

8/1/2018

MASTER THESIS

AMBER TEN HAAF  
(900427291010)



WHY DO WE BEHAVE LESS RESPONSIBLE  
TOWARDS THE ENVIRONMENT ON A  
HOLIDAY?

*AN EXPLORATION OF PRO-ENVIRONMENTAL  
HOLIDAY BEHAVIOUR*



WAGENINGEN  
UNIVERSITY & RESEARCH

CULTURAL GEOGRAPHY CHAIR GROUP

GEO-80436

EXAMINERS: MAARTEN JACOBS, RENÉ VAN DER DUIM

## TABLE OF CONTENT

---

INDEX OF TABLES AND FIGURES .....	4
ABSTRACT.....	5
1. INTRODUCTION.....	6
2. LITERATURE REVIEW.....	7
2.1. Tourism and environmental degradation.....	7
2.2. Pro-environmental behaviour .....	8
2.3. The gap between environmental attitudes and pro-environmental behaviour .....	9
2.4. Explaining the decrease .....	10
2.4.1. Perceived behavioural control.....	10
2.4.2. A holiday as break from environmental duties?.....	11
2.4.3. Habits.....	11
2.5. Selection of concepts and scientific relevance.....	12
3. THEORETICAL FRAMEWORK.....	13
3.1. Theory of Planned Behaviour: Attitudes, Behaviour and Perceived Behavioural Control	13
3.1.1. Environmental attitudes and pro-environmental behaviour.....	13
3.1.2. Perceived Behavioural Control and pro-environmental behaviour.....	14
3.2. Pro-environmental holiday behaviour and pro-environmental behaviour at home....	15
3.3. Situational beliefs and pro-environmental holiday behaviour .....	16
3.4. Conceptual model.....	17
4. METHODOLOGY .....	19
4.1. Measurement of concepts.....	19
4.1.1. Pro-environmental home and holiday behaviour.....	19
4.1.2. Environmental attitudes .....	22
4.1.3. Perceived Behavioural Control .....	24
4.1.4. Situational beliefs.....	25
4.2. Data collection.....	25
4.3. Data analysis.....	26
5. RESULTS.....	27
5.1. Descriptive statistics.....	27
5.1.1. Sample size .....	27
5.1.2. Demographics sample group.....	27
5.1.3. Type of holiday sample group .....	28
5.1.4. Descriptive statistics of decrease in pro-environmental behaviour .....	29
5.1.5. Scale analysis .....	31
5.2. Predictors for pro-environmental holiday behaviour .....	33
5.2.1. Result multiple regression.....	33
5.2.2. Environmental attitudes and behaviour.....	34

5.2.3.	Holiday behaviour and home behaviour .....	35
5.2.4.	Situational beliefs.....	35
5.3.	The moderating role of situational beliefs and perceived behavioural control.....	36
5.4.	Perceived behavioural control .....	37
6.	DISCUSSION .....	39
6.1.	Main findings.....	39
6.1.1.	Predictive value of environmental attitudes and other factors.....	39
6.1.2.	The importance of perceived behavioural control.....	39
6.1.3.	Considering habits in understanding pro-environmental holiday behaviour .....	40
6.2.	Other findings.....	40
6.2.1.	Pro-environmental behaviour as distinct types of behaviour.....	40
6.2.2.	The role of situational beliefs .....	41
6.3.	Generalisation .....	42
6.4.	Scientific relevance .....	42
7.	CONCLUSION .....	43
7.1.	Are situational beliefs, environmental attitudes, perceived behavioural control and habits predicting pro-environmental holiday behaviour?.....	43
7.2.	Are situational beliefs and perceived behavioural control moderators?.....	43
7.3.	How can the decrease in pro-environmental behaviour be explained through perceived behavioural control?.....	43
	REFERENCES .....	44
	Appendix A: Questionnaire .....	48

## INDEX OF TABLES AND FIGURES

---

### *Theoretical framework*

---

Figure 1: Conceptual model.....	17
---------------------------------	----

### *Methodology*

---

Table 1: Variables for pro-environmental home behaviour .....	21
Table 2: Variables for pro-environmental holiday behaviour .....	22
Table 3: Items environmental attitudes.....	24
Table 4: Variables perceived behavioural control .....	24
Table 5: Variables for situational beliefs .....	25

### *Results*

---

Table 6: Results of crosstabulation SPSS in number of respondents (N) .....	29
Table 7: Results scale analyses .....	31
Table 8: Overview results multiple regression per pro-environmental holiday behaviour.....	33
Table 9: Results of regression environmental attitudes – pro-environmental behaviour.....	34
Table 10: Result of regression home behaviour – holiday behaviour.....	35
Table 11: Result of regression situational beliefs – behaviour .....	35
Table 12: Moderating effect of perceived behavioural control .....	36
Table 13: Results conditional effects of interaction .....	36
Table 14: Comparison home and holiday context with perceived behavioural control.....	37
Table 15: Multiple regression recycling home and holiday context.....	37
Table 16: Descriptive statistics perceived behavioural control in home and holiday context .....	38
Figure 2: Demographics Respondents.....	27
Figure 3: Educational background respondents (N) .....	28
Figure 4: Overview type of holiday .....	28
Figure 5: Overview holiday destination respondents .....	29
Figure 6: Overview Pro-environmental behaviour (N).....	30
Figure 7: Visual representation interaction effect .....	36

## ABSTRACT

---

This master thesis focuses on understanding individual pro-environmental behaviour on a holiday. Three problems will be discussed: the attitude-behaviour gap, factors that predict pro-environmental holiday and understanding a decrease of recycling behaviour. The predictive value of attitudes, habits, norms and perceived behavioural control will be studied in relation to pro-environmental behaviour that people undertook during their last holiday. Furthermore the decrease of recycling behaviour will be explained by means of perceived behavioural control. Three behaviours will be studied in detail: energy saving behaviour, recycling and meat reduction. The results of this present study have shown that every behaviour has its own predictors. Recycling is best explained by perceived behavioural control and meat reduction by habits. It will be argued that there is not necessarily a gap between environmental attitudes and pro-environmental holiday behaviour as correlations are found. Other factors are more important in understanding determinants of holiday behaviour because behaviour is not merely a result of attitudes. This study furthermore points out that beliefs and attitudes have little predictive value on behaviour but that habits and perceived behavioural control are more important.

## 1. INTRODUCTION

---

This master thesis focuses on individual tourism behaviour in relation to environmental degradation. In general, people tend to behave less responsible towards the environment on a holiday compared to home. With continued environmental degradation, it is important to understand this decrease hence this thesis aims at providing insights in three issues related to the decrease of pro-environmental holiday behaviour: 1) the environmental attitude- pro-environmental behaviour gap, 2) predictive value of factors besides environmental attitudes and 3) considering perceived behavioural control as explainer.

First, it is often assumed that there is a gap between environmental attitudes and pro-environmental behaviour. Despite positive attitudes towards the environment, behaviour does not reflect these attitudes. A lot has been written about this so-called gap, but empirical data is lacking in a holiday context. This thesis will thus investigate the relationship between environmental attitudes and pro-environmental holiday behaviour.

Secondly, this study measures whether other factors are more important in understanding the decrease besides environmental attitudes. This study combines the identified factors into a single study. Habits, norms and attitudes are considered to be important in understanding pro-environmental behaviour in general, and may also be of importance in understanding holiday behaviour. This study will focus on the predictive value of environmental behaviour at home, environmental attitudes and situational beliefs about the importance of environmental duties on a holiday compared to home,

Third, barriers and constraints have often been studied in order to explain the decrease of pro-environmental behaviour. Constraints are often studied in relation to a specific behaviour or linked to practical barriers, which are often context specific. Therefore this study does not aim at providing information about specific constraints, but the perception of constraints and therefore perceived behavioural control will be used to explain the decrease in pro-environmental behaviour on a holiday compared to home behaviour.

The selection of concepts and literature gaps have resulted in the following research questions which will be central to this thesis:

1. Are situational beliefs, environmental attitudes, perceived behavioural control and home behaviour, predicting pro-environmental holiday behaviour?
2. Do situational beliefs and perceived behavioural control have a moderating role in explaining pro-environmental holiday behaviour?
3. How can the decrease in pro-environmental behaviour between the holiday and home context be explained through perceived behavioural control?

This thesis starts first with a literature review that functions as an extended introduction where all statements made in this introduction will be elaborated on and definitions will be provided for the described concepts. In the third chapter, a theoretical framework will be used for studying relationships between the selected concepts. The theory of planned behaviour will be used to formulate hypotheses. In the methodology chapter, the results of the first two chapters will lead to the design of a field study in order to test the hypotheses. Chapter 5 will present the results of this field study and chapter six, the discussion, will link these results back to the literature. In the last chapter, the conclusion the research questions will be answered.

## 2. LITERATURE REVIEW

---

In this chapter the statements from the introduction will be further elaborated on. First the relationship between tourism and environmental degradation will be explained that provides relevance for studying tourism behaviour in relation to environmental degradation. Secondly, pro-environmental will be defined and explained. Thirdly, pro-environmental behaviour will be related to environmental attitudes and contains literature about the gap between environmental attitudes and pro-environmental behaviour. Fourth, other factors for this decrease will be investigated that will lead to the selection of concepts that will be used in this thesis.

### 2.1. Tourism and environmental degradation

---

Despite efforts to reduce greenhouse gas emissions and adapt to environmental degradation, emissions keep increasing and environmental degradation continues. Without a change in human behaviour and a continued population growth, it is expected that resource extraction will double by 2050 according to the UNEP (Hatfield-Dodds et al., 2017). With environmental degradation is meant all environmental related problems such as air pollution, climate change, water scarcity and waste issues that are leading to disrupted ecosystems and are forming threats to humanity. The private sector is important to consider as most of the CO<sub>2</sub> emissions come from fossil fuel burning. The IPCC, (Edenhofer et al., 2014) states that 65% of the harmful greenhouse gasses come from fossil fuel burning and 11% through deforestation. The contribution of tourism to environmental degradation may vary in percentages. Tourism as sector is intermingled with other sectors that contribute to climate change such as transportation, energy usage and agriculture. Tourism when considered as a sector, is accountable for 5% of the global emissions according to the UNWTO & IPCC (Nicholls, 2014; Scott et al., 2008). However, with growing tourism numbers, tourism is an influential contributor to greenhouse gas emissions. International arrival numbers are increasing rapidly and has grown faster than other forms of trade (Scott et al., 2008).

Tourism jobs are often considered as an alternative livelihood for people that are currently undertaking environmental harmful practices such as mining, overfishing and deforestation. Although these alternatives might lead to an improved natural environment, tourism practices contribute largely to the global CO<sub>2</sub> emissions. This concerns mainly the flights as this is considered to be responsible for 40% of the emissions caused by the transportation sector (Scott et al., 2008). However, all these people on a holiday have also an impact on other factors that contribute to emissions, such as transport while being on a holiday, energy usage and waste production. Accommodation is responsible for 20% of the emissions from tourism as heating or air-conditioning often requires electricity that mainly has been subtracted from fossil fuels (Scott et al., 2008). Forming policy on the international level is one way to improve the current environmental situation, but the component of household behaviour is also important to consider. Climate change as a global threat for humanity and biodiversity, requires national governments to reach consensus about an approach which is often lacking (Pinkse & Kolk, 2012). Also changing the tourism industry might be a difficult challenge due to economic interests involved. It is therefore important to consider individual behaviour as a force to change the global tourism industry (G. A. Miller, 2003). With increasing greenhouse gas emissions and increasing tourism numbers, it is important to understand individual behaviour which will be discussed in the next section.

## 2.2. Pro-environmental behaviour

---

Individual behaviour to reduce environmental degradation can be conceptualised as pro-environmental behaviour. It can be understood as conscious behaviour to minimum impacts, or as behaviour in that has little or no negative impacts on the environment without an environmental motivation (Steg, Van den Berg, & De Groot, 2013). In general, pro-environmental behaviour is the result of the interplay between various psycho-social factors such as knowledge, constraints, opportunities, personal values and motives (Bamberg & Möser, 2007). However, this regards mainly mental dispositions and opportunistic reasons while other factors have been identified that have a relationship with pro-environmental behaviour. Gifford (2007; 2014) adds internal locus of control, personal norms, place attachment, environmental concern and a sense of personal responsibility. Also social influences, affect and habits are considered to be important in understanding pro-environmental behaviour (L. Steg & Buijs, 2004). This shows that pro-environmental behaviour is complex and depending on various (interdependent) factors (Kollmuss & Agyeman, 2002).

In order to contribute to improving environmental quality, it is important to take into account that not all pro-environmental behaviours are conscious decisions based on environmental attitudes and values. A division between impact-oriented and goal-directed pro-environmental behaviour can be distinguished. Goal-directed pro-environmental behaviour is motivated by environmental reasons but has not necessarily an impact on the environment whereas impact-oriented behaviour might be motivated by other reasons, but has positive impacts on the environment (Steg et al., 2013). For example, people might choose a bicycle as means of transportation because of health reasons instead of environmental motivations. As this thesis is focused on environmental degradation, impact-oriented pro-environmental behaviour is more relevant. Besides undertaking pro-environmental behaviour for other benefits, another implication of choosing impact oriented behaviour is the availability of facilities and household resources (L. Steg & Buijs, 2004). Despite environmental attitudes and intention undertake impactful behaviours, not all households have the resources to chose different options due to income or are restrained in other ways.

Most of the environmental problems that currently exist are rooted in human behaviour and thus understanding human behaviour provides insight in the solutions (Gifford, 2014). Although the impacts of individual households seems to be small, when it becomes collective behaviour, it is likely to have an actual impact on the environment (Stern, 2000). With the pressing environmental degradation, adaptation of lifestyles is required through more sustainable behaviour (Axon, 2017). The extent to which individuals can contribute to reducing environmental degradation depends on the impact of the behaviour, the amount of people that are engaging in behaviour and the amount of individuals that are willing to make sacrifices to change certain behaviours (Klößner, 2013). However, it is too simplistic to argue that when people are concerned with the environment, people will adjust their lifestyles. Next section will explain the problems around attitudes in relation to pro-environmental (holiday) behaviour.



### 2.3. The gap between environmental attitudes and pro-environmental behaviour

---

The first problem related to understanding holiday behaviour is the gap between environmental attitudes and pro-environmental holiday behaviour. Environmental attitudes are often associated with pro-environmental behaviour. It is often argued that despite positive attitudes, behaviour does not match with pro-environmental behaviour. This means that often people may find the environment important but their undertaken behaviour is not necessarily environmentally responsible.

Environmental attitudes have been defined by Gifford (2007) as “an individual’s concern for the physical environment as something that is worthy of protection, understanding or enhancement” (p61). An attitude in general refers to the “psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (Eagly & Chaiken, 1993, p. 1). In general it is assumed that attitudes consists of three components: a cognitive, an affective and a conative. Gifford (2007) argues in line with the general structure of attitudes that environmental attitudes also consist out of these components. The cognitive component refers to how a person thinks about the environment, the affective component refers to the feelings related to the environment and the conative refers to the behavioural intention towards the environment (Gifford, 2007). However, whether an attitude is constructed out of these three components is debatable, it is also argued that an attitude is the evaluative result of these beliefs and emotions (Fabrigar, Macdonald, & Wegener, 2005). For the sake of this thesis, an attitude is understood as “evaluative tendency that can both be inferred from and have an influence on beliefs, affect, and behaviour” (Milfont & Duckitt, 2010, p. 81).

Concern about the environmental consequences of human behaviour is not limited to the international level, most people are nowadays concerned with some extent about consequences of human behaviour on the environment (Gifford, 2014). The relationship between environmental attitudes and pro-environmental behaviour is identified, but often the relationship tends to be weak (Bamberg & Möser, 2007; Gifford, 2007; Kollmuss & Agyeman, 2002; L. Steg & Buijs, 2004; Tobler, Visschers, & Siegrist, 2012). The extend of concern regarding the environment differs on an individual level and does not necessarily relate to pro-environmental behaviour. As behaviour is more complex, it can occur that people are concerned, but do not act upon it (Budeanu, 2007; Culiberg & Elgaaied-Gambier, 2016; Gifford, 2007).

The gap between environmental attitudes and pro-environmental behaviour has also been studied in a tourism context. Findings confirm this gap between environmental attitudes and pro-environmental holiday behaviour. In different holiday contexts, studies have identified relationships between values, attitudes and future *intended* behaviour (Han, 2015; Han, Hwang, & Lee, 2016; Hedlund, 2011; Kiatkawsin & Han, 2017). However, this concerns mostly future intended behaviour, which can differ from actual behaviour (Gifford, 2007). Although people may have a positive attitude towards less harmful tourism products, only a couple of people act upon it by purchasing it (Antimova, Nawijn, & Peeters, 2012; Budeanu, 2007). It is indicated that out of the 70-80% of the people that did indicate to find the environment important, only 10% of this group eventually purchased an actual less harmful holiday package (Chafe & Honey, 2005). This shows the apparent gap between environmental attitudes and pro-environmental holiday behaviour and it is therefore relevant to study past holiday behaviour, rather than future intentions. Environmental attitudes are despite the assumed weak relationship with pro-environmental holiday behaviour important to study because people with positive environmental attitudes are more likely to engage in pro-environmental behaviour (McIntyre & Milfont, 2016) and it will therefore be investigated whether environmental attitudes indeed lead to pro-environmental holiday behaviour.

## 2.4. Explaining the decrease

---

It is relevant to understand why pro-environmental decreases on a holiday compared to the home situation. This section explores briefly the barriers that are identified in general and holiday specific. A couple of studies have claimed that people on a holiday behave less responsible towards the environment than at home (Dolnicar & Grün, 2009; Ganglmair-Wooliscroft & Wooliscroft, 2017; Kiatkawsin & Han, 2017; D. Miller, Merrilees, & Coghlan, 2015; Wearing, Cynn, Ponting, & McDonald, 2002). However, there are various explanations for this difference. A lack of facility availability, habits, a lack of facilities, a lack of moral obligations and wanting a break from environmental duties have been identified by several studies (Dolnicar & Grün, 2009; D. Miller et al., 2015; Wearing et al., 2002). Blake (1999) identified individual barriers, responsibility barriers and practical barriers that explain the gap between environmental concern and pro-environmental behaviour. In these categories fall beliefs and attitudes of lacking interests, lack of efficacy and a lack of resources which matches with the explanations for the decrease of pro-environmental holiday behaviour.

A main assumption is that raising awareness will lead to improved behaviour (Kollmuss & Agyeman, 2002). A lack of awareness in relation to pro-environmental holiday is for example that people in general perceive their holiday to have less influence on the environment than the actual impacts (Gatersleben, Steg, & Vlek, 2002). Regarding pro-environmental behaviour in general, a lot of attention has been given to raising awareness, education and environmental attitudes (Bamberg & Möser, 2007). However, human behaviour is more complex and can only be partly explained through attitudes, beliefs and norms (Gifford, 2014). With raising awareness, environmental attitudes might change but this is no guarantee that behaviour will also change due to the gap between attitudes and behaviour. As pro-environmental holiday behaviour is key to this thesis, a lack of awareness will therefore not be included as barrier within the scope of this thesis.

On a holiday, often infrastructure for pro-environmental behaviour is lacking, which constraints people in showing pro-environmental behaviour, despite environmental attitudes and behavioural intention. While a lack of infrastructure is an external barrier, the other factors can be defined as interpersonal and intrapersonal barriers. External barriers are possibly best in explaining the gap between attitudes and pro-environmental behaviour (Gifford, 2014). As facility availability is often context and destination depending, an in-depth analysis of facilities will be left out of the scope of this thesis. Besides external barriers, there are other psychosocial barriers that are possibly restraining pro-environmental behaviour. Especially on a holiday, when other beliefs and attitudes are possibly explaining behaviour, it is more relevant to study other types of barriers (Moghimehfar & Halpenny, 2016). These intrapersonal barriers and beliefs are therefore important in understanding the gap between pro-environmental holiday behaviour and environmental attitudes. A lack of moral obligations and wanting a break from environmental duties will be further explored in the next sections.

### 2.4.1. Perceived behavioural control

---

Beliefs regarding possibilities of pro-environmental behaviour on a holiday or beliefs of control can be conceptualised as perceived behavioural control. A belief refers to an attitude that is formed by individuals whenever something is regarded as the truth (Schwitzgebel, 2006). Perceived behavioural control can be defined as the difficulty that an individual perceives in achieving a certain behaviour (Ajzen, 1991). If a person on a holiday believes that pro-environmental behaviour is impossible or that it will not be effective, pro-environmental behaviour is less likely to occur, despite environmental attitudes. Perceived behavioural control consists of two sub-components: “self-efficacy (dealing largely with the ease or difficulty of performing a behaviour) and controllability (the

extent to which performance is up to the actor)" (Ajzen, 2002, p. 680). This extent to which performance is up to the actor relates to a lack of moral obligation that has been mentioned as a possible explanation for the decrease for pro-environmental holiday behaviour. It is argued that people on a holiday have less consideration towards their environment due to a lack of a moral obligation (Dolnicar & Grün, 2009). A lack of moral obligation indicates that people on a holiday also want a break from environmental duties that they carry at home (Dolnicar & Grün, 2009). This sense of responsibility remains largely unexplored in tourism research (Passafaro et al., 2015). Responsibility is important to consider because when people feel personally in charge of taking actions towards the environment, they are likely to undertake pro-environmental actions which in turn strengthens the personal commitment (Kollmuss & Agyeman, 2002; Stern, Dietz, Abel, Guagnano, & Kalof, 1999). Perceived behavioural control has not been studied in relation to both the holiday context and the domestic context while this section has pointed out the relevance of studying beliefs regarding responsibility and difficulty.

#### 2.4.2. A holiday as break from environmental duties?

---

Although holiday behaviour has an evident impact on the environment, the damage is not necessarily intended but instead it may be the result of a particular situation and setting (F. Kaiser & Kibbe, 2017). It is therefore necessary to place pro-environmental holiday behaviour in a particular tourism context. Instead of studying pro-environmental holiday behaviour in relation to general pro-environmental behaviour literature, also context specific factors need to be considered. An assumption is that the decrease can be partly explained through beliefs specifically associated with a holiday. As indicated, enjoying a carefree holiday and being duty free may play an important role in understanding why pro-environmental behaviour decreases on a holiday.

Being free from environmental duties on a holiday relates to norms as it is an example of a belief about what is considered to be appropriate on a holiday. In general there are two different categories of norms; being descriptive and injunctive norms. Descriptive norms are rules about what most people do while injunctive norms are rules about approval of these norms (Steg et al., 2013). The aim of this thesis is to gain insight in how beliefs that are perceived as normal have influenced pro-environmental holiday behaviour, thus the descriptive norms.

Regarding the situational difference of pro-environmental behaviour, in some cases these specific situational variables were most important to consider in understanding pro-environmental behaviour, while in some situations a sense of responsibility or moral obligation has been found to be more influential (Corraliza & Berenguer, 2000). Therefore it will be studied whether in a holiday context, situational beliefs are better explainers than the other factors. This concept is exploratory as in previous studies, situational beliefs are not conceptualised in such way. Factors of 'taking a break from environmental duties' have been studied, but it often assumed that this has an influence on behaviour but empirical data is lacking.

#### 2.4.3. Habits

---

It is simplistic to conclude that tourists do not want to behave pro-environmentally on a holiday because of being duty free as there is also an indication that pro-environmental behaviour is habitual (D. Miller et al., 2015). A habit can be defined as a "cognitive structure that automatically determines future behaviour by linking specific situational cues to behavioural patterns" (Steg et al., 2013, p. 361). In a context of pro-environmental behaviour, habits are perceived to be a barrier as habits are often restraining people from showing pro-environmental behaviour (Steg et al., 2013). In this study however, habits are perceived to be positive as the aim is to indicate whether pro-environmental

behaviour at home predicts pro-environmental holiday behaviour. This would indicate whether behaviours that are habits at home, also leads to pro-environmental behaviour on a holiday. It is unsure whether holiday related norms or habits are better explanations for pro-environmental holiday behaviour than environmental attitudes due to a lack of empirical data.

## 2.5. Selection of concepts and scientific relevance

---

The literature review has argued for concepts that are relevant in understanding pro-environmental holiday behaviour and how the decrease compared to home can be understood. Environmental attitudes, habits, situational beliefs and perceived behavioural control will be central to this thesis. As explained in the introduction, this thesis has one main objective: to understand the decrease of pro-environmental behaviour in a holiday compared to home. In order to meet this objective, two sub-objectives will be central to this thesis: to identify which factor explains holiday behaviour best and to understand how the decrease can be explained.

Concerning the first objective, the literature review has identified environmental attitudes, habits and norms to be of relevance in understanding holiday behaviour. Previous studies have identified that there might be a gap between environmental attitudes and pro-environmental holiday behaviour because despite positive environmental attitudes, holiday behaviour does not always match accordingly. If environmental attitudes do not relate to pro-environmental holiday behaviour, it is investigated what other factors may be able to explain pro-environmental holiday behaviour better. This study will combine these factors in one study in order to determine which factor is able to explain past holiday behaviour best. Regarding the second objective, perceived behavioural control and situational beliefs may be able to explain the decrease in pro-environmental holiday behaviour compared to home behaviour.

The selection of these concepts will mainly provide scientific relevance but practical relevance as well. This thesis provides scientific relevance in three ways as literature gaps have emerged from the literature review. First, there was no study found that has studied barriers in terms of perceived behavioural control both in the holiday context and the home context. This indicates whether beliefs form constraints in general, or that it is holiday specific. Secondly, there is uncertainty about the role of habits and the situational change of the home setting to the tourism setting. Although it is argued that pro-environmental behaviour at home is a predictor for behaviour on a holiday and that habits transfer (D. Miller et al., 2015; Wearing et al., 2002), only few studies have made the comparison directly in research. Third, environmental attitudes have been studied little in relation to both pro-environmental behaviour at home and on a holiday. Besides scientific relevance, this thesis has also practical relevance. In order to influence behaviour and to engage the public in pro-environmental behaviour in policy, it needs to be understood how factors are contributing to pro-environmental behaviour. Policymakers will have an indication whether to focus on facilities on a holiday destination that make habitual behaviour easily transferable, to focus more on awareness or on other types of barriers.

### 3. THEORETICAL FRAMEWORK

---

This chapter provides a theoretical frame about the relationships between the concepts introduced in the literature review; environmental attitudes, pro-environmental holiday behaviour, situational beliefs, and perceived behavioural control. By means of theory and empirical data, hypotheses will be formulated about the possible outcomes of the field study. The Theory of Planned Behaviour (Ajzen, 1991) will be used as a general theoretical framework to predict the relationships between concepts, and additional literature about pro-environmental holiday behaviour will be used to formulate hypotheses. Besides the Theory of Planned Behaviour, theory about habits and norms will be used to formulate hypotheses for the concepts situational beliefs and pro-environmental home behaviour. The results of this chapter will result in a conceptual model that will be central to the field study of this thesis. The conceptual model including an overview of hypotheses can be found in section 3.4.

#### 3.1. Theory of Planned Behaviour: Attitudes, Behaviour and Perceived Behavioural Control

---

The concepts perceived behavioural control, behaviour and attitudes are part of the theory of planned behaviour (Ajzen, 1991). The theory developed a model with the main assumption that people make decisions based on rational reasoning and that behaviour is best predicted by behavioural intentions (Steg et al., 2013). The theory explains how behaviour is indirectly influenced by attitude, subjective norm and perceived behavioural control. These three determinants influence the behavioural intention which influences actual behaviour. Out of these three determinants, perceived behavioural control is the only concept that also predicts actual behaviour directly because it is an estimation of the difficulty of executing the behaviour (Brug, 2007; Steg et al., 2013). The theory of planned behaviour has been developed as a reaction to the widely discussed poor predictive value of general attitudes for behaviour (Ajzen, 1991). The theory has been applied successfully across various settings and behaviours, and has also been widely used to explain and predict pro-environmental behaviour (Ajzen, 2011; Steg et al., 2013). In general, the predictive power of the model increases when other factors such as habits and feelings of responsibility are included as they were found to relate to intended behaviour (Steg et al., 2013). This supports the inclusion of pro-environmental behaviour at home and situational beliefs in the conceptual framework.

##### 3.1.1. Environmental attitudes and pro-environmental behaviour

---

Various definitions exist that relate to explaining the beliefs, feelings and values that an individual holds towards the environment. Environmental attitudes are understood as concern for the environment (Clayton, 2012; Gifford, 2007). It cannot be assumed that pro-environmental behaviour on a holiday relates directly to environmental attitudes that people have at home when they participate in a survey. The first reasons for the gap are methodological: often future intended behaviour in terms of purchase intention is measured which reflects an hypothetical situation which can differ from actual behaviour (Budeanu, 2007; Gifford, 2007). Decisions for a holiday are often based on availability, convenience, costs, climate and physical appearance (Budeanu, 2007; Goodwin & Francis, 2003). Therefore it can occur that people hypothetically will decide for a environmentally less harmful tourism product due to environmental attitudes, but not act upon it. When the relationship between environmental attitudes and actual observed behaviour is measured, the relationships indeed tends to be weaker (Clayton, 2012). Another consideration is the measurement of general attitudes for specific behaviours. Every behaviour has specific attitudes and therefore general constructs might not be able to explain specific behaviours (Clayton, 2012; Gifford, 2014; Steg et al., 2013). For example, a person can be concerned about the environment but might have a

negative attitude towards recycling but is positive towards solar panel usage. Ajzen (1991) recognizes this problem but argues that it is too simplistic to conclude that general attitudes and personality traits do not relate to behaviour due to a low predictive value. Instead, the influence of general attitudes is being weakened by other, more direct factors that are more specifically related to the behaviours (Ajzen, 1991).

The second reason for the gap between attitudes and behaviour is the influence of other factors. There is not necessarily a direct relationship between attitudes and behaviour (Ajzen, 1991; Bamberg & Möser, 2007), indicating that other constructs are mediating or moderating the relationship between attitudes and behaviour. In the theory of planned behaviour (Ajzen, 1991), it is argued that general attitudes only indirectly influence behaviour and that behavioural intention mediates this relationship. Concerning pro-environmental holiday behaviour, it cannot therefore not be assumed that there is a direct relationship with general environmental attitudes. As explained, various other factors such as convenience or enjoying a carefree holiday are influencing behaviour that explain the gap between environmental attitudes and behaviour. Generally, people on a holiday tend to focus on their own experiences and activities and have less consideration towards their impacts on the local environment (Santana-Jiménez & Hernández, 2011). This is different from general environmental concern as most people are nowadays concerned about the environment with a certain extent (Gifford, 2007). This does not necessarily indicate a difference in environmental attitudes at home and on a holiday, it indicates that other attitudes or other factors are guiding holiday behaviour rather than general environmental attitudes. Situational beliefs are possibly moderating the relationship between pro-environmental holiday behaviour and environmental attitudes. However, empirical data is lacking about the relationship between environmental attitudes in relation to past holiday behaviour. In the only empirical study that was found, it is argued that attitudes have a larger influence on the home context but are less important on a holiday (D. Miller et al., 2015).

### 3.1.2. Perceived Behavioural Control and pro-environmental behaviour

Perceived behavioural control concerns the evaluation of difficulty of executing the behaviour and depends on several beliefs about the difficulty, facilities and constraints towards the behaviour (Steg et al., 2013). The concept of perceived behavioural control consists of self-efficacy and controllability (Ajzen, 2002), which both correlate with pro-environmental behaviour (Bamberg & Möser, 2007; Gifford, 2014). The distinction has been made because finding a behaviour difficult to execute and having control over it are different concepts that both relate to the perception of difficulty of performing behaviour. Empirical data support the distinction between the two components and it is argued that self-efficacy is usually a better predictor than controllability (Trafimow, Sheeran, Conner, & Finlay, 2002). Perceived behavioural control relates directly to pro-environmental behaviour (Brug, 2007; Klöckner, 2013; Steg et al., 2013) and it can therefore be expected that there is a direct relationship between the two sub-components and pro-environmental behaviour.

#### *Self-efficacy*

This sub-component of perceived behavioural control has been first introduced by Bandura (1982) and is “concerned with judgements of how well one can execute courses of action required to deal with prospective situations” (Bandura, 1982, p. 122). The main assumption is that behaviour is not only influenced by the intentions, but also the confidence of being able to execute the behaviour. Important is the difference between actual difficulty and the perception of difficulty. A perception is a mental construct that is defined individually, which does not necessarily reflect the actual

difficulty. Recycling for example may be easy executable because it is facilitated, but someone might still *perceive* it as difficult because it requires more efforts. Actual barriers for executing pro-environmental holiday behaviour will not be included, but beliefs of self-efficacy will be included. Beliefs of self-efficacy have not been measured in both contexts and therefore no clear hypothesis can be provided. However as indicated, people on a holiday tend to behave less responsible compared to home hence the hypothesis is based on the assumption that people at home feel more enabled to execute pro-environmental behaviour. An assumption is that at home infrastructure is known and on a holiday it may require more effort which makes pro-environmental behaviour to be perceived as more difficult. Self-efficacy may relate to the difficulty of behaviours as some pro-environmental behaviours may require more effort.

### *Controllability*

---

For this sub-component, various terminology can be found. Whereas Ajzen (2002) uses controllability, Trafimow et al. use (2002) perceived control. "Perceived control refers to the extent to which people consider the performance of a behaviour to be under their voluntary control" (Trafimow et al., 2002, p. 101), which is consistent with the explanation of Ajzen (2002) of "the extent to which performance is up to the actor" (Ajzen, 2002, p. 680). Besides finding a behaviour difficult to execute, perceived behavioural control relates to having control. People can find behaviour difficult to perform but still feel they have control over it and therefore the distinction is important to make. Trafimow et al. (2002) place the emphasis on voluntary control. Pro-environmental holiday behaviour can be seen as voluntary as people can feel that they can decide themselves if they undertake pro-environmental behaviour on a holiday. This relates to perceptions of personal responsibility to control environmental behaviour. People can value the environment, but still feel that action is not up to the individual.

Dolnicar & Grün (2009) argue that a majority of respondents feel more morally obliged to undertake pro-environmental actions at home than on a holiday. This may be the result of the situational beliefs about taking a break from environmental duties. The situational beliefs may justify a decreased sense of responsibility. Beliefs that a person holds towards pro-environmental behaviour are influencing behaviour and through mechanisms of denial and justification, these beliefs are bridging the gap between positive environmental attitudes and pro-environmental behaviour (Antimova et al., 2012). Thus, the holiday context may justify the beliefs that someone holds about responsibility towards the environment on a holiday. Therefore it is expected that situational beliefs influence the relationship between perceived behavioural control and pro-environmental holiday behaviour.

### 3.2. Pro-environmental holiday behaviour and pro-environmental behaviour at home

---

The relationship between these concepts can be explained through the role of habits. Habits mean that some behaviour is the result of automatic mental mechanisms and that it is not based on conscious reasoning. The relationship between pro-environmental behaviour on a holiday and at home can possibly be explained through the role of habits as pro-environmental behaviour at a holiday might be a result of habitual behaviour at home. In general, the more often behaviour occurs, the more strong this automatic process becomes. When behaviour becomes a habit, the habit becomes stronger than the intention while behaviour that occurs only once or twice a year relies more on behavioural intention than on habits (Steg et al., 2013). However this provides no clarity on the relationship between a holiday and home context as the pro-environmental behaviour remains the same, only the context changes. Compared to pro-environmental behaviour at home, in

general people on a holiday tend to behave less responsible towards the environment than at home (Budeanu, 2007; Dolnicar & Grün, 2009; Ganglmair-Wooliscroft & Wooliscroft, 2017; D. Miller et al., 2015; Wearing et al., 2002).

Miller et al. (2015) argue that habits are the best explanation that cause pro-environmental behaviour at home to transfer to a tourism situation. Although the decrease in pro-environmental behaviour is noticed, behaviour that is habitual at home is likely to be habitual on a holiday. This mainly concerns little habits of switching off lights and is less applicable for larger influential behaviours such as recycling. Whereas Dolnicar & Grün (2009) identified habits to be of minor influence, Miller et al. (2015) placed the role of habits on the first place and argued that habits transfer from a domestic setting to a tourism setting. Habits are behaviour specific and people tend to either undertake behaviours in both the domestic and holiday setting, or in neither of those two contexts (Ganglmair-Wooliscroft & Wooliscroft, 2017). These results on habits seems to be contradicting to the assumption that a holiday means a time away that results in environmentally unfriendly behaviour. It will therefore be measured whether pro-environmental behaviour at home predicts pro-environmental holiday behaviour and whether habitual behaviour at home also leads to pro-environmental holiday behaviour.

### 3.3. Situational beliefs and pro-environmental holiday behaviour

Norms seem to have a significant contribution to pro-environmental behaviour although this influence is often underestimated by respondents themselves (Steg et al., 2013). Social norms are often better predictors for pro-environmental behaviour than attitudes (Gifford, 2007). Similarly, Kollmuss & Agyeman (2002) argue that social norms influence attitudes which influences pro-environmental behaviour. This indicates that besides a direct influence on behaviour, norms also seem to influence other factors and therefore indirectly influence behaviour. The strength of the influence of social norms on pro-environmental behaviour depends on salience, group size, reference groups and personal norms (Steg et al., 2013). The belief of 'I am on a holiday and therefore I am allowed to take a break from environmental duties' is an example of norm salience. Norm salience "refer to beliefs about the common or appropriate behaviour in a specific setting" (Steg et al., 2013, p. 156). Behaviour that is perceived to be appropriate at home, might not be perceived as appropriate on a holiday.

People do not travel because of environmental attitudes, but other factors such as relaxation and escaping seem to be important. In general, needs of comfort, power, pleasure and status often play an important role as environmental degradation is a result of these desires (Stern, 2000). Therefore, the decrease in pro-environmental behaviour on a holiday is possibly best explainable by the normative beliefs about going on a holiday and the justification for wanting comfort and pleasure. When pro-environmental behaviour is placed in a different context with different dispositions, it is argued that the predictive power of attitudes tends to become lower (Corraliza & Berenguer, 2000). This means that the situational factors of a holiday may become stronger than general environmental attitudes that guide pro-environmental behaviour at home.



### 3.4. Conceptual model

It is besides understanding what factors are influencing pro-environmental behaviour also important to understand how the factors interact (Gifford, 2014). The conceptual framework in will be central to this thesis. A distinction between moderating and mediating factors has to be made in order to understand the relationship between the concepts. A moderating variable explains the relationship between other variables (Gifford, 2007). Situational beliefs and perceived behavioural control in this model will be considered as a possible moderating factor, meaning that these factors possibly explain the strength of the relationship between the other factors in relation to pro-environmental holiday behaviour. This explains the arrows that are pointed at other relationships. In this framework, general attitudes will be compared to both the holiday and home context in order to define whether the relationship between attitudes and behaviour is stronger for the home context. Home behaviour is considered as a predictor for holiday behaviour. Perceived behavioural control are considered to be different for a holiday and home context and will therefore be measured separately per context.

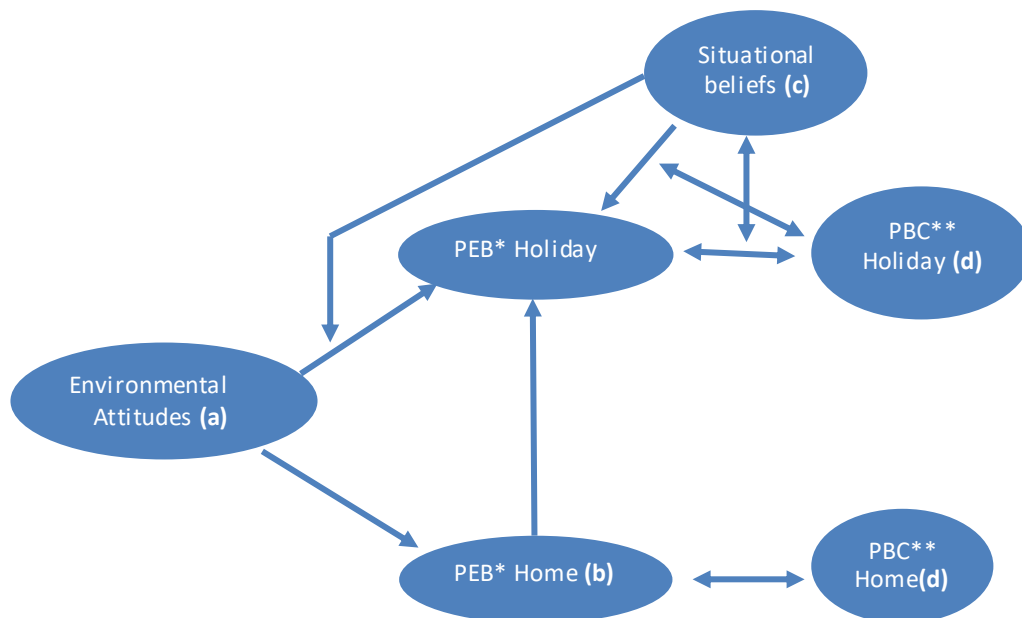


Figure 1: Conceptual model

\* Pro-environmental behaviour

\*\* Perceived Behavioural Control

The following hypotheses have been formulated based on the theoretical framework:

**(a) Environmental attitudes:**

- Environmental attitudes predict pro-environmental holiday behaviour
- Environmental attitudes have a correlation with pro-environmental home behaviour
- Environmental attitudes have a correlation with pro-environmental holiday behaviour
- The relationship between environmental attitudes and pro-environmental behaviour is stronger in the home context

**(b) Habits:**

- Pro-environmental behaviour at home predicts pro-environmental holiday behaviour

**(c) Situational beliefs:**

- Situational beliefs are the strongest predictor for pro-environmental holiday behaviour
- Situational beliefs moderate the strength between pro-environmental holiday behaviour and perceived behavioural control /environmental attitudes

**(d) Perceived behavioural control:**

- Perceived behavioural control predicts pro-environmental holiday behaviour
- Perceived behavioural control moderates the strength between pro-environmental holiday behaviour and situational beliefs/environmental attitudes
- Perceived behavioural control on a holiday correlates with pro-environmental holiday behaviour
- Perceived behavioural control at home correlates with pro-environmental behaviour at home
- Respondents feel more able at home to execute pro-environmental behaviour than on a holiday

## 4. METHODOLOGY

---

In this chapter, the results of the literature review, theoretical framework and conceptual model will be translated into an empirical study. This study has a quantitative survey design, which suits the purpose of this study. The aim is to gather data about general tendencies towards pro-environmental holiday and not to precisely gain insight in specific holiday cases. In this chapter for every concept it is explained what has been precisely measured and how it was measured. Furthermore the procedure for data collection and data analysis in SPSS will be described. The designed questionnaire can be found in Appendix A: Questionnaire.

### 4.1. Measurement of concepts

---

#### 4.1.1. Pro-environmental home and holiday behaviour

---

##### *Selecting impactful pro-environmental behaviours*

---

Based on an extensive report that has been developed by the International Panel for Climate Change (2014), indications for impactful pro-environmental behaviours can be provided. By looking at contributors to the CO<sub>2</sub> emissions per sector, it is visible how households could contribute to a reduction of the harmful greenhouse emissions. Energy, agricultural activities, waste management and transport are important sectors that have a large contribution to the global emissions and show where households can make a different decision for (Pachauri et al., 2014). First, burning fossil fuels for electricity is accountable for 25% and switching to available clean energy or reduce the amount of energy therefore reduces emissions. Second, agricultural activities are accountable for 24% and thus eating less meat and buying products that did not contribute to deforestation are impactful. Third, 14% of the emissions come from transportation as 95% from the transportation energy requires fossil fuel burning and thus using transport that uses clean energy does contribute to emission reduction or choosing locally produced food that did not require long distance transportation. Fourth and last, waste management is accountable for a considerable amount of CO<sub>2</sub> emissions and reducing burnable waste through recycling and reusing is effective in reducing emissions (Pachauri et al., 2014). Additionally, when looking specifically at environmental impacts of individual or household behaviour, it is visible what household activity has the highest environmental impact. Home heating has by far the highest impact, followed by a holiday (Steg et al., 2013).

As explained in the literature review, also tourism behaviour has a negative influence on the environment. This concerns mainly the flights as this is considered to be responsible for 40% of the emissions caused by the transportation sector. However, all these people on a holiday have also an impact on other factors that contribute to emissions, such as transport while being on a holiday, energy usage and waste production. Reducing travel distance, using energy efficient modes of transportation, decreasing resource consumption are important behaviours that may result in less environmental impact while being on a holiday (Budeanu, 2007)

This provided implications for to the selection of pro-environmental behaviour that have been measured in this study. This study focussed on the categories; transport, agricultural behaviour, waste management and energy usage as these are to be considered as impactful in both the holiday and home setting. These categories are still broad and were narrowed down to a few important impactful behaviours. In general, purchasing behaviour, reducing car usage and using less heating has more impact on the environment than refusing plastic bags (L. Steg & Vlek, 2009). The focus of this study is on car/plane usage, purchase decisions, meat consumption, recycling and energy conservation.

Pro-environmental behaviour can be measured in several ways, but the most common way is through self-reports. Actual observations are possibly the most accurate because it relies the least on social desirability and measurement errors (Steg et al., 2013). However, as observations are less applicable for this research design, self-reported behaviour has been used as a method. The measurement instrument of pro-environmental behaviours has been compiled out of different examples that have been used in previous studies. Various research has been conducted that has focused on specific behaviours which could be used for this study. However, most of the behaviours were measured specifically in order to determine the extent to which people undertake pro-environmental behaviour which is not the aim of this study.

The defined methods have been decided upon based on the consideration of treating pro-environmental behaviours as one-dimensional or multi-dimensional (Steg et al., 2013). This means the conceptualization of pro-environmental behaviour can be considered as a construct with different sub-dimensions (recycling, transport, etc) or as one-dimensional, meaning that the different types of behaviour can be measured as one construct (Steg et al., 2013). There are various arguments for treating pro-environmental behaviour as one dimension or as construct with different sub-constructs. Kaiser & Wilson (2004) argue that the measurement of pro-environmental behaviour can be treated as one-dimensional as they argue that the following behaviour can be placed into the same category “energy conservation, transportation, waste avoidance, consumerism, recycling and vicarious social behaviours toward conservation” (F. G. Kaiser & Wilson, 2004, p. 1537). This would mean that pro-environmental behaviour could be measured in one factor without considering consistency between the behaviours. However, this concerns goal-directed behaviour instead of impact-oriented behaviour. This means that when pro-environmental behaviour is defined from an environmental motivation perspective, behaviours can be seen as correlated. This assumption cannot be made for impact-oriented behaviour as environmental motivation may be lacking. If someone is environmentally motivated, it is more likely that the person both undertakes recycling efforts and takes public transport while concerning impact-oriented behaviour, someone may take the public transport due to practical reasons which not necessarily relates to recycling.

However, the consideration of pro-environmental behaviour either being multidimensional or one-dimensional is quite dichotomous. Barr & Gilg (2006) took a different approach and argue that “environmental behaviour transcends these somewhat compartmentalised boundaries and should be placed in an holistic context which recognises links between specific modes of behaviour” (Barr & Gilg, 2006, p. 917). The usual distinct categories of energy saving, water conservation, waste management and green consumerism resulted in different factors and categories: purchase decisions (energy saving appliances, reusing products etc), recycling behaviour (sorting for recycling, donating for charity) and habitual behaviour (switching off lights, etc). Hence, the chosen behaviours are considered as behaviours that do relate to each other when categories of habits, recycling and purchase decisions are considered. As not all behaviours have been considered to be applicable or impactful, a selection of items has been made in Table 1. As an addition, the measurement of behaviours regarding transportation and agricultural behaviours have been based on other studies. The Pro-environmental Behaviour Scale (PEBS) has been developed and consists of behaviours that have a large impact on the environment (Markle, 2013). Agricultural activities and transportation have been included in terms of reducing the amount of meat and using public transportation as alternative for car usage.

### Item formulation and response categories

Often behaviours are measured in terms of frequency or detailed calculations (Steg et al., 2013). This means that respondents are often asked to indicate how often they undertake pro-environmental behaviour on a 5-points scale or that respondents calculate frequency. These calculations are often more reliable than asking whether respondents agree/disagree with a statement about undertaking pro-environmental behaviour (Steg et al., 2013). However, the aim is not to determine precisely how often people undertake pro-environmental behaviour in a week at home, the aim of this concept is to measure whether home behaviour predicts holiday behaviour and therefore a pre-defined frequency scale is sufficient for this study. Response categories have been defined on a 5-points likert scale of never, almost never, occasionally, almost every time and every time (Vagias, 2006). This response scale is suitable as for a frequency scale, a 5-point scale is often more reliable than a 7-point scale and all answer categories should be labelled with words that reflect equal units of categories (Hine, Kormos, & Marks, 2016).

Furthermore, items regarding behaviour should be specified for a period of time as recalling memories is not always reliable due to the time period that has passed or significance of behaviour. Behaviours that occur daily and do not have a significant influence on someone's life should be measured in a time span of less than a month (recycling, public transport) whereas other behaviours may be more eventful and therefore easier to recall (purchasing appliances) (Hine et al., 2016). Some items in table 1 therefore include a time period of a month.

Factor	Concept	Items (Never/almost never/ occasionally/ almost always/always)
Purchase decisions*	Using energy efficient appliances *	When buying household appliances, I buy energy efficient appliances
Habits*	More clothes instead of more heating *	When it is cold I wear more clothes instead of turning heat up
Recycling*	Recycling waste *	How often in the last month have you separated waste in order to recycle?
Transportation **	Usage of public transport **	In the last month, how often have you used public transport instead of a car?
	Travelling by bicycle / foot **	How often did you travel short distances by bicycle/foot in the past month?
Food **	Reducing meat consumption **	During the past month, how often have you reduced the amount of meat you consume?
Renewable energy ***	Using renewable energy ***	I use renewable energy, either self-generated or by using a green supplier ***

**Table 1: Variables for pro-environmental home behaviour**

\* Derived from Barr & Gilg (2006)

\*\* Derived from Markle (2013)

\*\*\* Own addition, will be measured on a yes/no scale

### Variables for pro-environmental holiday behaviour

When pro-environmental holiday has been measured in previous studies, either a comparison with home behaviour, future purchase intention or specific behaviour has been studied. These measures were not applicable for the aim of this study. The aim of this study is not to provide an exact comparison of pro-environmental behaviour in terms of decrease of specific behaviours, but to determine whether home behaviour predicts holiday behaviour. This lead to the implication that the measurements of behaviours did not necessarily have to be the same. A different set of items have been developed, following the structure of the measurement of home behaviour. As flights and accommodation are the most impactful behaviours, these have been included which are listed in

table 2. As no applicable measurement instrument have been found in previous studies, it cannot be guaranteed that the same factors of purchase decisions, recycling and habitual behaviour can be made. In the results more will be written about item reduction.

Concept	Items
Using eco-friendly accommodation	I have chosen for an eco-friendly accommodation (green energy or eco-label) *
Mode of transport to destination	I have used a plane to travel to my destination *
Mode of transport on a holiday	While being on a holiday, I have used planes to travel to another holiday destination *
Limiting energy	How often have you switched off heating / air-conditioning when you left the accommodation? **
Reducing amount of meat consumption	How often have you reduced the amount of meat you consumed? **
Waste management	How often have you separated and sorted your waste in order to recycle? **

**Table 2: Variables for pro-environmental holiday behaviour**

\* Response category: yes/no

\*\* Response category: never/almost never/ occasionally/almost always/always)

Some of the items for holiday behaviour are the same as home behaviour. In order to gain insight in the predictive value of home behaviour for holiday behaviour, this way of measuring behaviour indicates whether behaviour that is habitual at home, also leads to the same behaviours on a holiday. This concerns energy conservation, meat consumption and recycling. Although meat consumption and recycling are according to Barr & Gilg (2006) not included in the factor of habits, a comparison indicates whether behaviour transfers.

#### 4.1.2. Environmental attitudes

It has been explained that methodological considerations may lead to the gap between pro-environmental behaviour and attitudes due to the measurement of intended behaviour and general attitudes. The relationship between attitudes and pro-environmental behaviour tends to be stronger when attitudes are chosen that are specifically apply to the measured behaviours. In the theory of planned behaviour it is argued that the relationship between attitudes and behaviour is most strong when attitudes are selected specifically for the chosen behaviours (Ajzen, 2006). Also, as every behaviour has a specific set of predictors, it is argued that specific attitudes are more suitable for measuring pro-environmental behaviour (Gifford, 2014). This would plead for measuring specific attitudes, thus for example measuring the attitude towards taking airplanes. However this concerns the prediction of future behaviour and behavioural intention. As this thesis is focused on how general attitudes relate to past holiday behaviour, it is less relevant to measure specific attitudes.

Various measurement instruments have been developed to measure general environmental attitudes. The Environmental Attitudes Inventory developed by Milfont & Duckitt (2010), the New Environmental Paradigm by Dunlap & Van Liere (2000) and a measurement instrument developed by Kaiser et al. (1999) have been considered. Although the EAI and NEP have been applied widely and have been supported by several studies, a critical assessment of the items have resulted in the decision to use the less well-known measurement instrument by Gatersleben & Steg (2002).

The EAI has a couple of advantages: this measurement instrument is a compilation of the most important constructs that have been developed by earlier instruments (Gifford, 2014) and the EAI has incorporated the critique of the conceptualization of attitudes being the composition of three components instead of an attitude being a result of an interaction between affect, beliefs and

behaviours (Milfont & Duckitt, 2010). However, a closer investigation of the items have showed deficiencies of irrelevant and debatable items. The short version consists of 12 factors with each 2 items, whereby the same question was being asked twice: once formulated positively and again in reversed form. For example 'environmental movement activism' was measured in "*I would like to join and actively participate in an environmentalist group*" and "*I would NOT get involved in an environmentalist organization*" (Milfont & Duckitt, 2010, pp. 91-92). Also, some items were debatable and would therefore lead to invalid data. For example, 'support for interventionist conservation policies' was converted into items related to governmental control over the industry ("*governments should control the rate at which raw materials are used to ensure that they last as long as possible*", Milfont & Duckitt, 2010, p. 91). There are various ways of supporting conservation policy and limitations are not necessarily the only possible policy possible, providing subsidies for less harmful practices would be another option. This would result in an adjusted version of the scale, leading to unknown reliability and validity implications.

The NEP is also a well-known scale that has been used in several studies. The scale provides 15 items related to general ecological attitudes and would be suitable for this study as the scale has a high internal consistency and measures several general beliefs about the ecological worldview people hold towards the relationship between humans and the earth (Dunlap et al., 2000). However, some of the items were considered to be questionable. For example, "*the earth has plenty of natural resources if we just learn how to develop them*" (Dunlap et al., 2000, p. 433), which raises the question of how 'natural resources' can be 'developed' in the first place. Another example is the item "*humans will eventually learn enough about how nature works to be able to control it*" (Dunlap et al., 2000, p. 433). One may believe that humans already know enough about how nature works and therefore disagree with this item whereas another formulation of the item may result in a positive agreement. As this scale only exists of 15 items, leaving out 2 items would again lead to unknown reliability and validity implications.

Kaiser et al. (1999) have developed a not well-known scale for measuring environmental attitudes that relate to pro-environmental behaviour. It is assumed that rational-choice theories have excluded moral considerations and pro-environmental behaviour is an example of moral behaviour. The inclusion of these moral implications has been a valuable addition to the normal measurement of attitudes (F. G. Kaiser et al., 1999). The items were mostly evaluated as reliable and clear, however the scale used different sub-components for measuring attitudes that are perceived to be less relevant for the purpose of this study. Environmental attitudes are measured in terms of environmental knowledge, moral responsibility and values. As the aim of this study is to measure general environmental attitudes in relation to behaviour, it is less relevant to measure environmental knowledge. People may be knowledgeable about climate change and the effects of greenhouse gasses, but this does not necessarily indicate environmental concern or positive attitudes towards the environment. Also, environmental values have been converted into items related to the relationship between animals and humans. As this thesis is not focused on human-animal relationships but broader environmental attitudes, it is not valid to measure values towards animals.

Gatersleben & Steg (2002) have developed a measurement of environmental attitudes and beliefs that has been used successfully in at least two studies and (Gatersleben et al., 2002) and can therefore be seen as a valid measurement instrument. This scale is suitable because it consists of only 12 items (Table 3) that are related to environmental concern and the scale measures general attitudes and beliefs towards the environment. The internal consistency in previous studies has been very high (0.84) and can therefore besides valid, also be considered as reliable.

Items (completely disagree / disagree / neutral / agree / completely agree)
"Environmental pollution affects my health
Environmental problems have consequences for my life
I worry about environmental problems
I can see with my own eyes that the environment is deteriorating
Environmental problems are a risk for the future of my children
Environmental problems are exaggerated
Too much attention is paid to environmental problems
The attention given to the greenhouse effect is exaggerated
Saving threatened species is unnecessary luxury
I am optimistic about the environmental quality in the future
A better environment starts with myself
People who do not take the environment into account try to escape their responsibility"

**Table 3: Items environmental attitudes** (Gatersleben et al., 2002, p. 343)

#### 4.1.3. Perceived Behavioural Control

Perceived behavioural control can be different in different settings (Ajzen, 1991), which will argue for a measurement of perceived behavioural control per behaviour in both the holiday setting and the home setting. However, this study measures whether perceived behavioural control on a holiday is different from the home setting which means that differences per behaviour are less interesting. The general relationships are thus more important than measuring perceived behavioural control per behaviour. However this does provided methodological difficulties as it is more difficult to define items for pro-environmental behaviour in general. For example asking respondents to indicate whether they feel that taking no planes is under their control makes more sense than generalising the item into having control over pro-environmental behaviour in general. This issue was overcome by selecting variables and formulating items that made sense for pro-environmental behaviour in general.

The factors and variables of the measurement for perceived behavioural control have been derived from an example by Ajzen (2006), empirical studies compiled by Trafimow et al. (2002) and the theoretical framework. An overview can be found in Table 4. A distinction between controllability and self-efficacy has been made because the two may correlate highly, but there is no guarantee for high internal validity as the two concepts are distinct (Trafimow et al., 2002). Based on various empirical studies, Trafimow et al. (2002) conclude that items relating to 'having control' (it is under my control) and 'voluntary control' (action it is up to me) can be placed in one factor and 'difficulty' and 'confidence' in a second factor. 'Having control' in this study does relate to having the resources and facilities to undertake pro-environmental behaviour on a holiday, people may feel that they do not have control due to the available resources or facilities and therefore perceive behaviour as difficult.

Factor (Ajzen, 2002)	Concept	Item (completely disagree/disagree/neutral/agree / completely agree)
Self-efficacy	Confidence in undertaking behaviour (Ajzen, 2006)	I am confident that I have the right set of skills to undertake environmental actions
	Difficulty (Trafimow et al., 2002)	I find it difficult to undertake environmental actions
Controllability	Extent to which action is up to the actor (Ajzen, 2006)	I am myself responsible for undertaking environmental actions
	Having control (Trafimow et al., 2002)	I feel that I have the resources/facilities to undertake environmental actions

**Table 4: Variables perceived behavioural control**



#### 4.1.4. Situational beliefs

Based on the formulated hypotheses and conceptual framework, situational beliefs have been measured that may predict pro-environmental holiday behaviour and may explain the decrease in pro-environmental holiday behaviour compared to home behaviour. These items have been based on previous studies executed by Dolnicar & Grün (2009) and Miller et al. (2015) and have been reformulated in table 5. Taking a break from environmental duties and being carefree on a holiday have been included and two reversed items have been added.

Items
People on a holiday deserve a break from environmental duties
The environmental impact that a holiday causes is compensated by behaviour at home
On a holiday, environmental duties are as important as at home
People should not only take care of the environment at home, but also on a holiday
On a holiday people should not worry about the environmental impacts of holidays

**Table 5: Variables for situational beliefs**

#### 4.2. Data collection

The data collection has been executed between the 25<sup>th</sup> of October and the 9<sup>th</sup> of November 2017. An online version of the survey has been made and has been distributed through several social media channels. Several methods for data collection have been used in order to gather respondents. Through a virtual snowball effect on Facebook, rewarding students of Wageningen University and through social contacts, data has been collected. The virtual snowball effect may lead to a less controlled selection of respondents, but the benefit is that a larger group can be reached that may result in a larger sample (Baltar & Brunet, 2012). As this study does not have a clear target group, this method is found suitable for this study. Different Facebook groups have been used in order to gather data. Students of Wageningen University could win an University Dopper or a Wageningen University t-shirt. This has delivered the most respondents as the post in Wageningen Student Plaza (Facebook group with 24.000 students) has reached the most students. Through a personal Facebook account a broad range of people has been reached and through the snowball effect, respondents were found. The messages have been posted in English or Dutch and contained different explanations about the survey, based on the target group for the message. For example, in a group of applied psychologists, more was explained about holiday behaviour in relation to attitudes in order to attract intention while the own network has been approached with a general message. In order to avoid that only people interested in environmental issues were willing to click on the link, a sentence about the purpose of the study has been added.

The following messages are examples of messages that have been used on Facebook:

*Ben je in het laatste half jaar op vakantie geweest? Help mij dan met afstuderen! Vul deze vragenlijst in en ontvang mijn eeuwige dank :) Het gaat over milieuvriendelijk vakantie gedrag vergeleken met thuis en het kost je maximaal 10 minuten. Ook al ben je niet zo met het milieu bezig, ik ben nog steeds op zoek naar jou! (uiteraard is alles anoniem)*

*Want to win a FREE Wageningen University T-shirt or Dopper? Yes I know you do! The only thing you need to do is to help out a fellow student! Fill in this online questionnaire if you went on a holiday in the past 6 months. Among the completed questionnaires I will raffle some university products!*

In order to gain insight in the effectiveness of the different messages and the response rate, messages were not placed on the same day. As a result, the conclusion is that Wageningen Student Plaza has been the most effective as the amount of respondents quickly increased from 50 to over 250 within one day. Other methods were personal messages through WhatsApp including the link to the survey so respondents could conveniently participate.

#### 4.3. Data analysis

---

SPSS has been used as software programme to analyse the collected data. This section describes the general tests that have been used to measure the three research questions.

The first research question, 'Are situational beliefs, environmental attitudes, perceived behavioural control and home behaviour, predicting pro-environmental holiday behaviour?' contains the direct measurement of these predictors by means of simple and multiple regressions. Multiple regression measures whether the data predicts the dependent variable from one or more independent variables (Field, 2013). In this case, a linear model has been tested on the data with pro-environmental holiday behaviour as outcome variable and environmental attitudes, home behaviour and situational beliefs as predictor variables. Prediction of the independent variable can be used to predict future behaviour, but in this study it is interpreted whether the constructs are able to explain past holiday behaviour. The assumptions that have to be met for this test are 1) linearity, 2) heterogeneity of variance, 3) normally distributed errors, 4) multicollinearity and 5) non-zero variance. Concretely this means that assumptions of independent errors (Durbin-Watson  $\pm 2$ ), homoscedasticity of residuals (ZPRED vs ZRESID graphs), normal distributed errors (mean close to 0) and multicollinearity (Tolerance  $>0.2$ ) have to be met. Furthermore, obviously the significance level matters: results with  $p$  values smaller than .05 were taken into account. The interpretation of the  $R^2$  has been done by following the criteria of Cohen (1988) of  $R^2$  being 0.01 as small, 0.09 as medium and 0.25 as large. In order to generalise the finding beyond the sample group, the adjusted  $R^2$  ( $R^2_{adj}$ ) is reported.

The second research question, 'Do situational beliefs and perceived behavioural control have a moderating role in explaining pro-environmental holiday behaviour?' has been measured by means of moderation tests in SPSS through an additional PROCESS tool. This tool is especially designed for measuring moderating and mediating effects of variables and is less complicated than the procedure of SPSS (Hayes, 2012). The tool converts variables into centred variables (Score – Mean) and creates interaction effects for the prediction variables ( $Y \times M$ ) on the outcome variable ( $X$ ). Again, only  $b$ -values with significance levels smaller than .05 were taken into account. Thus, if the interaction effect was not significant, the variable perceived to moderate ( $M$ ) had no influence on the relationship of  $Y$  on  $X$ .

The third research question, 'how can the decrease in pro-environmental behaviour be explained through perceived behavioural control?', has been tested by means of correlation and regression tests. A correlation has been tested between pro-environmental holiday behaviour and perceived behavioural control on a holiday, and pro-environmental home behaviour and perceived behavioural control at home. A comparison of these two correlations provided information about whether perceived behavioural control is different in the two different situations. The main assumption of correlation tests is the normal distribution. Due to the large sample size the central limit theorem applies hence violation of this assumption is not perceived to lead to problems.

## 5. RESULTS

This chapter discusses the results of the data analyses and descriptive statistics of important concepts. This chapter starts with the descriptive statistics of the sample group and provides insight in the main problem of this thesis, the decrease of pro-environmental behaviour on a holiday. The second part of the results provides the main results by means of the measured hypotheses.

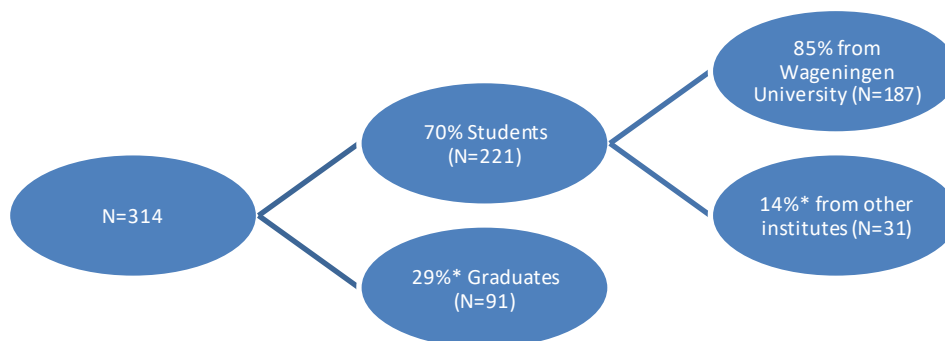
### 5.1. Descriptive statistics

#### 5.1.1. Sample size

In total, 314 respondents were willing to fill in the survey. In the online statistics it was visible that 523 people have opened the questionnaire, but have not filled in or completed the survey. It is not traceable how many people have been reached in total by the posts and a reliable non-response rate can therefore not be calculated. However, out of the people that have opened the link, 59% has completed the questionnaire. Out of the other 41%, the largest amount of people has not started the questionnaire and only a few have stopped halfway. Therefore these have not been included in the database in order to reduce the amount of missing values.

#### 5.1.2. Demographics sample group

Demographics that have been included in the survey were age, gender and educational level. The survey has by large been completed by females (81%) and students (70%). In total, the questionnaire has been mostly completed by students of Wageningen University & Research (figure 2). In total, out of the total sample (N=314), 60% are students of Wageningen (N=187).



**Figure 2: Demographics Respondents**

*\* percentages that do not add up to 100% contain a few missing values*

Furthermore, most of students are currently master students, while for the graduates the largest amount has an applied university degree. Figure 3 represents the educational background of respondents in percentages. It shows that most of the respondents that are students, are studying a master or bachelor at a university. This is explainable as the sample size consists of mostly Wageningen University students.

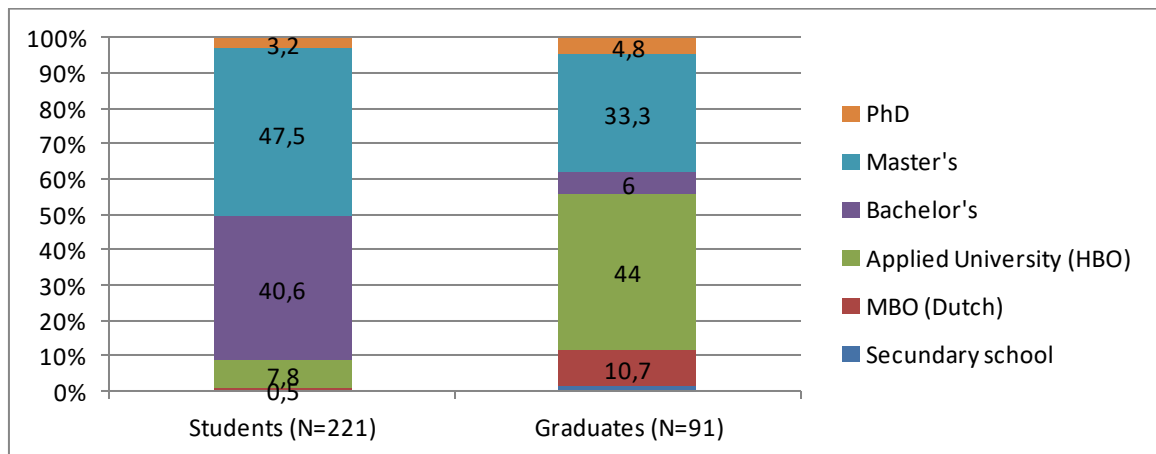


Figure 3: Educational background respondents (N)

### 5.1.3. Type of holiday sample group

Besides the general demographics, the descriptive statistics for the type of holiday have been checked. Travel duration, type of holiday and accommodation type were included as multiple choice questions in the survey. The destination and duration have been asked as open questions. The results can be found in the following figures.

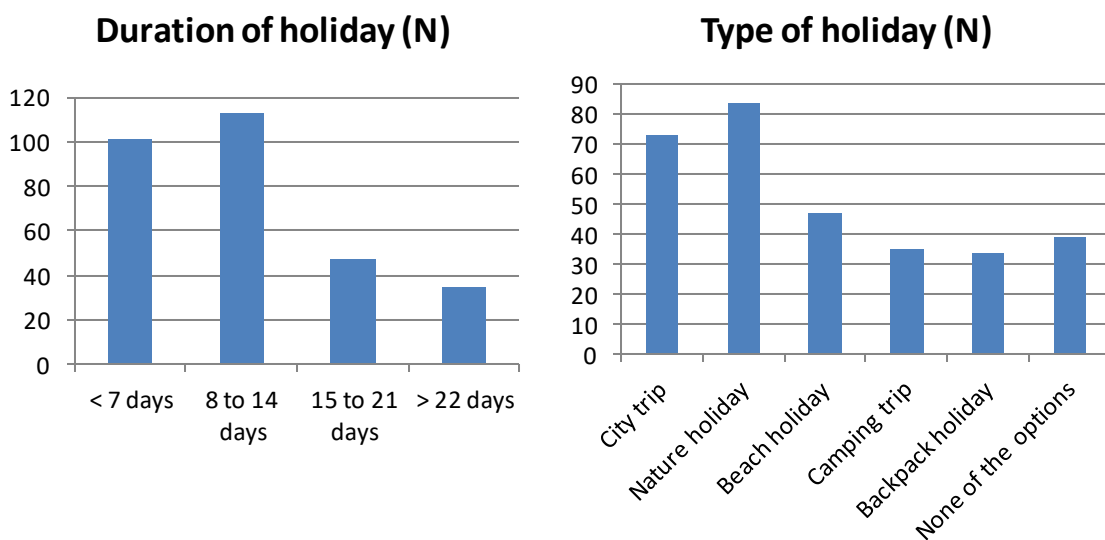


Figure 4: Overview type of holiday

Figure 4 shows a variety in duration of holiday and type of holiday. All different types of holidays that were listed as options has respondents. This increases the generalisation options as various types of holidays were found in the sample group. Furthermore the type of holiday has been linked to accommodation type in order to gather a more complete overview of the type of holiday that people enjoyed. The accommodation type for people that went on a city trip varied but mostly a hotel or a hostel has been chosen. For a nature holiday, most people have stayed at a holiday house or at a

campsite. At a beach holiday, most people have stayed at a hotel or a holiday house. In table 6 an overview can be found.

Accommodation type	Total (N)	City trip	Nature holiday	Beach holiday	Camping trip	Backpack holiday
Hotel	65	27	14	15	3	6
Holiday house	48	10	18	16	2	2
Bed&Breakfast	9		5	1	1	2
Hostel	35	14	6		1	14
AirBnB	32	10	10	7		5
Campsite	60		24	3	28	5
Friends	23	12	6	5		
<b>Total</b>	<b>272</b>	<b>73</b>	<b>83</b>	<b>47</b>	<b>35</b>	<b>34</b>

Table 6: Results of crosstabulation SPSS in number of respondents (N)

Also, most of the respondents have been on a holiday in Europe (78%). 5% has stayed in the Netherlands, 34% has enjoyed a holiday in Southern Europe (i.e. Spain, Portugal, Italy, Greece), 29% in Western or Northern Europe (i.e. Scandinavia, France, Germany) and 10% went to Eastern Europe (i.e. Poland, Serbia, Latvia). The other areas of the world have been represented less.

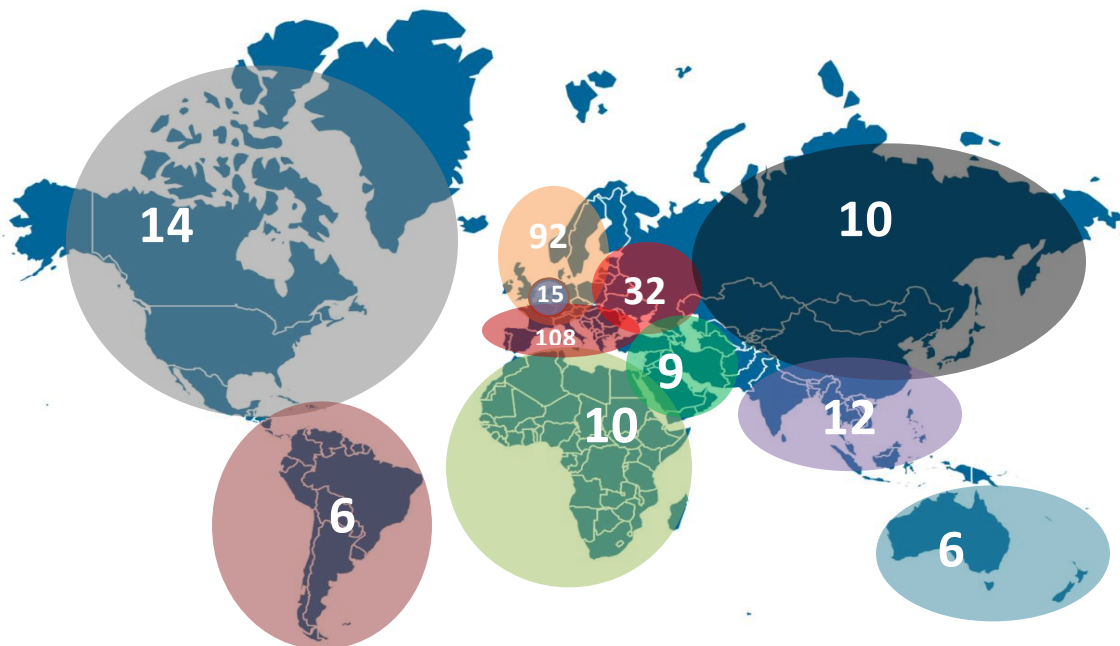


Figure 5: Overview holiday destination respondents

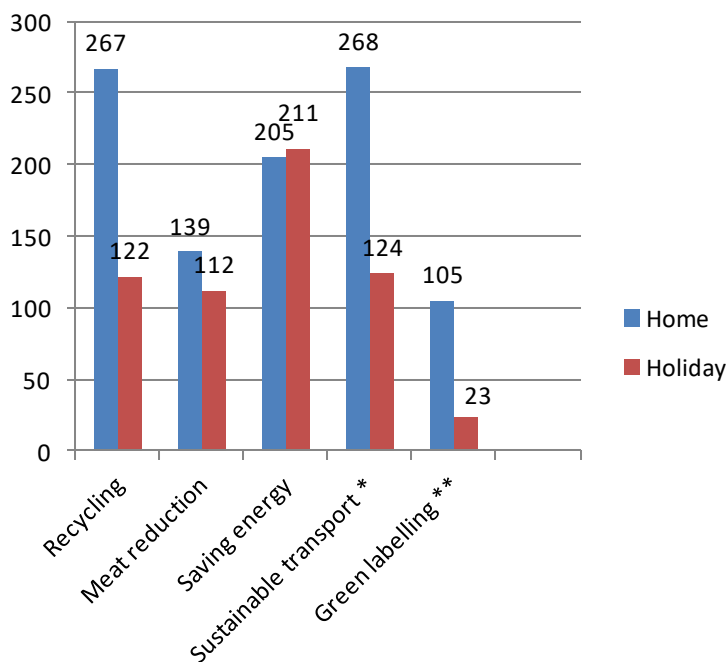
#### 5.1.4. Descriptive statistics of decrease in pro-environmental behaviour

In the introduction the problem of the decrease in pro-environmental behaviour has been described. Although the aim of this thesis is not to provide a detailed overview of this decrease, descriptive statistics provide an overview of the decrease within this sample group. Instead of assuming that pro-environmental behaviour in general decreases, the descriptive statistics show that this general decline not necessarily occurs but that behaviours need to be treated as independent.

In figure 6 the pro-environmental behaviours are listed for both contexts in number of respondents (N). For behaviours on a holiday, most respondents have saved energy, followed by reaching the destination without using a plane and by recycling. When looking at saving energy on a

holiday, this behaviour occurs the most as 75% of the respondents has indicated that they have turned the air-conditioning or heating off almost always or even always. Furthermore 40% has showed pro-environmental holiday behaviour by reaching the destination not by plane. As most of the respondents have enjoyed a holiday in Europe, a possible explanation is that the 40% has used a train or went by car to their holiday destination.

When looking at the difference between the two contexts, a decrease in recycling behaviour, transport and green labelling can be seen. The most interesting comparison concerns recycling behaviour. It is visible how especially recycling behaviour has decreased on a holiday as 85% indicates to do this frequently at home compared to 39% on a holiday. Furthermore sustainable transport and green labelling seem to be decreased, but for these items the comparison cannot be directly made. As most of the respondents have used the response category of 'I do not know' for green labelling, these descriptive statistics are unreliable in making conclusions about the decrease for green labelling. Also, although a decrease in sustainable forms of transport can be seen, the behaviours that were measured are unsuitable for comparison. Walking short distances at home cannot be directly compared with taking an airplane to a holiday destination. The purpose of this study is to identify factors that can explain the decrease in pro-environmental behaviour and not to provide a direct comparison. The decrease has been an assumption beforehand, but figure 6 shows that not all behaviours decrease as the reduction of meat and saving energy on a holiday remains fairly the same compared to home.



**Figure 6: Overview Pro-environmental behaviour (N). Only frequency categories 'almost always/always' are included**

\* s sustainable transport as walking/cycling for short distances (home), and not using an airplane (holiday)

\* green labelling as using green energy (home), and choosing a accommodation with eco-label (holiday)

### 5.1.5. Scale analysis

Before measuring relationships between concepts, the items of the survey have been reduced by creating new scale variables. This means that some items have been re-coded, reliability analyses were conducted and factor analyses were conducted. The following table describes the scale analyses per concept.

Scale	Items	$\alpha$ if deleted	$\alpha$	Sampling adequacy (KMO)	Mean / range after reduction
Environmental attitudes	Environmental pollution affects my health	0.83	<b>0.84</b>	n/a	M=4.03  Range 1.50-5.00
	Environmental problems have consequences for my life	0.83			
	I worry about environmental problems	0.82			
	I can see with my own eyes that the environment is deteriorating	0.83			
	Environmental problems are a risk for the future of my children	0.83			
	Environmental problems are exaggerated*	0.84			
	Too much attention is paid to environmental problems*	0.83			
	The attention given to the greenhouse effect is exaggerated*	0.82			
	Saving threatened species is unnecessary luxury*	0.82			
	I am optimistic about the environmental quality in the future*	0.82			
	A better environment starts with myself	0.84			
People who do not take the environment into account try to escape their responsibility	0.84				
Situational beliefs	People on a holiday deserve a break from environmental duties	0.80	<b>0.82</b>	n/a	M=1.79  Range 1.68-1.95
	The environmental impact that a holiday causes is compensated by behaviour at home	0.78			
	On a holiday people should not worry about the environmental impact of holidays	0.77			
	People should not only take the environment into account at home, but also on a holiday*	0.81			
	On a holiday, environmental duties are as important as at home*	0.78			
Perceived behavioural control Home	I feel that I have the resources/facilities to undertake environmental actions	0.59	<b>0.69</b>	0.73 Middling (Hutcheson & Sofroniou, 1999)	M=3.29  Range 2.95-3.53
	I am confident that I have the right set of skills to undertake environmental actions	0.57			
	I find it difficult to undertake environmental actions*	0.66			
	I am myself responsible for undertaking environmental actions	0.67			
Perceived behavioural control Holiday	I felt that I have the resources/facilities to undertake environmental actions	0.53	<b>0.69</b>	0.67 Mediocre (Hutcheson & Sofroniou, 1999)	M=2.77  Range 2.49-3.09
	I am confident that I had the right set of skills to undertake environmental actions	0.58			
	I found it difficult to undertake environmental actions*	0.75			
	I am myself responsible for undertaking environmental actions	0.65			
Pro-environmental behaviour holiday	How often have you separated and sorted your waste in order to recycle?	0.39	<b>0.55</b>	0.61 Mediocre	n/a
	How often have you reduced the amount of meat you consumed?	0.39			
	How often have you switched off heating / air-conditioning when you left the accommodation?	0.53			
Pro-environmental behaviour home	How often in the last month have you separated waste in order to recycle?	0.50	<b>0.51</b>	0.59 Miserable	n/a
	In the last month, how often have you used public transport instead of a car?	0.52			
	During the past month, how often have you reduced the amount of meat you consume?	0.41			
	How often did you travel short distances by bicycle/foot in the past month?	0.39			
	When it is cold I wear more clothes instead of turning heat up	0.37			
	When buying household appliances, I buy energy efficient appliances	0.56			

**Table 7: Results scale analyses**

The table shows that environmental attitudes, situational beliefs, perceived behavioural control at home and perceived behavioural control on a holiday have been converted into new variables. The created scale variables of environmental attitudes and situational beliefs have a high internal consistency ( $\alpha >.80$ ) according to guidelines about minimum values of this consistency (George & Mallery, 2003). Deletion of items would not lead to a higher internal consistency and thus all the items have been included. For both environmental attitudes and situational beliefs the mean scores indicate that respondents overall have positive environmental attitudes and in general do not think that a holiday means a break from environmental duties.

An exploratory factor analysis has resulted in factor extraction for perceived behavioural control in both contexts. Principal factor analyses were conducted with varimax rotation. For both the holiday and home context, one factor has been derived as only factor had an eigenvalue above 1. The internal consistency is slightly lower than the minimum guideline of .70 ( $\alpha =.69$ ), but this is considered to be sufficient when studying complex social constructs (Field, 2013). Splitting the scale into controllability and self-efficacy would not increase the internal consistency and therefore perceived behavioural control in this study has been considered as one dimensional construct. The mean scores indicate that respondents at home feel slightly more able to execute behaviour than on a holiday. Whereas the mean score of perceived behavioural control at home indicates that respondents feel quite enabled, on a holiday they feel they have less control.

A exploratory factor analysis has not resulted in factor extraction for both holiday and home behaviour. Principal factor analyses were conducted on the continuous variables for pro-environmental home behaviour and holiday behaviour with varimax rotation. After various attempts the sampling adequacy did not increase and no eigenvalues larger than 1 were extracted. This shows that pro-environmental behaviour as one dimension does not exist within this sample and behaviours need to be treated independently. In order to reduce the amount of variables for pro-environmental behaviour, only the most relevant variables have been selected for analysis. For both the holiday and home context; recycling, meat consumption, and saving energy were selected. Transportation has been excluded as it is understandable that public transport is used more often among students. Furthermore, the items using green energy and using accommodation with eco-label have been excluded. Most of the respondents indicated that they did not know whether their holiday accommodation had a green eco-label or whether their home in the Netherlands used green energy. This resulted in the selection of three relevant variables.



## 5.2. Predictors for pro-environmental holiday behaviour

In this section the results of the hypotheses for the first research question ‘Are situational beliefs, environmental attitudes, perceived behavioural control and home behaviour, predicting pro-environmental holiday behaviour?’ will be presented. The main result is a multiple regression that measured what factor predicts pro-environmental holiday behaviour best. This section will start with an overview of the factors that are predicting pro-environmental holiday behaviour, followed by results that further explore the results of predictors.

### 5.2.1. Result multiple regression

A multiple regression has been conducted in order to define what factor is best able to predict pro-environmental holiday behaviour. The following table shows the results of the three multiple regressions that have been conducted:

Holiday behaviour	Overall model	Contribution per predictor			
		Environmental attitudes	Home behaviour	Situational Beliefs	Perceived behavioural control (Holiday)
<i>Recycling</i>	$R^2_{adj}=.39$ $p<.001$ Large effect	$b=.13$ $p=.01$	$b=-.11$ $p=.02$	$b=-.02$ $p=.75$ (non sig.)	<b><math>b=.61, p&lt;.001</math></b>
<i>Meat reduction</i>	$R^2_{adj}=.42$ $p<.001$ Large effect	$b=.08$ $p=.11$ (non sig.)	<b><math>b=.52</math></b> <b><math>p&lt;.001</math></b>	$b=-.04$ $p=.41$ (non sig.)	$b=.19$ $p<.001$
<i>Saving energy</i>	$R^2_{adj}=.18$ $p<.001$ Medium effect	$b=.09$ $p=.18$ (non sig.)	<b><math>b=.19</math></b> <b><math>p=.001</math></b>	<b><math>b=-.20</math></b> <b><math>p=.001</math></b>	$b=.14$ $p=.02$

**Table 8: Overview results multiple regression per pro-environmental holiday behaviour**

This table presents three interesting findings: 1) there is little predictive power for environmental attitudes and situational beliefs, 2) perceived behavioural and home behaviour are important concepts to take into account in understanding pro-environmental holiday behaviour, and 3) there is not one clear predictor that predicts pro-environmental holiday behaviour in general.

First, environmental attitudes and situational beliefs only contribute to the overall model in one regression and thus other concepts are found to be more influential. This indicates that environmental attitudes, although positive, did not contribute directly to actual execution of behaviour on a holiday. The same counts for situational beliefs, although respondents in general do not think that a holiday means a break from environmental duties, this has not directly resulted in pro-environmental behaviour while being on a holiday.

Secondly, all three regressions show a significant contribution of perceived behavioural control and home behaviour to the overall prediction of pro-environmental holiday behaviour. This means that in understanding pro-environmental behaviour, habits at home and the perceived behavioural control are in general more important than situational beliefs and environmental attitudes.

The third finding shows that pro-environmental behaviours are distinct behaviours and are not suitable for generalisation into a one-dimensional construct as all three behaviours differ in predictors. When looking at recycling behaviour on a holiday, it shows a large contribution of perceived behavioural control. This means that if respondents perceive to have control over recycling behaviour on a holiday, it is likely that they also acted accordingly. As recycling behaviour

significantly decreased compared to the home context, it is more viable to conclude that respondents did not feel able to recycle on a holiday which corresponded with less recycling. However the same conclusion cannot be drawn for the other two behaviours as perceived behavioural control is not the biggest predictor for the reduction of meat and saving energy. When looking at the reduction of meat on a holiday, it shows a large contribution for the reduction of meat at home. This means that the reduction of meat on a holiday can be explained by looking at habits at home.

The table answered several hypotheses that have been formulated in the theoretical framework. The following hypotheses can be rejected or accepted:

1. Situational beliefs are the strongest predictor for pro-environmental holiday behaviour
2. Home behaviour predicts pro-environmental holiday behaviour
3. Environmental attitudes predict pro-environmental holiday behaviour
4. Perceived behavioural control predicts pro-environmental holiday behaviour

It can be concluded that based on this sample group, situational beliefs are not the best predictor and hypothesis 1 can therefore be rejected. Overall there has not been a strong influence of environmental attitudes and thus hypothesis 3 can also be rejected. Hypotheses 2 and 4 are confirmed as all three types of chosen holiday behaviours have a relationship with home behaviour and perceived behavioural control. The following sections further explore the other hypotheses that have not been answered by the multiple regression results.

### 5.2.2. Environmental attitudes and behaviour

Table 7 would indicate that environmental attitudes have little influence on pro-environmental holiday behaviour. However when only looking at the relationship between environmental attitudes and pro-environmental behaviour, different results are found.

	Relationship of Environmental Attitudes and pro-environmental behaviour					
	Holiday context			Home context		
	$R^2_{adj}$	$p$	Effect	$R^2_{adj}$	$p$	Effect
Recycling	.08	<.001	Small	.07	<.001	Small
Meat reduction	<b>.12</b>	<b>&lt;.001</b>	<b>Medium</b>	<b>.14</b>	<b>&lt;.001</b>	<b>Medium</b>
Saving energy	.08	<.001	Small	.09	<.001	Medium

**Table 9: Results of regression environmental attitudes – pro-environmental behaviour**

This table shows two interesting findings: 1) all behaviours correlate with environmental attitudes and 2) there is little difference between the holiday and home context. First, all three types of behaviours in both contexts have a small to medium significant relationship with environmental attitudes. The largest effect that was found was between the reduction of meat at home and environmental attitudes with a medium strength ( $R^2_{adj}=0.14$ ,  $p<.001$ ). Secondly, there is little difference visible between the holiday or home context in relation to environmental attitudes. The differences vary with 1 or 2% and are therefore negligible. The relationship of environmental attitudes is for recycling behaviour stronger on a holiday with 1% (7% at home, 8% on a holiday) while for meat reduction this is 2% lower on a holiday (14% at home, 12% on a holiday). The small effect sizes mean that only a small percentage of the behaviours are explained by general environmental attitudes, for both the holiday and the home context.

These results provide insight in the following hypotheses:

5. Environmental attitudes have a correlation with pro-environmental holiday behaviour
6. Environmental attitudes have a correlation with pro-environmental home behaviour
7. The relationship between environmental attitudes and pro-environmental behaviour is stronger in the home context

It can be concluded that hypotheses 5 and 6 are confirmed as all relationships were found to be significant. There is a relationship between environmental attitudes and pro-environmental behaviour and this relationship tends to be small to medium. However, the relationship between environmental attitudes and home behaviour is in general not stronger than with the holiday context and thus hypotheses 7 can be rejected.

### 5.2.3. Holiday behaviour and home behaviour

The multiple regression has already indicated that habitual behaviour transfers to a tourism setting as all regressions showed a significant contribution to the overall model. In order to be more precise in defining the strength of this influence, simple regressions have been conducted without considering other factors. The following table shows the results.

Regression of home behaviour on holiday behaviour			
	$R^2_{adj}$	$p$	Effect size
Recycling	.06	<.001	Small
Meat reduction	<b>.37</b>	<b>&lt;.001</b>	<b>Large</b>
Saving energy	.09	<.001	Medium

**Table 10: Result of regression home behaviour – holiday behaviour**

The table shows only one interesting finding: the very large effect size for habits and the reduction of meat. Whether respondents on a holiday reduced the amount of meat, depends with a large effect on the consumption of meat at home. This would indicate that regarding the reduction of meat, habits play a large role as 37% of the variance can be explained by home behaviour. Also saving energy shows a medium role for habits in understanding pro-environmental holiday behaviour. However the percentages explained by habits is still not considered as a lot for saving energy and is therefore negligible. Regarding recycling, habits only have a small role.

### 5.2.4. Situational beliefs

Although it has been written already that situational beliefs do not seem to have an influence on pro-environmental holiday behaviour, simple regressions may have shown different results.

Regression of situational beliefs on holiday behaviour			
	$R^2_{adj}$	$P$	Effect size
Recycling	.05	<.001	Small
Meat consumption	.07	<.001	Small
Saving energy	<b>.10</b>	<b>&lt;.001</b>	<b>Medium</b>

**Table 11: Result of regression situational beliefs – behaviour**

Based on table 11, the role of situational beliefs is indeed small. Although all the relationships are significant, small effect sizes are found. The largest effect size can be found for saving energy in relation to situational beliefs ( $R^2_{adj}=.10$ ,  $p<.001$ ). 10% in variance of energy saving behaviour is explained by situational beliefs. Thus, not saving energy on a holiday relates to thoughts of a holiday

meaning a break from environmental duties. In turn, this means that saving energy on a holiday relates to thoughts of the environment being as important at home as on a holiday. However, this is a minor finding as 10% is not a very large percentage.

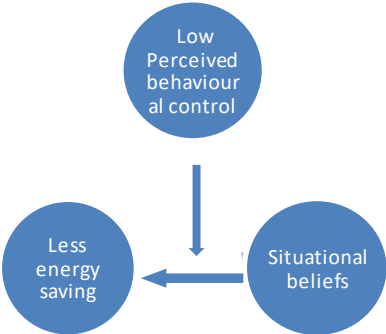
5.3. The moderating role of situational beliefs and perceived behavioural control

This section explores the answer for the research question: Are situational beliefs and perceived behavioural control moderators? This section explores whether perceived behavioural control or situational beliefs strengthen or weaken relationships of other concepts with pro-environmental holiday behaviour. Only the results for perceived behavioural control as moderator are presented due the relevance of the results. Situational beliefs showed lower beta values in the interaction model and are therefore found to be less relevant.

Moderating role of perceived behavioural control		
	Environmental attitudes	Situational beliefs
Recycling	R <sup>2</sup> =.39 Interaction: <i>b</i> =-.18, <i>p</i> =.07 (non sig.)	R <sup>2</sup> =.37 Interaction: <i>b</i> =-.06, <i>p</i> =.48 (non sig.)
Meat reduction	R <sup>2</sup> =.19 Interaction: <i>b</i> =.09, <i>p</i> =.52 (non sig.)	R <sup>2</sup> =.16 Interaction: <i>b</i> =.09, <i>p</i> =.39 (non sig.)
Energy saving	R <sup>2</sup> =.13 Interaction: <i>b</i> =-.32, <i>p</i> =.06 (non sig.)	R <sup>2</sup> =.16 <b>Interaction: <i>b</i>=.29, <i>p</i>=.02</b>

Table 12: Moderating effect of perceived behavioural control

Only the interaction effect for situational beliefs together with perceived behavioural control has been found to be significant with a medium effect when looking at energy saving behaviour on a holiday. This means that perceived behavioural control has an influence on the relationship of situational beliefs and energy saving. The following figure represents a visual overview of the conditional effects, explaining the interaction effect in more detail.



	Conditional effects of interaction	
Value of perceived behavioural control	<i>b</i>	<i>Sig</i>
Low (mean-sd)	<b>-.67</b>	<b>p&lt;.001</b>
Mean (0)	<b>-.43</b>	<b>p=.003</b>
High (mean+sd)	-20	p=.24 (non sig.)

Figure 7: visual representation interaction effect

Table 13: Results conditional effects of interaction

The table shows that when respondents did not feel able to execute pro-environmental behaviour on a holiday, there is a negative relationship between energy saving behaviour and situational beliefs. Thus, when people do not feel able to execute pro-environmental behaviour on a holiday, beliefs of the environment being less important on a holiday influence actual energy saving behaviour on a holiday negatively. The table also shows, that when people feel able to execute pro-environmental behaviour on a holiday, beliefs have no influence on the execution of saving energy on a holiday.

These results are able to confirm or reject the following hypotheses:

8. Situational beliefs moderate the strength between pro-environmental holiday behaviour and other concepts
9. Perceived behavioural control on a holiday moderates the strength between pro-environmental holiday behaviour and other concepts

Hypothesis 8 can be rejected as perceived behavioural control influences relationships stronger than situational beliefs. Hypothesis 9 can be partly confirmed as the moderating effect was only found for energy saving behaviour on a holiday. This is a minor finding as this moderating role of perceived behavioural control did not occur in moderation of environmental attitudes or with other behaviours.

#### 5.4. Perceived behavioural control

A lot has been written already about the importance of perceived behavioural control. However this last research question ‘how can the decrease in pro-environmental behaviour compared to home be explained through perceived behavioural control’, concerns the comparison of perceived behavioural control on a holiday with the home context. The following table shows a comparison between the home and the holiday context:

	Correlation of perceived behavioural control and pro-environmental behaviour					
	Holiday context			Home context		
	$R^2$	$p$	Effect	$R^2$	$p$	Effect
Recycling	.37	<.001	Large	.03	.003	Small
Meat reduction	.13	<.001	Medium	.11	<.001	Medium
Saving energy	.07	<.001	Small	.05	<.001	Small

Table 14: Comparison home and holiday context with perceived behavioural control

It shows all correlations of perceived behavioural control with all the behaviours in both contexts. It is visible how all behaviours correlate with some extent to perceived behavioural control. This was already indicated by the multiple regression in section 5.1, but this confirms the direct relationships and provides effect sizes for the correlations. The table shows one interesting findings, the difference in correlation between the holiday and home context for recycling. Conceptually this means that the decrease in recycling on a holiday largely relates to the ability to control pro-environmental behaviour in a holiday.

In order to provide more insight in the role of perceived behavioural control and recycling behaviour on a holiday, a multiple regression has been conducted that measures the influence per aspect of perceived behavioural control. The results can be found in the following table:

Behaviour	Overall model	Contribution per predictor			
		Resources	Skills	Difficulty	Responsibility
Recycling on a holiday	$R^2_{adj} = .39$ $p < .001$ Large effect	$b = .32$ $p < .001$	$b = .04$ $p = .66$ (non sig.)	$b = .22$ $p < .001$	$b = .28$ $p < .001$
Recycling at home	$R^2_{adj} = .04$ $p < .001$ Small effect	$b = .13$ $p = .058$	$b = -.07$ $p = .29$ (non sig.)	$b = .03$ $p = .61$ (non sig.)	$b = .16$ $p = .007$

Table 15: Multiple regression recycling home and holiday context

The table shows that perceived behavioural control as one variable already explains 39% of the variance in recycling behaviour on a holiday, which can be classified as very high. Mainly the available resources and the feeling of personal responsibility are the most important predictor for recycling behaviour, in both the holiday and home setting. This means that in terms of skills, people do not experience barriers that leads to the decrease of recycling on a holiday. Also respondents find recycling on a holiday more difficult than at home as this difficulty is only significant on a holiday.

In Table 16 an overview can be found of the descriptive statistics that show the differences between the home and holiday context for the two most influential parts, available resources and the feeling of being responsible to execute pro-environmental behaviour. It shows that for available resources, overall respondents feel they have more resources at home than on a holiday with a medium effect. The perception of available resources is therefore the most important aspect that explains the decrease in recycling.

	Mean differences between home and holiday setting			
	Home	Holiday	Cohen's d	Effect
Resources	M=3.2 SD=.88	M=2.5 SD=1.14	.66 ( $p<.001$ )	<b>Medium</b>
Responsibility	M=3.54 SD=.9	M=3.1 SD=1.17	.41 ( $p<.001$ )	Small

**Table 16: Descriptive statistics for aspects perceived behavioural control in home and holiday context**

The following hypotheses can be accepted based on these results:

10. Perceived behavioural control on a holiday correlates with pro-environmental holiday behaviour
11. Perceived behavioural control at home correlates with pro-environmental behaviour at home
12. Respondents feel more able at home to execute pro-environmental behaviour

Hypotheses 10 and 11 have been confirmed as all relationships are significant. As resources are the most influential part of perceived behavioural control that explains the decrease in recycling behaviour, hypotheses 12 can also be confirmed.

## 6. DISCUSSION

---

The purpose of this chapter is to discuss the results by linking it to the literature from the theoretical framework, to suggest further research and to point out a generalisation issue. This thesis aimed at providing insight in the decrease of pro-environmental behaviour on a holiday by means of three literature gaps: 1) the attitude-behaviour gap, 2) predictive value of factors besides environmental attitudes and 3) considering perceived behavioural control as explainer. This discussion will start with the main findings of environmental attitudes, habits and perceived behavioural control that provide insight in these gaps. Other interesting findings will be listed afterwards and the discussion will end with generalisation validity and scientific relevance of this study.

### 6.1. Main findings

---

#### 6.1.1. Predictive value of environmental attitudes and other factors

---

Results have provided insight in the attitude-behaviour gap and based on the conceptualisation of this relationship, a gap may or may not be perceived. When assuming that pro-environmental behaviour is a direct and logical outcome of environmental attitudes, a gap can be perceived as environmental attitudes are not the best predictor. The conceptualisation of environmental attitudes being responsible for predicting behaviour is simplistic as behaviour is more complex and not merely a result of attitudes. Although the relationships tended to be weak or medium, simple regressions have shown that there is a relationship between pro-environmental behaviour and environmental attitudes. The multiple regression however, did not provide a large role for environmental attitudes in predicting behaviour. This means that when other factors are taken into account, the influence of environmental attitudes becomes less strong. Other factors are more important in understanding pro-environmental holiday behaviour, but it is too simplistic to conclude that there is no relationship at all.

This is in line with the argumentation of Ajzen (1991) that it is too simplistic to conclude that due to the low predictive value, general attitudes do not influence behaviour at all, instead this relationship is being weakened by other specific factors. The findings of this study lead to the conclusion that habits and practical factors are more important than general attitudes. When treating behaviours as independent, different sets of determinants were found that relate more closely to the behaviours. For example, when looking at recycling behaviour, the explanation is practical and more closely related to recycling than general attitudes. These findings are in line with the hypotheses that have been formulated in the theoretical framework about the relationship between environmental attitudes and pro-environmental holiday behaviour.

#### 6.1.2. The importance of perceived behavioural control

---

Although perceived behavioural control was included as exploratory concept, it had a stronger theoretical underpinning due to the theory of planned behaviour. Theory and hypotheses indicated that perceived behavioural control had a direct relationship with pro-environmental holiday behaviour which has been confirmed based on this study. Although some relationships were small, the large effect of perceived behavioural control on a holiday on recycling, showed the importance of perceived behavioural control in understanding the decrease of recycling behaviour.

In case of a decrease in pro-environmental holiday behaviour compared to home (recycling), perceived behavioural control is largely able to explain this decrease. Possibly these findings can be generalised to other types of behaviours that decrease on a holiday. This conclusion cannot be drawn based on this study but it could be the case that when behaviours decrease, perceived behavioural

control is an important concept in understanding this decrease. An assumption made beforehand was that infrastructure is more known at home and that people therefore perceived less control on a holiday as it is more difficult. However, self-efficacy in terms of skills and difficulty were not found to be of major influence on predicting recycling behaviour. Instead, the perception of having control (controllability) has been found to be more important in understanding the decrease. This is contradicting what has been argued in the theoretical framework about self-efficacy being usually a better predictor than controllability (Trafimow et al., 2002). Thus, people feel personally able to execute behaviour in terms of skills, but still feel unable due to external facilities. This is in line with the argument of Gifford (2007) that external barriers are often better able to explain pro-environmental behaviour, rather than personal barriers. However, external barriers have not been measured, only the perception and future research could focus on actual external barriers.

The conclusion of providing facilities resulting in more recycling behaviour cannot be drawn with certainty, only indicated. A distinction between the *perception* of available facilities and the *actual* available facilities needs to be made. Resources may have been available, but due to visibility issues or a lack of effort to look for them, may have lead to a decreased perception of having control. Further research could therefore focus on a specific location where actual available facilities and local infrastructure are compared with the perception. A policy implication that can be provided is that beliefs of the environment being less important on a holiday are not likely to influence recycling behaviour. Hence, these beliefs did not withhold people from recycling on a holiday and thus there is a higher likelihood of people using recycling facilities when provided.

### 6.1.3. Considering habits in understanding pro-environmental holiday behaviour

---

Another exploratory part was the role of habits. Previous research has shown the indication of the transfer of habits from the home setting to the tourism setting. Regarding the reduction of meat, this is a major finding in this study. This means that when people eat less meat at home, they are also likely to eat less meat on a holiday. As indicated already, mental dispositions towards the environment do not change on a holiday. The role of habits confirm these findings by showing that home behaviour predicts holiday behaviour in the case of meat reduction. This study has not proven that a holiday typically means that different behaviours and different beliefs occur. This indicates that a holiday is more like an extension of daily life instead a holiday being a way to escape from daily routine, a discussion that is beyond the scope of this discussion. In the theoretical framework it has been written that habits mainly transfer if the behaviours are easy and less when behaviours are more influential such as recycling (Miller, 2015). A suggestion for further research is thus the inclusion of effort. A distinction between effortful and effortless behaviours could be made in further research in order to provide more insight in the role of habits.

## 6.2. Other findings

---

### 6.2.1. Pro-environmental behaviour as distinct types of behaviour

---

In the methodology the discussion about treating pro-environmental behaviour as distinct types of behaviours or as one-dimensional has been mentioned. Based on this study, pro-environmental behaviour as one category does not exist for three reasons: 1) there is no general decrease, 2) the factor analysis did not result in a combination of behaviours and 3) all behaviours had different dominant predictors.

First, for the three studied behaviours, only recycling decreased substantially whereas meat reduction and energy saving behaviour did remain fairly the same. It is thus too simplistic to conclude



that people on a holiday in general behave irresponsible towards the environment as often is suggested. Thus behaviours need to be studied independently instead of stating that in general pro-environmental behaviour decreases. The aim of this study was not to provide a detailed comparison of behaviours in both contexts, instead it was an assumption that pro-environmental behaviour decreased on a holiday. However, this assumption is only partly true based on this study as the results show that a general decrease not necessarily occurred.

Secondly, the aim was to reduce the amount of behaviours of the survey into categories. However after various attempt, the items were unsuitable for combinations. This means that different types of behaviour need to be treated independently instead of combining them into categories. Every type of behaviour is different in terms of occurrence, predictors and decrease on a holiday. This relates to the third point, differences in predictive factors. For example, whereas habits are most important for meat reduction, habits played only a little role for recycling behaviour.

This is an important implication for studying pro-environmental holiday behaviour as it needs to be considered that a conceptual model may be applicable for one type of behaviour, but not for another type of behaviour. A general conceptualisation of pro-environmental behaviour may not be applicable as a category of 'pro-environmental holiday behaviour' does not exist. People may not have recycled on a holiday, but may have showed other types of pro-environmental behaviour.

#### 6.2.2. The role of situational beliefs

---

The same argumentation line of the role of environmental attitudes can be used for the role of situational beliefs. General beliefs about environmental duties on a holiday do not necessarily have a large influence on actual behaviour due to the specific predictors per behaviour. The role of situational beliefs was exploratory. No major influence of the selected situational variables were found. A holiday does not mean that different beliefs exist about the environment but other more holiday specific motives such as comfort and pleasure may be studied in further research. The reason for further exploring situational factors are methodological. When participating in this study, respondents were already back from their holiday and respondents may have agreed to general statements about environmental duties being as important on a holiday as at home, which may not have been the reasoning while being on a holiday. However this study pointed out, contrary to literature, that respondents still think (although after their holiday) that environmental duties are important.

A minor but interesting finding was the moderation of perceived behavioural control in understanding the relationship between situational beliefs and energy behaviour on a holiday. This could indicate that beliefs of environmental duties being less important on a holiday serve as a justification mechanism. Situational beliefs only influenced energy saving behaviour when respondents did not feel able to act pro-environmentally, this effect did not occur when people did feel able to act pro-environmentally. People usually want to match their behaviour with underlying values and attitudes and when this is not the case, cognitive dissonance may appear. This cognitive dissonance can be decreased by adjusting behaviour or by changing attitudes (Zimbardo, 2009). Beliefs that a person holds towards pro-environmental behaviour are influencing behaviour and through mechanisms of denial and justification, these beliefs are bridging the gap between positive environmental attitudes and pro-environmental behaviour (Antimova et al., 2012). Thus situational beliefs in case of saving energy serve possibly as a justification mechanism to compensate the feeling of inability to act pro-environmentally on a holiday. This finding is minor as the same effect did not occur for the other behaviours.

### 6.3. Generalisation

---

The interpretation of the results beyond the sample group are important. SPSS produces valuable analyses, but in the end it takes common sense to interpret these results into conceptual information. Although a model fits the data, it cannot be assumed that it represents a good overview of reality beyond the sample group. In this study the generalization needs be approached carefully. The models represents a good fit within the sample group, and may be generalised to the population of Wageningen University, but not *beyond* this group for two reasons.

First, the sample group. Ideal was to compare 200 students with 200 graduates from different education levels. Although there was no scientific interest, it would provide information about generalisation possibilities. The sample group is not suitable for generalisation to a larger population because it represents mostly Wageningen University & Research students and graduates. The group non-students *probably* also consists largely of WUR graduates due to the large number of graduates in Wageningen Student Plaza and in the own network. However, as this questions was not added to the questionnaire, this conclusion cannot be drawn with certainty. As the state of mind in Wageningen towards the environment cannot be assumed to be the same for a larger population, results are not reliable for generalisation beyond Wageningen University. This study could be repeated with other sample groups in order to define whether the assumption is accurate. However, the sample group represents the population of Wageningen University well as the sample group contains of a variety of students, educational levels and types of holidays.

### 6.4. Scientific relevance

---

This thesis aimed at filling in some literature gaps that provide this thesis with scientific relevance. Concerning the gap between environmental attitudes and pro-environmental behaviour, the role of habits and perceived behavioural control provide additions to the current literature gaps.

Previous studies have identified that there might be a gap between environmental attitudes and pro-environmental holiday behaviour because despite positive environmental attitudes, holiday behaviour does not always match accordingly. Instead, results have shown that there is not necessarily a gap, but that other factors are more important in understanding pro-environmental holiday behaviour.

There was also no study found that studied perceived behavioural control in both the holiday and home context. This would indicate whether beliefs form constraints in general, or that it is holiday specific. This study has shown that constraints in perceived constraints are holiday and behaviour specific. When no decrease was found between the home and holiday context, people feel as able at home as on a holiday to execute pro-environmental behaviour.

There was also uncertainty about the role of habits and the situational change of the home setting to the tourism setting. This study has shown little changes in attitudes and beliefs between the home and holiday context, and behaviour remained except recycling also fairly the same. This indicates that habits are more important than thought beforehand.

The last addition, environmental attitudes have been studied little in relation to both the home and holiday setting. This thesis provided insight in this relationship and showed that there is little difference between the home and holiday setting concerning the relationship with environmental attitudes.

## 7. CONCLUSION

---

Three research questions derived from the literature review and main problem. The objectives of this thesis have been met; to provide insight in what predictor explains holiday behaviour best and how this decrease can be explained. However, the issue of pro-environmental behaviour in general decreasing compared to home has not been found within this sample. This could be due to the mindset of Wageningen, and findings can thus not be generalised with certainty. The following sections answer the research questions in short as the discussion already provided detailed information about the predictive role of the concepts.

### 7.1. Are situational beliefs, environmental attitudes, perceived behavioural control and habits predicting pro-environmental holiday behaviour?

---

This study underlined the importance of considering every behaviour as distinct as different predictors were found. Regarding understanding recycling behaviour on a holiday, perceived behavioural control, environmental attitudes and habits are predictors, with the most important role for perceived behavioural control. The reduction of meat on a holiday is predicted by habits and perceived behavioural control, with by far the largest role for home behaviour. Energy saving behaviour on a holiday is predicted by habits, situational beliefs and perceived behavioural control, but no clear large predictor was indicated. In general there is not one clear predictor that is able to explain pro-environmental behaviour best, as it depends on the type of behaviour.

### 7.2. Are situational beliefs and perceived behavioural control moderators?

---

The answer to this question is short, there is no major influence found of situational beliefs on pro-environmental holiday behaviour. Whereas it was indicated that this was the best predictor and moderator, this effect has not been found. The reason may be methodological, but based on this study a large effect has not been found. Instead, a minor finding showed a moderating role for perceived behavioural control on the relationship between situational beliefs and energy saving behaviour on a holiday. Thus, beliefs of environmental duties being less important on a holiday did negatively affect energy saving behaviour when respondents did not feel able to act pro-environmentally.

### 7.3. How can the decrease in pro-environmental behaviour be explained through perceived behavioural control?

---

The answer to this research question only applies to recycling behaviour as this showed the only substantial decrease. Mainly the aspect of the available resources had influenced recycling behaviour on a holiday. Self-efficacy as the first component of perceived behavioural control had little influence whereas controllability is more important in understanding the decrease. This means that people feel they have less control over recycling on a holiday than they have at home.

## REFERENCES

---

- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology*, 32(4), 665-683.
- Ajzen, I. (2006). *Constructing a Theory of Planned Behavior Questionnaire*.
- Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health*, 26(9), 1113-1127.
- Antimova, R., Nawijn, J., & Peeters, P. (2012). The awareness/attitude-gap in sustainable tourism: a theoretical perspective. *Tourism Review*, 67(3), 7-16.
- Axon, S. (2017). "Keeping the ball rolling": Addressing the enablers of, and barriers to, sustainable lifestyles. *Journal of Environmental Psychology*, 52, 11-25.
- Baltar, F., & Brunet, I. (2012). Social research 2.0: virtual snowball sampling method using Facebook. *internet Research*, 22(1), 57-74.
- Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27(1), 14-25.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American psychologist*, 37(2), 122.
- Barr, S., & Gilg, A. (2006). Sustainable lifestyles: Framing environmental action in and around the home. *Geoforum*, 37(6), 906-920.
- Blake, J. (1999). Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience. *Local environment*, 4(3), 257-278.
- Brug, J. (2007). *Gezondheidsvoorlichting en gedragsverandering*: Uitgeverij Van Gorcum.
- Budeanu, A. (2007). Sustainable tourist behaviour ? a discussion of opportunities for change. *International Journal of Consumer Studies*, 31(5), 499-508.
- Chafe, Z., & Honey, M. (2005). Consumer demand and operator support for socially and environmentally responsible tourism. *Center on Ecotourism and Sustainable Development*.
- Clayton, S. D. (2012). *The Oxford handbook of environmental and conservation psychology*: Oxford University Press.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Earlbaum Associates, 2.
- Corraliza, J. A., & Berenguer, J. (2000). Environmental Values, Beliefs, and Actions. *Environment and Behavior*, 32(6), 832-848.
- Culiberg, B., & Elgaaied-Gambier, L. (2016). Going green to fit in - understanding the impact of social norms on pro-environmental behaviour, a cross-cultural approach. *International Journal of Consumer Studies*, 40(2), 179-185.
- Dolnicar, S., & Grün, B. (2009). Environmentally Friendly Behavior. *Environment and Behavior*, 41(5), 693-714.
- Dunlap, R. E., Liere, K. D. V., Mertig, A. G., & Jones, R. E. (2000). New Trends in Measuring Environmental Attitudes: Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. *Journal of social issues*, 56(3), 425-442.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*: Harcourt Brace Jovanovich College Publishers.

- Edenhofer, O., Pichs-Madruga, R., Sokona, Y., Farahani, E., Kadner, S., Seyboth, K., . . . Eickemeier, P. (2014). Climate change 2014: mitigation of climate change. *Contribution of working group III to the fifth assessment report of the intergovernmental panel on climate change*, 5.
- Fabrigar, L., Macdonald, T., & Wegener, D. (2005). *The structure of attitudes*.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*: Sage.
- Ganglmair-Wooliscroft, A., & Wooliscroft, B. (2017). Ethical behaviour on holiday and at home: combining behaviour in two contexts. *Journal of Sustainable Tourism*, 25(4), 589-604.
- Gatersleben, B., Steg, L., & Vlek, C. (2002). Measurement and determinants of environmentally significant consumer behavior. *Environment and Behavior*, 34(3), 335-362.
- George, D., & Mallery, M. (2003). *Using SPSS for Windows step by step: a simple guide and reference*.
- Gifford, R. (2007). *Environmental psychology: Principles and practice*: Optimal books Colville, WA.
- Gifford, R. (2014). Environmental psychology matters. *Annu Rev Psychol*, 65, 541-579.
- Goodwin, H., & Francis, J. (2003). Ethical and responsible tourism: Consumer trends in the UK. *Journal of Vacation Marketing*, 9(3), 271-284.
- Han, H. (2015). Travelers' pro-environmental behavior in a green lodging context: Converging value-belief-norm theory and the theory of planned behavior. *Tourism Management*, 47, 164-177.
- Han, H., Hwang, J., & Lee, M. J. (2016). The value-belief-emotion-norm model: investigating customers' eco-friendly behavior. *Journal of Travel & Tourism Marketing*, 34(5), 590-607.
- Hatfield-Dodds, S., Schandl, H., Newth, D., Obersteiner, M., Cai, Y., Baynes, T., . . . Havlik, P. (2017). Assessing global resource use and greenhouse emissions to 2050, with ambitious resource efficiency and climate mitigation policies. *Journal of Cleaner Production*, 144, 403-414.
- Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling*: University of Kansas, KS.
- Hedlund, T. (2011). The impact of values, environmental concern, and willingness to accept economic sacrifices to protect the environment on tourists' intentions to buy ecologically sustainable tourism alternatives. *Tourism and Hospitality Research*, 11(4), 278-288.
- Hine, D., Kormos, D., & Marks, A. (2016). *Chapter 5 Agree to Disagree in Research Methods for Environmental Psychology [R.Gifford]*: Wiley & Sons.
- Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*: Sage.
- Kaiser, F., & Kibbe, A. (2017). *Pro-Environmental Behavior*.
- Kaiser, F. G., Ranney, M., Hartig, T., & Bowler, P. A. (1999). Ecological behavior, environmental attitude, and feelings of responsibility for the environment. *European Psychologist*, 4(2), 59-74.
- Kaiser, F. G., & Wilson, M. (2004). Goal-directed conservation behavior: the specific composition of a general performance. *Personality and Individual Differences*, 36(7), 1531-1544.
- Kiatkawsin, K., & Han, H. (2017). Young travelers' intention to behave pro-environmentally: Merging the value-belief-norm theory and the expectancy theory. *Tourism Management*, 59, 76-88.
- Klößner, C. A. (2013). A comprehensive model of the psychology of environmental behaviour—A meta-analysis. *Global Environmental Change*, 23(5), 1028-1038.
- Kollmuss, A., & Agyeman, J. (2002). Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-260.
- Markle, G. L. (2013). Pro-Environmental Behavior: Does It Matter How It's Measured? Development and Validation of the Pro-Environmental Behavior Scale (PEBS). *Human Ecology*, 41(6), 905-914.

- McIntyre, A., & Milfont, T. (2016). *Chapter 6 - Measuring Environmental Attitudes in Research Methods for Environmental Psychology [edited by R.Gifford]*: Wiley & Sons.
- Milfont, T. L., & Duckitt, J. (2010). The environmental attitudes inventory: A valid and reliable measure to assess the structure of environmental attitudes. *Journal of Environmental Psychology, 30*(1), 80-94.
- Miller, D., Merrilees, B., & Coghlan, A. (2015). Sustainable urban tourism: understanding and developing visitor pro-environmental behaviours. *Journal of Sustainable Tourism, 23*(1), 26-46.
- Miller, G. A. (2003). Consumerism in Sustainable Tourism: A Survey of UK Consumers. *Journal of Sustainable Tourism, 11*(1), 17-39.
- Moghimehfar, F., & Halpenny, E. A. (2016). How do people negotiate through their constraints to engage in pro-environmental behavior? A study of front-country campers in Alberta, Canada. *Tourism Management, 57*, 362-372.
- Nicholls, M. (2014). Climate Change: Implications for Tourism. Key Findings from the Intergovernmental Panel on Climate Change Fifth Assessment Report. *University of Cambridge*.
- Pachauri, R. K., Allen, M. R., Barros, V. R., Broome, J., Cramer, W., Christ, R., . . . Dasgupta, P. (2014). *Climate change 2014: synthesis report. Contribution of Working Groups I, II and III to the fifth assessment report of the Intergovernmental Panel on Climate Change*: IPCC.
- Passafaro, P., Cini, F., Boi, L., D'Angelo, M., Heering, M. S., Luchetti, L., . . . Triolo, M. (2015). The "sustainable tourist": Values, attitudes, and personality traits. *Tourism and Hospitality Research, 15*(4), 225-239.
- Pinkse, J., & Kolk, A. (2012). Multinational enterprises and climate change: Exploring institutional failures and embeddedness. *Journal of International Business Studies, 43*(3), 332-341.
- Santana-Jiménez, Y., & Hernández, J. M. (2011). Estimating the effect of overcrowding on tourist attraction: The case of Canary Islands. *Tourism Management, 32*(2), 415-425.
- Schwitzgebel, E. (2006). Belief. *Zalta, Edward, The Stanford Encyclopedia of Philosophy, Stanford, CA: The Metaphysics Research Lab*.
- Scott, D., Amelung, B., Becken, S., Ceron, J., Dubois, G., Gössling, S., . . . Simpson, M. (2008). Climate change and tourism: Responding to global challenges. *World Tourism Organization, Madrid, 230*.
- Steg, Van den Berg, A., & De Groot, J. (2013). *Environmental Psychology: An Introduction*: BPS Blackwell.
- Steg, L., & Buijs, A. (2004). *Psychologie & duurzame ontwikkeling; de psychologie van milieugedrag en natuurbeleving*: Netwerk Duurzaam Hoger Onderwijs.
- Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology, 29*(3), 309-317.
- Stern, P. C. (2000). New environmental theories: toward a coherent theory of environmentally significant behavior. *Journal of social issues, 56*(3), 407-424.
- Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human ecology review, 81-97*.
- Tobler, C., Visschers, V. H. M., & Siegrist, M. (2012). Addressing climate change: Determinants of consumers' willingness to act and to support policy measures. *Journal of Environmental Psychology, 32*(3), 197-207.

- Trafimow, D., Sheeran, P., Conner, M., & Finlay, K. A. (2002). Evidence that perceived behavioural control is a multidimensional construct: Perceived control and perceived difficulty. *British Journal of Social Psychology, 41*(1), 101-121.
- Vagias, W. M. (2006). Likert-type Scale Response Anchors. Clemson International Institute for Tourism. & *Research Development, Department of Parks, Recreation and Tourism Management, Clemson University.*
- Wearing, S., Cynn, S., Ponting, J., & McDonald, M. (2002). Converting Environmental Concern into Ecotourism Purchases: A Qualitative Evaluation of International Backpackers in Australia. *Journal of Ecotourism, 1*(2-3), 133-148.
- Zimbardo, P. G. (2009). *Psychologie: een inleiding*: Pearson Education.

## Appendix A: Questionnaire

---

### *Environmental Attitudes (completely disagree, disagree, neutral, agree, completely agree)*

Environmental pollution affects my health  
Environmental problems have consequences for my life  
I worry about environmental problems  
I can see with my own eyes that the environment is deteriorating  
Environmental problems are a risk for the future of my children  
Environmental problems are exaggerated (RECODED)  
Too much attention is paid to environmental problems (RECODED)  
The attention given to the greenhouse effect is exaggerated (RECODED)  
Saving threatened species is unnecessary luxury (RECODED)  
I am optimistic about the environmental quality in the future (RECODED)  
A better environment starts with myself  
People who do not take the environment into account try to escape their responsibility

### *Pro-environmental behaviour home (never, almost never, occasionally, almost always, always)*

How often in the last month have you separated waste in order to recycle?  
In the last month, how often have you used public transport instead of a car?  
During the past month, how often have you reduced the amount of meat you consume?  
How often did you travel short distances by bicycle/foot in the past month?  
When it is cold I wear more clothes instead of turning heat up  
When buying household appliances, I buy energy efficient appliances  
Do you use renewable energy at home? \*

### *Perceived Behavioural Control home (completely disagree, disagree, neutral, agree, completely agree)*

I feel that I have the resources/facilities to undertake environmental actions  
I am confident that I have the right set of skills to undertake environmental actions  
I find it difficult to undertake environmental actions (RECODED)  
I am myself responsible for undertaking environmental actions

### *Pro-environmental behaviour holiday (never, almost never, occasionally, almost always, always)*

How often have you separated and sorted your waste in order to recycle?  
How often have you reduced the amount of meat you consumed?  
How often have you switched off heating / air-conditioning when you left the accommodation?  
Have you used a plane to reach your holiday destination? \*  
While being on a holiday, have you used a plane to fly to another holiday destination? \*  
Have you chosen for an eco-friendly accommodation with an eco-label? \*

### *Perceived Behavioural Control holiday (completely disagree, disagree, neutral, agree, completely agree)*

I felt that I had the resources/facilities to undertake environmental actions  
I was confident that I had the right set of skills to undertake environmental actions  
I found it difficult to undertake environmental actions (RECODED)  
I am myself responsible for undertaking environmental actions

### *Beliefs (completely disagree, disagree, neutral, agree, completely agree)*

People on a holiday deserve a break from environmental duties  
The environmental impact that a holiday causes is compensated by behaviour at home  
On a holiday people should not worry about the environmental impact of holidays  
People should not only take the environment into account at home, but also on a holiday (RECODED)  
On a holiday, environmental duties are as important as at home (RECODED)

### *General holiday information*

Where did you go to on your last holiday? (OPEN QUESTION)  
How long did you go on a holiday for? (OPEN QUESTION)  
In what kind of accommodation did you stay? (OPTIONS: hotel, holiday house, B&B, hostel, campsite, at friends, none of the above)



What type of holiday described below describes your holiday best? (OPTIONS: city trip, beach holiday, nature holiday, camping trip, backpack holiday, none of the above)

*Demographics*

How old are you? (OPEN QUESTION)

What is your gender? (OPTIONS: male/female/I don't want to tell)

Do you own a car? \*

Are you a student? \*

If yes, at what school/university do you study? (OPEN QUESTION)

What is your current level of education?

What is your highest level of education?

\* Yes/no scale