change
Spearman's rho	I do not know how climate change is linked with holidays	Correlation	1.000	.464**
		Coefficient	.	.000
		Sig. (2- tailed)	.	.000
		N	544	541
	My holidays do not have any impact on climate change	Correlation	.464**	1.000
		Coefficient	.000	.
		Sig. (2- tailed)	.000	.
		N	541	544

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

## Appendix 6.5: Contingency tables for chi-square tests

### Fly less often

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	144.294 <sup>a</sup>	4	.000
Likelihood Ratio	157.046	4	.000
Linear-by-Linear Association	131.189	1	.000
N of Valid Cases	591		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.74.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.494	.000
	Cramer's V	.349	.000
	Contingency Coefficient	.443	.000
N of Valid Cases		591	

### Stop flying all together

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	167.484 <sup>a</sup>	4	.000
Likelihood Ratio	144.062	4	.000
Linear-by-Linear Association	122.788	1	.000
N of Valid Cases	590		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.62.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.533	.000
	Cramer's V	.377	.000
	Contingency Coefficient	.470	.000
N of Valid Cases		590	

**Use trains or coaches for short-haul holiday trips**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.228 <sup>a</sup>	4	.001
Likelihood Ratio	18.691	4	.001
Linear-by-Linear Association	14.287	1	.000
N of Valid Cases	585		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 36.37.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.181	.001
	Cramer's V	.128	.001
	Contingency Coefficient	.178	.001
N of Valid Cases		585	

**Take fewer holidays a year of longer duration**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	68.613 <sup>a</sup>	4	.000
Likelihood Ratio	71.968	4	.000
Linear-by-Linear Association	62.104	1	.000
N of Valid Cases	573		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.79.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.346	.000
	Cramer's V	.245	.000
	Contingency Coefficient	.327	.000
N of Valid Cases		573	

**Take more short-haul holidays and fewer long-haul holidays**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.241 <sup>a</sup>	4	.000
Likelihood Ratio	41.456	4	.000
Linear-by-Linear Association	39.351	1	.000
N of Valid Cases	574		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.39.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.265	.000
	Cramer's V	.187	.000
	Contingency Coefficient	.256	.000
N of Valid Cases		574	

**Only take holidays in the UK**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	192.512 <sup>a</sup>	4	.000
Likelihood Ratio	182.717	4	.000
Linear-by-Linear Association	161.629	1	.000
N of Valid Cases	586		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.37.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.573	.000
	Cramer's V	.405	.000
	Contingency Coefficient	.497	.000
N of Valid Cases		586	

**Use ethical/responsible tour operators**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.357 <sup>a</sup>	4	.010
Likelihood Ratio	13.042	4	.011
Linear-by-Linear Association	7.230	1	.007
N of Valid Cases	557		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.53.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.155	.010
	Cramer's V	.109	.010
	Contingency Coefficient	.153	.010
N of Valid Cases		557	

**Use a carbon offsetting scheme**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.288 <sup>a</sup>	4	.036
Likelihood Ratio	9.608	4	.048
Linear-by-Linear Association	7.389	1	.007
N of Valid Cases	551		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.38.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.137	.036
	Cramer's V	.097	.036
	Contingency Coefficient	.135	.036
N of Valid Cases		551	



**Actively seek accommodation providers that have a green/environmental policy**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.434 <sup>a</sup>	4	.006
Likelihood Ratio	14.489	4	.006
Linear-by-Linear Association	11.387	1	.001
N of Valid Cases	567		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.23.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.160	.006
	Cramer's V	.113	.006
	Contingency Coefficient	.158	.006
N of Valid Cases		567	

**Use public transport whilst on holiday**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.891 <sup>a</sup>	4	.002
Likelihood Ratio	16.690	4	.002
Linear-by-Linear Association	.549	1	.459
N of Valid Cases	591		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.77.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.169	.002
	Cramer's V	.120	.002
	Contingency Coefficient	.167	.002
N of Valid Cases		591	

**Purchase locally produced goods whilst on holiday**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.748 <sup>a</sup>	4	.068
Likelihood Ratio	8.753	4	.068
Linear-by-Linear Association	.838	1	.360
N of Valid Cases	588		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.83.

**Symmetric Measures**

		Value	Approx. Sig.
Nominal by Nominal	Phi	.122	.068
	Cramer's V	.086	.068
	Contingency Coefficient	.121	.068
N of Valid Cases		588	

## Appendix 7.1: Spearman's rho test results

### Correlations

			There is considerable debate amongst scientists as to whether climate change is happening	I believe that climate change is a serious threat to the future of our planet
Spearman's rho	There is considerable debate amongst scientists as to whether climate change is happening	Correlation Coefficient Sig. (2-tailed) N	1.000 . 616	-.370** .000 614
	I believe that climate change is a serious threat to the future of our planet	Correlation Coefficient Sig. (2-tailed) N	-.370** .000 614	1.000 . 618

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

## Appendix 7.2: Spearman's rho test results

Correlations

			I try to minimise my carbon footprint	I am interested in protecting the environment
Spearman's rho	I try to minimise my carbon footprint	Correlation Coefficient	1.000	.414**
		Sig. (2-tailed)	.	.000
		N	606	602
	I am interested in protecting the environment	Correlation Coefficient	.414**	1.000
		Sig. (2-tailed)	.000	.
		N	602	614

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

### Appendix 7.3: Spearman's rho test results

#### Correlations

			I believe that my holidays have some affect on climate change	Other people's holidays contribute more to climate change than my own
Spearman's rho	I believe that my holidays have some affect on climate change	Correlation Coefficient	1.000	.008
		Sig. (2-tailed)	.	.849
		N	611	608
	Other people's holidays contribute more to climate change than my own	Correlation Coefficient	.008	1.000
		Sig. (2-tailed)	.849	.
		N	608	613

## Appendix 7.4: Spearman's rho test results

### Correlations

			I am prepared to make substantial changes to the way I take holidays for climate change reasons	The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations
Spearman's rho	I am prepared to make substantial changes to the way I take holidays for climate change reasons	Correlation Coefficient Sig. (2-tailed) N	1.000 . 610	.435** .000 608
	The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations	Correlation Coefficient Sig. (2-tailed) N	.435** .000 608	1.000 . 614

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

## Appendix 7.5: Spearman's rho test results

### Correlations

			Any actions an individual tourist can take will be insignificant on a global problem like climate change	By taking fewer flights a year I will reduce my impact on climate change
Spearman's rho	Any actions an individual tourist can take will be insignificant on a global problem like climate change	Correlation Coefficient Sig. (2-tailed) N	1.000 . 610	-.245** .000 600
	By taking fewer flights a year I will reduce my impact on climate change	Correlation Coefficient Sig. (2-tailed) N	-.245** .000 600	1.000 . 605

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

## Appendix 7.6: Spearman's rho test results

Correlations

			Aeroplanes will be invented whose emissions do not contribute to climate change	Scientists will find a way to prevent climate change from happening
Spearman's rho	Aeroplanes will be invented whose emissions do not contribute to climate change	Correlation Coefficient	1.000	.295**
		Sig. (2-tailed)	.	.000
		N	616	612
	Scientists will find a way to prevent climate change from happening	Correlation Coefficient	.295**	1.000
		Sig. (2-tailed)	.000	.
		N	612	613

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



## Appendix 7.7: Spearman's rho test results

Correlations

			I automatically think of flying when planning the travel part of my holidays	I usually explore alternatives to air travel when planning holidays
Spearman's rho	I automatically think of flying when planning the travel part of my holidays	Correlation Coefficient	1.000	-.545**
		Sig. (2-tailed)	.	.000
		N	612	605
	I usually explore alternatives to air travel when planning holidays	Correlation Coefficient	-.545**	1.000
		Sig. (2-tailed)	.000	.
		N	605	612

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

## Appendix 7.8: Spearman's rho test results

### Correlations

			Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much
Spearman's rho	Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	Correlation Coefficient Sig. (2-tailed) N	1.000 . 612	.282** .000 607
	If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much	Correlation Coefficient Sig. (2-tailed) N	.282** .000 607	1.000 . 609

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

## Appendix 7.9: Spearman's rho test results

### Correlations

			The Government is not doing enough to tackle climate change	MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights
Spearman's rho	The Government is not doing enough to tackle climate change	Correlation Coefficient	1.000	.202**
		Sig. (2-tailed)	.	.000
		N	616	615
	MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights	Correlation Coefficient	.202**	1.000
		Sig. (2-tailed)	.000	.
		N	615	616

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

## Appendix 7.10: Spearman's rho test results

### Correlations

			Businesses in the tourism industry should do more to tackle climate change	Airlines rather than passengers should be responsible for paying environmental taxes
Spearman's rho	Businesses in the tourism industry should do more to tackle climate change	Correlation Coefficient	1.000	.231**
		Sig. (2-tailed)	.	.000
		N	615	614
Spearman's rho	Airlines rather than passengers should be responsible for paying environmental taxes	Correlation Coefficient	.231**	1.000
		Sig. (2-tailed)	.000	.
		N	614	616

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

## Appendix 7.11: Spearman's rho test results

### Correlations

			If a few people begin to change their holiday behaviour others will follow	Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs
Spearman's rho	If a few people begin to change their holiday behaviour others will follow	Correlation Coefficient Sig. (2-tailed) N	1.000 . 612	-.187** .000 610
	Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs	Correlation Coefficient Sig. (2-tailed) N	-.187** .000 610	1.000 . 617

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

**Appendix 7.12: Spearman's rho test results**

**Correlations**

			Going on overseas holidays is a normal thing to do	I like talking to my friends and family about the places I have visited on overseas holidays
Spearman's rho	Going on overseas holidays is a normal thing to do	Correlation Coefficient	1.000	.312**
		Sig. (2-tailed)	.	.000
		N	612	609
	I like talking to my friends and family about the places I have visited on overseas holidays	Correlation Coefficient	.312**	1.000
		Sig. (2-tailed)	.000	.
		N	609	612

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



## Appendix 7.14: Cluster means for four cluster solution

### Cluster means: Internal factors

* Results in percentage %	Cluster 1 Mean	Cluster 2 Mean	Cluster 3 Mean	Cluster 4 Mean	Mean
<b>Lack of knowledge/ uncertainty/ scepticism of climate change</b>					
There is considerable debate amongst scientists as to whether climate change is happening	2.17	2.44	2.64	1.65	<b>2.30</b>
I believe that climate change is a serious threat to the future of our planet	2.65	2.13	1.50	3.62	<b>2.39</b>
<b>Lack of environmental values and attitudes</b>					
I try to minimise my carbon footprint	2.78	2.67	2.18	3.74	<b>2.78</b>
I am interested in protecting the environment	2.04	1.93	1.49	2.45	<b>1.97</b>
<b>Denial of personal responsibility/ blaming others</b>					
I believe that my holidays have some affect on climate change	2.72	2.32	2.01	3.65	<b>2.57</b>
Other people's holidays contribute more to climate change than my own	3.04	3.28	2.32	3.75	<b>3.13</b>
<b>Reluctance to change lifestyles/ freedom of choice</b>					
I am prepared to make substantial changes to the way I take holidays for climate change reasons	3.27	3.23	2.24	4.19	<b>3.23</b>
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations	3.74	3.96	2.90	4.43	<b>3.80</b>
<b>Self-efficacy/ locus of control (fatalism/ powerlessness)</b>					
Any actions an individual tourist can take will be insignificant on a global problem like climate change	2.70	2.86	3.10	1.91	<b>2.70</b>
By taking fewer flights a year I will reduce my impact on climate change	2.62	2.35	1.73	3.53	<b>2.52</b>
<b>Reliance on technology to solve problem</b>					
Aeroplanes will be invented whose emissions do not contribute to climate change	2.75	2.78	2.99	2.52	<b>2.76</b>
Scientists will find a way to prevent climate change from happening	3.29	3.22	3.47	3.01	<b>3.24</b>
<b>Habits and past behaviour</b>					
I automatically think of flying when planning the travel part of my holidays	3.46	2.03	3.63	1.83	<b>2.60</b>
I usually explore alternatives to air travel when planning holidays	2.81	3.67	2.04	3.88	<b>3.24</b>
<b>Protecting the environment in other ways</b>					
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	3.27	3.18	4.01	2.34	<b>3.20</b>
If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much	3.06	2.97	3.51	3.22	<b>3.11</b>



### Cluster means: External factors

* Results in percentage %	Cluster 1 Mean	Cluster 2 Mean	Cluster 3 Mean	Cluster 4 Mean	Mean
<b>Lack of political action</b>					
The Government is not doing enough to tackle climate change	2.74	2.48	1.63	3.53	<b>2.56</b>
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights	2.11	1.66	1.54	1.94	<b>1.78</b>
<b>Lack of action by business and industry</b>					
Businesses in the tourism industry should do more to tackle climate change	2.51	2.33	1.67	3.56	<b>2.44</b>
Airlines rather than passengers should be responsible for paying environmental taxes	2.60	2.38	2.26	2.66	<b>2.43</b>
<b>Social dilemmas/ free-rider problem</b>					
If a few people begin to change their holiday behaviour others will follow	3.19	2.99	2.42	3.88	<b>3.08</b>
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs	2.39	2.28	2.42	1.94	<b>2.27</b>
<b>Social norms and expectation to consume</b>					
Going on overseas holidays is a normal thing to do	2.82	2.12	2.85	1.70	<b>2.35</b>
I like talking to my friends and family about the places I have visited on overseas holidays	2.62	1.98	2.28	1.90	<b>2.20</b>

**Cluster means: Instrumental and Contextual/Situational factors**

* Results in percentage %	Cluster 1 Mean	Cluster 2 Mean	Cluster 3 Mean	Cluster 4 Mean	Mean
<b>Instrumental factors (time, cost convenience etc.)</b> (Systems of Provision from social Practices Model)					
Flying is the fastest way to travel to overseas holiday destinations	1.95	1.37	1.71	1.30	<b>1.58</b>
Flying is the cheapest way to travel to overseas holiday destinations	2.91	2.15	3.03	2.17	<b>2.48</b>
Flying is more convenient than travelling by train or coach to overseas holiday destinations	2.52	1.57	2.58	1.56	<b>1.97</b>
Travelling by train or coach to overseas holiday destinations takes too much time	2.62	1.72	2.64	1.78	<b>2.10</b>
I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying	2.14	2.21	1.55	2.57	<b>2.14</b>
<b>Contextual / Situational factors</b> (Systems of Provision from Social Practices Model)					
For most overseas holiday destinations, flying is the only realistic travel option	2.41	1.60	2.18	1.58	<b>1.89</b>
Alternatives to flying are not offered by travel agents and tour operators	2.78	2.36	2.35	2.64	<b>2.53</b>
When planning holidays, the carbon footprint of different holidays is not made clear to tourists	2.16	1.85	1.67	2.34	<b>1.99</b>
It is easy to find out which hotels attempt to minimise their environmental impacts	3.55	3.61	3.54	3.52	<b>3.56</b>
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change	3.60	3.66	3.45	3.60	<b>3.59</b>

## Appendix 7.15: Cluster means for five cluster solution

### Cluster means: Internal factors

	Cluster 1 Mean	Cluster 2 Mean	Cluster 3 Mean	Cluster 4 Mean	Cluster 5 Mean	Mean
<b>Lack of knowledge/ uncertainty/ scepticism of climate change</b>						
There is considerable debate amongst scientists as to whether climate change is happening	2.17	2.42	2.48	2.64	1.65	<b>2.30</b>
I believe that climate change is a serious threat to the future of our planet	2.65	2.29	1.88	1.50	3.62	<b>2.39</b>
<b>Lack of environmental values and attitudes</b>						
I try to minimise my carbon footprint	2.78	2.74	2.55	2.18	3.74	<b>2.78</b>
I am interested in protecting the environment	2.04	2.02	1.78	1.49	2.45	<b>1.97</b>
<b>Denial of personal responsibility/ blaming others</b>						
I believe that my holidays have some affect on climate change	2.72	2.45	2.10	2.01	3.65	<b>2.57</b>
Other people's holidays contribute more to climate change than my own	3.04	3.08	3.60	2.32	3.75	<b>3.13</b>
<b>Reluctance to change lifestyles/ freedom of choice</b>						
I am prepared to make substantial changes to the way I take holidays for climate change reasons	3.27	3.48	2.81	2.24	4.19	<b>3.23</b>
The Government should introduce restrictions on tourists visiting certain long-haul holiday destinations	3.74	4.06	3.79	2.90	4.43	<b>3.80</b>
<b>Self-efficacy/ locus of control (fatalism/ powerlessness)</b>						
Any actions an individual tourist can take will be insignificant on a global problem like climate change	2.70	2.49	3.47	3.10	1.91	<b>2.70</b>
By taking fewer flights a year I will reduce my impact on climate change	2.62	2.47	2.15	1.73	3.53	<b>2.52</b>
<b>Reliance on technology to solve problem</b>						
Aeroplanes will be invented whose emissions do not contribute to climate change	2.75	2.67	2.97	2.99	2.52	<b>2.76</b>
Scientists will find a way to prevent climate change from happening	3.29	3.09	3.42	3.47	3.01	<b>3.24</b>
<b>Habits and past behaviour</b>						
I automatically think of flying when planning the travel part of my holidays	3.46	1.95	2.16	3.63	1.83	<b>2.60</b>
I usually explore alternatives to air travel when planning holidays	2.81	3.63	3.74	2.04	3.88	<b>3.24</b>
<b>Protecting the environment in other ways</b>						
Holidays are special and different to my normal everyday life so I don't need to worry about their impacts on climate change	3.27	2.91	3.62	4.01	2.34	<b>3.20</b>
If I try to reduce my carbon footprint in my home life then the impacts my holidays have on climate change don't matter so much	3.06	2.70	3.42	3.51	3.22	<b>3.11</b>

### Cluster means: External factors

	Cluster 1 Mean	Cluster 2 Mean	Cluster 3 Mean	Cluster 4 Mean	Cluster 5 Mean	Mean
<b>Lack of political action</b>						
The Government is not doing enough to tackle climate change	2.74	2.54	2.37	1.63	3.53	<b>2.56</b>
MPs cannot expect the general public to take climate change seriously when they own second homes, drive big cars and take lots of flights	2.11	1.61	1.72	1.54	1.94	<b>1.78</b>
<b>Lack of action by business and industry</b>						
Businesses in the tourism industry should do more to tackle climate change	2.51	2.43	2.16	1.67	3.56	<b>2.44</b>
Airlines rather than passengers should be responsible for paying environmental taxes	2.60	2.33	2.46	2.26	2.66	<b>2.43</b>
<b>Social dilemmas/ free-rider problem</b>						
If a few people begin to change their holiday behaviour others will follow	3.19	3.25	2.55	2.42	3.88	<b>3.08</b>
Even if people living in the UK change their holiday behaviour, people in other countries will not change theirs	2.39	2.04	2.67	2.42	1.94	<b>2.27</b>
<b>Social norms and expectation to consume</b>						
Going on overseas holidays is a normal thing to do	2.82	2.01	2.31	2.85	1.70	<b>2.35</b>
I like talking to my friends and family about the places I have visited on overseas holidays	2.62	1.94	2.05	2.28	1.90	<b>2.20</b>

### Cluster means: Instrumental and Contextual/Situational factors

	Cluster 1 Mean	Cluster 2 Mean	Cluster 3 Mean	Cluster 4 Mean	Cluster 5 Mean	Mean
<b>Instrumental factors (time, cost convenience etc.)</b> (Systems of Provision from social Practices Model)						
Flying is the fastest way to travel to overseas holiday destinations	1.95	1.25	1.57	1.71	1.30	<b>1.58</b>
Flying is the cheapest way to travel to overseas holiday destinations	2.91	1.87	2.61	3.03	2.17	<b>2.48</b>
Flying is more convenient than travelling by train or coach to overseas holiday destinations	2.52	1.42	1.81	2.58	1.56	<b>1.97</b>
Travelling by train or coach to overseas holiday destinations takes too much time	2.62	1.50	2.07	2.64	1.78	<b>2.10</b>
I would take the train to holiday destinations in Europe if the ticket prices and travel time were the same as flying	2.14	2.19	2.24	1.55	2.57	<b>2.14</b>
<b>Contextual / Situational factors</b> (Systems of Provision from Social Practices Model)						
For most overseas holiday destinations, flying is the only realistic travel option	2.41	1.42	1.91	2.18	1.58	<b>1.89</b>
Alternatives to flying are not offered by travel agents and tour operators	2.78	2.32	2.42	2.35	2.64	<b>2.53</b>
When planning holidays, the carbon footprint of different holidays is not made clear to tourists	2.16	1.89	1.79	1.67	2.34	<b>1.99</b>
It is easy to find out which hotels attempt to minimise their environmental impacts	3.55	3.65	3.55	3.54	3.52	<b>3.56</b>
Companies operating in the tourism industry want tourists to change the way they take holidays in order to reduce the impacts on climate change	3.60	3.61	3.72	3.45	3.60	<b>3.59</b>

## Appendix 7.16: Opinions on the size of contribution by cluster

### Views on the size of the contribution of various factors to climate change (All respondents)

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Flying/air travel	599	33.4	32.7	19.5	8.3	3.2	2.8	2.11
Food imported to the UK from overseas countries	602	17.1	36.0	25.9	10.3	4.2	6.5	2.45
Driving a car	597	15.2	36.2	30.8	11.4	3.9	2.5	2.48
Packaging on products	599	13.7	28.7	29.5	14.9	8.0	5.2	2.72
Going on holidays overseas	600	11.2	27.7	34.5	15.7	6.8	4.2	2.74
Heating homes	604	8.1	28.8	35.6	16.9	7.3	3.3	2.85
Use of electrical products in home	602	5.0	17.3	34.4	27.7	12.0	3.7	3.24
Using public transport	599	3.7	15.4	36.1	30.4	10.9	3.7	3.29
Using aerosol cans	590	5.9	16.4	27.3	25.3	17.5	7.6	3.36

### Views on the size of the contribution of various factors to climate change (Cluster 1 respondents)

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Flying/air travel	140	21.4	45.0	22.1	5.7	1.4	4.3	2.17
Food imported to the UK from overseas countries	140	13.6	34.3	28.6	10.0	4.3	9.3	2.53
Driving a car	138	7.2	34.8	39.9	13.8	0.7	3.6	2.65
Packaging on products	138	7.2	29.7	34.8	14.5	8.7	5.1	2.87
Going on holidays overseas	139	4.3	29.5	37.4	18.0	5.8	5.0	2.91
Heating homes	138	5.1	26.1	36.2	24.6	2.9	5.1	2.94
Use of electrical products in home	138	3.6	10.9	36.2	35.5	10.1	3.6	3.39
Using public transport	138	2.2	13.8	32.6	36.2	9.4	5.8	3.39
Using aerosol cans	137	7.3	20.4	23.4	25.5	13.1	10.2	3.19

**Views on the size of the contribution of various factors to climate change  
(Cluster 2 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Flying/air travel	160	29.4	33.8	26.9	6.3	0.6	3.1	2.12
Food imported to the UK from overseas countries	159	15.1	35.8	31.4	10.7	1.3	5.7	2.44
Driving a car	158	19.6	34.8	31.0	10.1	1.3	3.2	2.37
Packaging on products	160	17.5	26.9	30.6	16.9	3.8	4.4	2.61
Going on holidays overseas	159	10.7	25.2	44.0	13.8	1.3	5.0	2.68
Heating homes	160	5.6	31.3	44.4	10.6	5.0	3.1	2.77
Use of electrical products in home	159	5.0	18.2	40.9	22.6	8.8	4.4	3.13
Using public transport	158	4.4	15.8	39.2	27.8	8.9	3.8	3.22
Using aerosol cans	158	3.8	12.0	29.1	25.3	21.5	8.2	3.53

**Views on the size of the contribution of various factors to climate change  
(Cluster 3 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Flying/air travel	94	51.1	36.2	8.5	4.3	0	0	1.66
Food imported to the UK from overseas countries	95	21.1	44.2	21.1	10.5	1.1	2.1	2.25
Driving a car	94	20.2	44.7	31.9	2.1	0	1.1	2.16
Packaging on products	95	16.8	34.7	30.5	9.5	4.2	4.2	2.47
Going on holidays overseas	93	18.3	39.8	29.0	6.5	4.3	2.2	2.37
Heating homes	94	10.6	27.7	40.4	20.2	0	1.1	2.71
Use of electrical products in home	95	5.3	25.3	35.8	27.4	5.3	1.1	3.02
Using public transport	94	6.4	22.3	36.2	31.9	3.2	0	3.03
Using aerosol cans	92	12.0	16.3	43.5	16.3	9.8	2.2	2.96

**Views on the size of the contribution of various factors to climate change  
(Cluster 4 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Flying/air travel	76	59.2	28.9	5.3	6.6	0	0	1.59
Food imported to the UK from overseas countries	78	30.8	42.3	15.4	6.4	1.3	3.8	2.01
Driving a car	78	25.6	50.0	19.2	3.8	1.3	0	2.05
Packaging on products	76	19.7	30.3	26.3	15.8	3.9	3.9	2.52
Going on holidays overseas	78	16.7	35.9	34.6	11.5	1.3	0	2.45
Heating homes	77	20.8	39.0	27.3	5.2	6.5	1.3	2.37
Use of electrical products in home	77	9.1	23.4	41.6	19.5	6.5	0	2.91
Using public transport	78	1.3	17.9	43.6	24.4	10.3	2.6	3.25
Using aerosol cans	72	2.8	20.8	31.9	30.6	11.1	2.8	3.27

**Views on the size of the contribution of various factors to climate change  
(Cluster 5 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Flying/air travel	72	5.6	18.1	30.6	25.0	15.3	5.6	3.28
Food imported to the UK from overseas countries	71	7.0	25.4	25.4	15.5	16.9	9.9	3.11
Driving a car	73	2.7	15.1	27.4	31.5	20.5	2.7	3.54
Packaging on products	70	7.1	18.6	17.1	17.1	28.6	11.4	3.47
Going on holidays overseas	73	1.4	9.6	21.9	31.5	28.8	6.8	3.82
Heating homes	74	4.1	12.2	24.3	28.4	25.7	5.4	3.63
Use of electrical products in home	74	0	8.1	10.8	40.5	33.8	6.8	4.07
Using public transport	73	2.7	6.8	24.7	32.9	27.4	5.5	3.80
Using aerosol cans	73	1.4	13.7	8.2	31.5	32.9	12.3	3.92



**Views on the size of the contribution of various holiday related factors to climate change (All respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Air travel/flying to the destination	603	31.5	34.3	19.4	8.0	3.8	3.0	2.15
Air conditioning used in tourist accommodation	603	8.0	31.3	32.0	17.7	5.1	5.8	2.78
Car driving to the destination	602	5.3	31.4	38.5	16.8	5.1	2.8	2.81
Coach travel to the destination	593	3.2	19.9	38.6	23.9	9.9	4.4	3.18
Water used in tourist accommodation	602	4.7	16.6	30.7	29.6	12.3	6.1	3.28
Heating used in tourist accommodation	598	4.0	15.1	32.1	27.9	14.5	6.4	3.34
Train travel to the destination	595	1.5	15.5	38.5	29.6	10.9	4.0	3.35
Ferry travel to the destination	597	2.0	12.4	35.3	31.0	13.6	5.7	3.45
Eating at restaurants	596	2.0	7.2	30.7	38.1	15.4	6.5	3.61

**Views on the size of the contribution of various holiday related factors to climate change (Cluster 1 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Air travel/flying to the destination	139	20.9	43.9	21.6	7.9	2.2	3.6	2.24
Air conditioning used in tourist accommodation	139	5.8	28.1	37.4	17.3	5.0	6.5	2.87
Car driving to the destination	139	2.2	25.9	43.2	21.6	3.6	3.6	2.99
Coach travel to the destination	138	1.4	15.2	37.7	30.4	11.6	3.6	3.37
Water used in tourist accommodation	140	0.7	13.6	35.7	31.4	11.4	7.1	3.42
Heating used in tourist accommodation	139	1.4	15.8	31.7	29.5	13.7	7.9	3.41
Train travel to the destination	140	0	13.6	35.7	38.6	8.6	3.6	3.44
Ferry travel to the destination	139	0	9.4	32.4	41.7	12.2	4.3	3.59
Eating at restaurants	138	1.4	5.1	27.5	42.8	15.2	8.0	3.71

**Views on the size of the contribution of various holiday related factors to climate change (Cluster 2 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Air travel/flying to the destination	159	25.2	37.7	25.2	7.5	0	4.4	2.16
Air conditioning used in tourist accommodation	160	8.1	28.8	33.8	21.3	1.3	6.9	2.77
Car driving to the destination	160	6.3	33.8	38.8	13.1	3.1	5.0	2.72
Coach travel to the destination	159	3.8	22.6	42.8	18.2	7.5	5.0	3.03
Water used in tourist accommodation	159	3.8	16.4	34.0	31.4	8.8	5.7	3.27
Heating used in tourist accommodation	160	3.8	13.8	31.9	28.8	16.3	5.6	3.42
Train travel to the destination	157	2.5	15.3	41.4	29.3	5.7	5.7	3.22
Ferry travel to the destination	160	1.9	16.9	38.8	25.6	8.8	8.1	3.24
Eating at restaurants	159	1.3	6.9	32.7	40.9	11.9	6.3	3.59

**Views on the size of the contribution of various holiday related factors to climate change (Cluster 3 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Air travel/flying to the destination	94	47.9	34.0	13.8	3.2	0	1.1	1.72
Air conditioning used in tourist accommodation	93	9.7	41.9	33.3	12.9	0	2.2	2.51
Car driving to the destination	94	7.4	41.5	37.2	12.8	0	1.1	2.56
Coach travel to the destination	93	3.2	30.1	43.0	17.2	4.3	2.2	2.89
Water used in tourist accommodation	94	6.4	19.1	37.2	29.8	5.3	2.1	3.09
Heating used in tourist accommodation	92	4.3	16.3	41.3	28.3	6.5	3.3	3.17
Train travel to the destination	93	2.2	19.4	46.2	22.6	8.6	1.1	3.16
Ferry travel to the destination	92	3.3	15.2	40.2	27.2	10.9	3.3	3.28
Eating at restaurants	94	3.2	7.4	42.6	37.2	7.4	2.1	3.39

**Views on the size of the contribution of various holiday related factors to climate change (Cluster 4 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Air travel/flying to the destination	78	56.4	32.1	7.7	2.6	1.3	0	1.60
Air conditioning used in tourist accommodation	78	16.7	41.0	28.2	7.7	3.8	2.6	2.39
Car driving to the destination	78	10.3	41.0	42.3	5.1	1.3	0	2.46
Coach travel to the destination	76	3.9	26.3	43.4	21.1	3.9	1.3	2.95
Water used in tourist accommodation	78	10.3	29.5	32.1	12.8	11.5	3.8	2.85
Heating used in tourist accommodation	77	7.8	20.8	41.6	16.9	10.4	2.6	3.01
Train travel to the destination	77	2.6	18.2	46.8	23.4	7.8	1.3	3.16
Ferry travel to the destination	77	2.6	16.9	48.1	24.7	6.5	1.3	3.16
Eating at restaurants	77	1.3	14.3	36.4	32.5	7.8	7.8	3.34

**Views on the size of the contribution of various holiday related factors to climate change (Cluster 5 respondents)**

* Results in percentage %	N	Very Large*	Large*	Medium*	Small*	Very Small*	Uncertain*	Mean
Air travel/flying to the destination	72	4.2	20.8	26.4	23.6	20.8	4.2	3.38
Air conditioning used in tourist accommodation	73	0	17.8	24.7	31.5	19.2	6.8	3.56
Car driving to the destination	72	1.4	8.3	26.4	40.3	20.8	2.8	3.73
Coach travel to the destination	71	1.4	2.8	18.3	43.7	28.2	5.6	4.00
Water used in tourist accommodation	73	0	5.5	13.7	41.1	30.1	9.6	4.06
Heating used in tourist accommodation	72	1.4	5.6	12.5	37.5	31.9	11.1	4.05
Train travel to the destination	72	0	2.8	16.7	36.1	37.5	6.9	4.16
Ferry travel to the destination	73	1.4	1.4	13.7	39.7	35.6	8.2	4.16
Eating at restaurants	72	0	2.8	5.6	38.9	45.8	6.9	4.37