POLITÉCNICO DE LEIRIA

ESCOLA SUPERIOR DE TURISMO E TECNOLOGIA DO MAR

TOURISTS' WILLINGNESS TO PAY

FOR GREEN HOTEL PRACTICES

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2018

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A dissertation submitted to the School of Tourism and Maritime Technology of Polytechnic Institute of Leiria in partial fulfillment of the requirements for the degree of Master in Sustainable Tourism Management

Supervision
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ACKNOWLEDGEMENTS

The author would like to thank Prof. João Paulo Jorge for his valuable support with regard to distribution of the questionnaires and MH Hotel Peniche, Hotel Soleil, and Surfers Lodge (all located in Peniche, Portugal) for their cooperation.

ABSTRACT

It is critical to gain a better comprehension of customers' desire to stay at eco-friendly hotels and support their efforts by paying a premium, as it can lead hotels still hesitant to become greener to start considering this possibility. This dissertation is particularly aimed to find out whether there is a relationship between environmental concerns of tourists and their willingness to pay (WTP) a premium for green hotels. The study thus explores such constructs as WTP and environmental worldviews, but also delves into preferred green hotel practices, as understanding WTP for each specific practice is important to design more efficient sustainable programs. In this study, environmental worldviews are measured by the New Ecological Paradigm (NEP) scale, which constitutes a major part of the questionnaire. The results of the study are produced primarily by means of differences between groups tests and association tests. The main finding is a strong and positive correlation between WTP and concern for the environment, but the study also provides with results on amount of premium guests are ready to pay, preferred green practices, and a brief profile of environmentally conscious customers. These findings will be particularly interesting for hoteliers, as they can use this information for altering their marketing and pricing strategies. Besides, hotel managers should notice that, for conscious customers, hotel experience is more than just a stay and should satisfy their beliefs and values. Hotels are therefore encouraged to include guests' environmental worldviews to target market analysis to adjust investments in sustainable practices.

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CHAPTER I

INTRODUCTION

1.1 Background and context

Environmentally friendly products and services have become a matter of great public concern in the last decade. As the society is becoming more aware of the damage caused on the fragile environment, customers are willing to buy such products or participate in such practices which seem to help in protecting the environment and are known under the names of ‘eco-friendly’, ‘environmentally friendly’ and ‘green’. Purchasing and consuming such products, customers take into account not only their personal satisfaction but also societal and environmental well-being (Frank, 1988; Vermeir & Verbeke, 2006).

Historically, the concern for the environment was referred to industries responsible for direct contamination through their harmful activities. However, the rising awareness of the impact of daily human activities on natural environment has led to the recognition that all individuals and businesses should be engaged in reducing environmental pollution and resource consumption, and the tourism industry is not exempt from this obligation. According to Sloan, Legrand, & Chen (2009), stockholders, employees and customers have increasing expectations of the tourism and hospitality industry to be economically, socially, and environmentally responsible.

The tourism industry in particular has many possibilities to be more sustainable and environmentally friendly. Regarding accommodation sector, the trend of becoming greener is reflected by the emergence and growing popularity of eco-friendly practices employed by lodging establishments. Although a lot of them have already implemented such practices in their daily operation, there are still hoteliers that due to start-up efforts and costs are hesitant to do so. For this reason, not only the willingness of enterprises to be more sustainable is essential, but also customers’ willingness to pay for their services.

Willingness to pay (WTP) primarily means an amount or cost that a person intends to pay for a designated improvement or compensation. In other words, it is a measurement that indicates a person’s intention to act in monetary terms for the given change or quality improvement. A price premium can be hence defined as “the excess price paid over and above the “fair” price justified by the “true” value of the product” (Rao & Bergen, 1992).

Willingness to pay such price can imply there is a demand for the product among consumers and, in regard to paying for the greener product, point to sustainable consumption attitude. This attitude, in turn, is inherent for consumers with high environmental concern (Ottman, 2001) who might believe that, paying premiums for sustainable products, they contribute both to the natural environment and society.

With respect to hotel industry, sustainable consumption takes the form of choosing eco-friendly hotels over conventional hotels. It is, however, arguable that tourists are willing to pay an extra for green hotels, as scientific literature provides with contradictory findings of studies on tourists' WTP. While a part of researchers revealed that some tourists – numbers vary from one study to another – indeed are ready to pay an extra (Tartaglia & Grosbois, 2009; Susskind & Verma, 2011; Han & Chan, 2013), there are also studies claiming that tourists are not willing to pay any premium (Manaktola & Jauhari, 2007; Ogbeide, 2012; Dimara, Manganari, & Skuras, 2015) but willing to pay conventional-hotel prices for green hotels (Kim & Han, 2010; Millar & Mayer, 2013). There is a common opinion among hotel guests that hotels save money employing some energy- and water-saving green practices (Baker, Davis, & Weaver, 2014), so they actually wish to pay less for a stay at a green hotel or at least receive some sort of credit. As to why another part of tourists express the desire to pay a premium, past studies associated it with their environmental attitudes, concerns, and awareness (Kang, Stein, Heo, & Lee, 2012; Kim & Han, 2010; Han, Hsu, Lee, & Sheu, 2011). Other studies explored the relationship between green hotel choices and subjective norms, perceived behavioral control, green consumption, or daily environmental behavior (Han et al., 2009, 2010; Han, Hsu, Lee, & Sheu, 2011; Kim & Han, 2010; Lee et al., 2010; Tsai & Tsai, 2008). Their findings indicated that environmental concern and green consumption behavior are good predictors of green hotel choices.

1.2 Scope and relevance

While many studies have reported consumers' willingness to pay a premium for eco-friendly hotels, limited research is available on association between WTP and tourists' environmental worldviews. This dissertation attempted to address the gap in the literature and focused on assessing WTP a premium for green hotels in relation to tourists' levels of environmental concern.

Besides, past studies did not pay attention that the level of WTP may differ depending on specific eco-friendly practices implemented by a hotel. Exploring the varying effect of tourists' environmental concerns on their WTP a premium for each individual green hotel practice was, thus, of interest in this dissertation. The aspects considered were the amount of premium, importance of green practices, and tourists' demographics. An instrument used to measure levels of environmental concern was the revised New Ecological Paradigm scale, originally created by Dunlap and Van Liere (1978).

1.3 Problem statement

Although an increasing number of hotels include green practices into their operation, some hoteliers are still reluctant to become greener, as, depending on initiatives, it requires initial investments. Charging premiums for such initiatives could be a solution in this case but being unaware whether or not hotel guests are willing to pay a premium for green practices is another obstacle to its initiation.

1.4 Purpose of the study

The main research question of this dissertation asked how tourists' willingness to pay a premium for green hotel practices is associated with their environmental worldviews. There were also several sub-questions to assist in answering the main question:

- Are tourists willing pay more for a stay at a green hotel?
- Which eco-friendly hotel practices are tourists most willing to pay for?
- What are the most important green hotel practices for tourists, regardless of their WTP?
- Is the New Ecological Paradigm scale reliable to measure the levels of environmental concern?
- What are the levels of environmental concern of the study's subjects?
- Is there a difference in WTP for two research samples?
- Is there a difference in NEP scores for two research samples?

In addition to the sub-questions, the study included seven hypotheses to verify or falsify in a further step by means of quantitative research methods. Represented in Table 1, null and alternative hypotheses were created to facilitate the testing.

Table 1.1

Research hypotheses

Null hypotheses	Alternative hypotheses
H1a: There is no relationship between the level of environmental concern and willingness to pay a premium for a stay at a green hotel.	H1b: There is a relationship between the level of environmental concern and willingness to pay a premium for a stay at a green hotel.
H2a: There is no relationship between the level of environmental concern and willingness to stay at a green hotel.	H2b: There is a relationship between the level of environmental concern and willingness to stay at a green hotel.
H3a: There is no relationship between a person's gender and willingness to pay a premium for a stay at a green hotel.	H3b: There is a relationship between a person's gender and willingness to pay a premium for a stay at a green hotel.
H4a: There is no relationship between a person's age and willingness to pay a premium for a stay at a green hotel	H4b: There is a relationship between a person's age and willingness to pay a premium for a stay at a green hotel
H5a: There is no relationship between a person's educational level and willingness to pay a premium for a stay at a green hotel.	H5b: There is a relationship between a person's educational level and willingness to pay a premium for a stay at a green hotel.
H6a: There is no relationship between a person's current status and willingness to pay a premium for a stay at a green hotel.	H6b: There is a relationship between a person's current status and willingness to pay a premium for a stay at a green hotel.
H7a: There is no relationship between the level of environmental concern and willingness to pay a premium for any individual green hotel practices.	H7b: There is a relationship between the level of environmental concern and willingness to pay a premium for any individual green hotel practices.

1.5 Outline of the dissertation

The dissertation is divided into five chapters. After this introduction and problem statement, Chapter 2 contains theoretical background and a review of literature. The goal here was to introduce the concept of environmental awareness as well as attempts to measure it, to discuss the past studies on green hotels, green hotel practices, and tourists' willingness to pay for them. In Chapter 3 methodology used for data collection and analysis is presented. Then, Chapter 4 includes obtained results and its discussion and, finally, Chapter 5 represents a conclusion where major findings of the dissertation are recapitulated and issues inviting future research are proposed.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

Starting with a theoretical framework, this chapter then proceeds to a review of previous research which was used in the development of the dissertation. Topically organised, the review of literature puts into perspective a brief history of the modern environmental movement and goes ahead to environmental awareness. A perspective of the New Ecological Paradigm as an instrument to measure environmental awareness is given. It is also under this section that eco-friendly hotels and their green initiatives are reviewed in depth, including hotel guests' preferences for green hotel practices. Finally, the literature on tourists' willingness to pay for green hotel practices is discussed.

2.2 Theoretical framework

In this study, hotel guests' choice of a green hotel room is regarded as green purchasing, which means "the purchase of environmentally friendly products and avoiding products that harm the environment" (Chan, 2001). Green purchasing is evaluated through green purchase intention, i.e. consumers' willingness to purchase environmentally friendly products, and green purchase behaviour, which is a complex form of ethical decision-making behaviour and a type of socially responsible behaviour (Joshi & Rahman, 2015). Studies that endeavored to explain a relationship between a person's environmental concerns and his or her willingness to pay for green products or services (e.g. Kang et al., 2012; Baker et al., 2014; Leszczynska, 2014) often followed the means-end theory (Gutman, 1982), the value-belief-norm theory (Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Stern, 2000), and the social identity theory (Tajfel and Turner, 1986), as these theories link people's beliefs and values with their decision making and purchasing behavior.

According to the means-end theory (Gutman, 1982), consumer behaviour is based on the assumption that people have certain ideals and aims which they strive to satisfy by purchasing products. Consumers demand products due to their expectations of positive consequences of using the products. Such expectations may be related to the realization of life values. Focusing on attributes of products, which consumers see as a means to some end, the means-end theory shows the connections between attributes, consequences (functional or psychosocial benefits), and values. A means-end chain (see Figure 1.1) demonstrates that

from product attributes can be derived functional benefits which then lead to psychosocial benefits, either referring to psychological or sociological advantages. Through these benefits, the consumer may achieve his or her central life values. For example, when a customer is willing to pay more for a room in a hotel implementing green practices, such attributes as recycling or energy efficient lighting will lead to the functional advantages such as waste reduction or saving energy, to the psychosocial advantages like comprehension of how you have helped to save our planet, which in turn will contribute to achieve the life value of being a true environmentalist. Paying for eco-friendly hotel practices therefore may satisfy personal values of hotel guests who have greater environmental concerns.

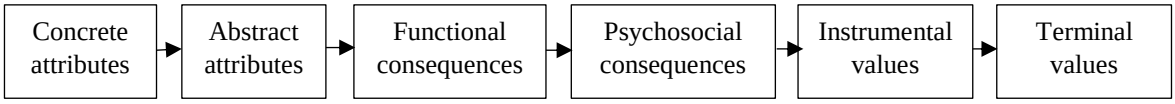

Figure 1.1. The means-end chain model (adapted from Gutman, 1982).

The value-belief-norm (VBN) theory proposed by Stern and colleagues (1999) is another widely studied theory that can be used to explain willingness to pay for green products and services. The VBN theory further develops the norm-activation theory (Schwartz, 1977) by adding a person's ecological worldview and values into the framework. As is clear from Figure 1.2, personal norms in VBN are considered the main predictor of environmental behavior. The VBN model is based on the assumption that individuals adopt eco-friendly attitudes if they feel that they are responsible for protecting themselves, other people, or the ecosystem on the whole.

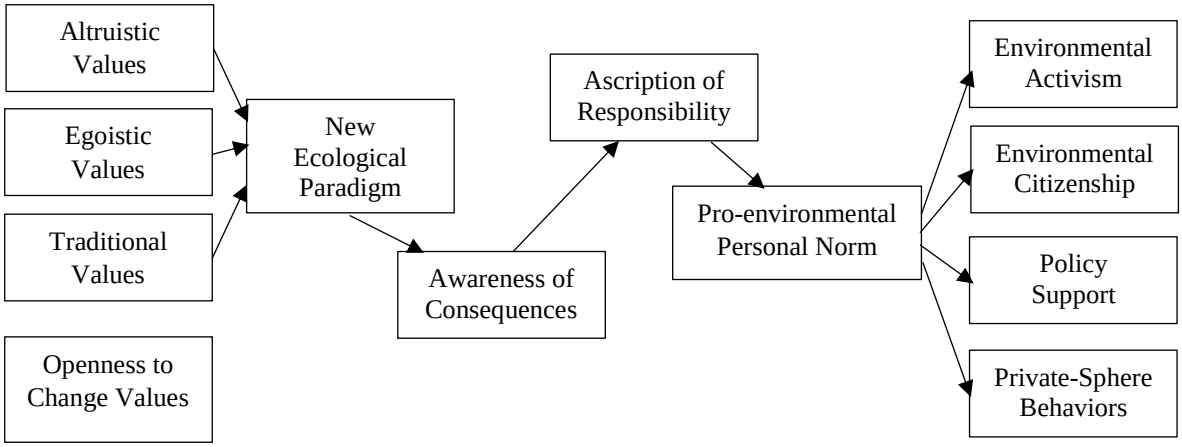

Figure 1.2. Schematic model of variables in the Value-Belief-Norm theory as applied to environmentalism, showing direct causal relationships between pairs of variables at adjacent causal levels (adapted from Stern et al., 1999).

The model proposes that general beliefs concerning the environment stem from some personal values of an individual. Due to their environmental beliefs (such as included in the New Ecological Paradigm), humans perceive the consequences of their behavior for the environment and accept personal responsibility. This leads to a pro-environmental personal norm which activates pro-environmental behavior, including green purchase behavior, as consumers with high environmental concerns evaluate environmental consequences that will follow the product purchase. When they find these consequences significant, they decide to buy the green product. Such purchase not only meets the consumer's needs but also provides long-term benefits for the environment. In regard to paying for a room at a green hotel, this theory explains tourists' WTP through their pro-environmental personal norms and behavior.

Two other theories which this study is based on are interrelated and known under the name of the social identity approach. These are social identity theory (Tajfel & Turner, 1986) and self-categorization theory (Turner, Oakes, Haslam, & McGarty, 1994) which both seek to explain how group memberships impact individual attitudes, emotions, and behaviors. Social identity theory and self-categorization theory have traditionally focused on intergroup relations and intragroup processes respectively, so scholars started to refer to them in conjunction as the "social identity approach". According to this approach, the concept of self contains both personal identity, embracing idiosyncratic aspects of the self, and social identity, rooted in the groups to which we belong.

The term "social identity" means a person's sense of self derived from their actual or perceived membership in social groups (e.g. a company, work group, ethnic group, regional group, etc.). Social identification is, thus, a process through which people perceive themselves as social groups members and attribute the features of these groups to themselves. The influence of ingroup norms is stronger for people that are identified with the group to a higher degree. For instance, when individuals strongly identify themselves with green consumer groups, they feel more attached to those who purchase sustainable products and services. Applying the social identity theory in their studies, Fielding, McDonald, and Louis (2008) revealed that membership in environmentally concerned groups predicts environmental activism intentions, while Dono, Webb, and Richardson (2010) found that social identification with environmentalists can be a predictor of environmental behavior and activism.

2.3 Environmental awareness

Environmental awareness is associated with the recognition by humankind of environmental problems and values, and their relation to economic issues and social standards of living (Chaineux & Charlier, 2007). Nowadays, environmental public awareness and concern are pivotal goals towards a more sustainable future. The modern environmental movement has contributed to higher environmental concern and therefore it is important to follow the main milestones of its development.

2.3.1 The modern environmental movement

Although it is difficult to define when exactly the modern environmental movement started, many environmentalists consider the 1960s as a starting date. This broad opinion is associated with such an important event in environmental history as the release of the book *Silent Spring* by Rachel Carson in 1962, which brought environmental concerns to the USA citizens. The author showed the harmful effects of the indiscriminate use of pesticides on rivers, plants, and animals, painting a sad picture of the long-term environment damage affecting everyday lives of people. Thereafter took place such events as the first Earth Day on April 22, 1970, which demonstrated human's support for environmental protection, and the United Nations Conference on the Human Environment (UNCHE) in 1972, which declared that the deterioration of the earth's natural resources became a global issue.

Decisions of the UNCHE (also known as the Stockholm Conference) has become an important benchmark for governments, public authorities and associations in the coordination of actions aimed at conservation, improvement of environmental protection activities and the wise use of the Earth's natural resources. During UNCHE, the Stockholm Declaration containing 26 principles concerning the environment and development was adopted. The principles proclaimed the requirement to combine socio-economic development and measures aimed at protecting the natural environment, considering the interests of both the developed and developing countries. To implement these principles, was created a special organization – United Nations Environment Programme (UNEP).

The next major landmark in environmental awareness is the adoption of a resolution by the United Nations which created the Brundtland Commission in 1983. Ten years after the Stockholm Declaration and the following strong sustainable movement, this commission was created to establish sustainable development policies. The Brundtland Commission was chaired by Dr. Gro Harlem Brundtland who created *Our Common Future* (also known as the

Brundtland Report on sustainable development) in 1987. The Brundtland Commission stated that future needs should not be compromised because of current needs. *Our Common Future* also suggested an oft-quoted definition of sustainable development: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987).

The publication of the Brundtland Report and the work of the World Commission on Environment and Development laid the groundwork for the convening of the next conference, the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit (United Nations, 1992). The main environmental results of the 20th century and the program of action for the 21st century were discussed during the UNCED, which resulted in a number of documents. These documents include Agenda 21, the Rio Declaration on Environment and Development, the Forest Principles, the Convention on Biological Diversity, the UN Framework Convention on Climate Change, and the UN Convention to Combat Desertification.

The most important document of the Earth Summit is the Convention on Biological Diversity which unambiguously required biodiversity conservation and sustainable use of biological resources from all states. This Convention is the basis of many regional and national strategies for the conservation of flora and fauna, the integrity of ecosystems and the biosphere of the Earth.

Agenda 21 contains specific recommendations to address global environmental issues: protection of air and water, efficient use of land and forests, combating desertification, disposal of radioactive and toxic waste, conservation of biodiversity and ecosystems, the development of environmental education and scientific research, management of demographic processes, the involvement of the population, public and government organizations, financial and business communities in the conservation efforts.

To ensure effective follow-up of the UNCED, in 1992 was created the Commission on Sustainable Development (CSD) known for publication of two sustainability documents which have historical importance: "Indicators of Sustainable Development" and the Kyoto Protocol.

In August 1996, the United Nations published "Indicators of Sustainable Development: Framework and Methodologies", a document, commonly referred to as the 'blue book'. It was distributed to all governments with the invitation to pilot test and

experiment with the proposed set of indicators, and provide feedback on the results. After being tested, the indicators were revised and resulted in a new version (a final framework of 15 themes, 38 sub-themes and 58 core indicators) published in 2001. The 3rd edition of the indicators of sustainable development was issued in 2007 and represent the valuable experiences of states and international organizations over the fifteen years since the adoption of Agenda 21.

The Kyoto Protocol was developed in 1997 as a result of the United Nations Framework Convention on Climate Change. The State Parties committed themselves to reduce the main anthropogenic greenhouse gas emissions based on the premise that climate change exists and is caused by human. The implementation of the Kyoto Protocol implied that the countries should prepare policies and measures for the reduction of greenhouse gases and increase the absorption of these gases and utilize all mechanisms available.

The 2002 World Summit on Sustainable Development in Johannesburg, informally nicknamed as Rio+10, did not result in any monumental outcomes. The main outcome was the Johannesburg Declaration on Sustainable Development built on earlier declarations made at the United Nations Conference on the Human Environment in 1972 and the first World Summit in 1992, although it is a more general statement than previous ones. Cohen (2005) considers one of the most significant results of Rio+10 gathering was the decision that required the international community, including prosperous countries, "to redouble their attention during the coming decade on the environmental costs, economic inequity, and social malaise associated with heavily consumerist lifestyles".

The third World Summit, Rio+20, held in Rio de Janeiro in June 2012, was the most participatory event in the history of the United Nations. Although it did not entail any breakthrough agreements, as well as the previous summit, it provided another platform for international discussion on urgent problems in an effort to achieve global sustainable development. The outcome document, "The Future We Want" is another declaration on sustainable development and a green economy. Despite the fact that it includes broad sustainability objectives concerning poverty eradication, food security, sustainable energy, sustainable transport, sustainable cities, health and population, the declaration appeared as 'lacking depth' or 'modest' to many experts. At the same time, several experts noted that the main result of Rio+20 is that it "catalyzed a global call to make sustainable development priorities central to global thinking and action" (Ong, 2012).

Having traced the history of the environmental movement in the end of 20th century, it can be concluded that the environmental movement is a social and political phenomenon that emerged in conditions of increasing human impact on the environment and arose from interaction of all social groups, interested in the preservation of nature for future generations. This movement has incorporated a common recognition of environmental issues and initiated a common work to prevent existing and hypothetical threats to the environment and humanity, contributing to the growing level of global environmental awareness.

2.3.2 Definition of environmental awareness and concern

Environmental awareness is a problem which requires a broad public comprehension of the role of human in the natural environment. In a broad sense, it can be defined as a set of ideas, views and opinions about the environment as a living place for humans, shared by specific groups in a particular historic period. In a narrow sense, it means the state of knowledge and views of an individual on (1) the role of the environment in human life, (2) the human impact on the environment, (3) the extent of environmental degradation, (4) existing and potential threats, and (5) protection of the environment, including knowledge of laws and other regulations on environmental matters, as well as a variety of actions needed to ensure environmental protection in everyday life (Niezgoda, 2011).

Early definitions of environmental awareness and concern are less comprehensive and are sometimes limited. Maloney et al. (1975) believe that environmental concern is nothing else than readiness to change the behavior backed by degree of emotionality and environmental knowledge. Dunlap and Van Liere (1978), in their pioneering research, defined it as global attitudes with indirect effect on behavior through behavioral intention. Crosby, Gill and Taylor (1981) mentioned that environmental concern is a strong attitude towards preserving the environment. Environmental concern has been also represented as an evaluation of an individual behavior or collective behavior and its aftermath for the environment (Weigel, 1983).

Thus, environmental awareness is extensively defined. In more contemporary studies, for example in Burger's (1996, cited in Niezgoda, 2011) environmental awareness is defined as "a set of facts and convictions about the natural environment and the recognition of a relationship between the state of the natural environment and human quality of life". Another definition of environmental awareness is provided by Kolmuss and Agyeman

(2002) who define it as "knowing of the impact of human behavior on the environment", noting that it has both a cognitive component and an affective component.

Environmental concern is also an important factor in consumer's decision making process (Zimmer, Stafford, & Stafford, 1994, Ottman, 2001). Mainieri, Barnett, Valdero, Unipan, & Oskamp (1997) argued that consumers with a stronger concern for the environment are more likely to buy eco-friendly products as a result of their pro-environmental world view than those whose concern about the environmental issues is lower. Balderjahn (1988) and Roberts & Bacon (1997) argue that environmental concern influences purchase behavior of green products. Lin & Huang (2012) claim that a high level of consumer's environmental concern stimulates propensity for eco-friendly products and consumers willingly choose them when they make purchases. Numerous other studies assert that environmental concern positively influences the green purchase intention and behavior (Van Liere & Dunlap, 1981; Schlegelmilch, Greg, & Diamantopoulos, 1996; Roberts & Bacon, 1997; Kim & Choi, 2005; Hu, Parsa, & Self, 2010; Samarasinghe & Samarasinghe, 2013). Kim and Choi (2005) and Mostafa (2009) found that environmental concern directly influences green buying behavior.

2.3.3 Attempts to measure environmental awareness and the New Ecological Paradigm

As the awareness of the need for protecting the environment for future generations has risen, an increasing number of researches have been carried out in attempt to assess people's level of environmental concern. Numerous measurement scales to assess environmental concern started to appear in the end of the 20th century.

The earliest development of environmental attitudes scales began in the 1970s. One of the first scales is the Maloney-Ward Ecology Inventory (developed in 1973 and subsequently refined in 1975) which is based on the traditional definition of attitudes and contained subscales measuring knowledge, affect, and verbal/actual commitment. In 1978, the Weigel Environmental Concern Scale was developed, which is shorter but contains no sub-scales (Clayton, 2012). Schwepker and Cornwell (1991) analyse 17 various measures used to examine the ecologically concerned consumer developed between 1971 and 1989, which focused on demographic, socioeconomic, cultural, and personality variables, as well as attitudes. The authors refer to Van Liere and Dunlap (1981), who stated that "research in this area has been plagued with mixed results and inconsistent measures". In a discussion of previous research, Schwepker and Cornwell (1991) support this statement, claiming that

only the ‘attitudes’ variable consistently affects concern for ecology, while other variables show mixed results.

Early environmental studies were based on the idea that humans are superior to all other species and the Earth provides unlimited resources for humans. These views supporting human dominance over nature biologists Dennis Pirages and Paul Ehrlich (1974) called the Dominant Social Paradigm (DSP). It entails: “(1) A belief in limitless resources, continuous progress, and the necessity of growth; (2) Faith in the problem-solving abilities of science and technology, and (3) Strong emotional commitment to a laissez-faire economy and to sanctity of private property rights” (Albrecht, Bultena, Hoiberg, & Nowak, 1982).

Referring to it as probably the best example of a dominant environmental discourse, Cox (2010) contrasts it with insurgent discourses. A wider insurgent discourse that emerged in popularity after Earth Day 1970, is the New Environmental Paradigm (NEP) developed by Dunlap and Van Liere (1978), which is known for emphasizing the need to reject the prevailing anthropocentric notion that nature exists solely to serve human’s needs.

The NEP Scale, a survey instrument created by Dunlap and Van Liere (1978) measures environmental attitudes and behaviors and is one of the most extensively used scale for determining a ‘pro-ecological’ world view. The idea was that this instrument could evaluate whether people were moving away from the DSP towards a new, more environmentally conscious world view, a change that, according to the developers, was likely to happen (Anderson, 2012). In its original form, NEP Scale comprised 12 items to measure the extent to which people are endorsing this new world view, reflecting the crucial aspects: humans’ ability to upset the balance of nature, the existence of limits to growth, and humans’ right to rule over the rest of nature (Dunlap & Van Liere, 1978).

However, the original NEP was criticized for several drawbacks such as a lack of internal consistency, a low correlation between the survey measurement and actual behaviour, and outdated or negatively formulated terms (Anderson, 2012; Lalonde & Jackson, 2002). The criticism caused Dunlap and colleagues to address these concerns by creating a revised NEP Scale. According to Dunlap et al. (2000) the revised version of the New Ecological Paradigm Scale was developed to tap a wider range of facets of an ecological world view, to correct the imbalanced set of pro- and anti-NEP items, and to avoid outmoded terminology.

The New Ecological Paradigm (NEP) Scale Statements

1. We are approaching the limit of the number of people the Earth can support.
2. Humans have the right to modify the natural environment to suit their needs.
3. When humans interfere with nature it often produces disastrous consequences.
4. Human ingenuity will insure that we do not make the Earth unlivable.
5. Humans are seriously abusing the environment.
6. The Earth has plenty of natural resources if we just learn how to develop them.
7. Plants and animals have as much right as humans to exist.
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9. Despite our special abilities, humans are still subject to the laws of nature.
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.
11. The Earth is like a spaceship with very limited room and resources.
12. Humans were meant to rule over the rest of nature.
13. The balance of nature is very delicate and easily upset.
14. Humans will eventually learn enough about how nature works to be able to control it.
15. If things continue on their present course, we will soon experience a major ecological catastrophe.

Figure 1.3. The New Ecological Paradigm Scale (adapted from Dunlap & Van Liere, 2008).

The new scale consists of 15 items, 8 of which are pro-NEP and 7 are anti-NEP "to ensure that no single facet was measured with items worded in only one direction" (Dunlap, 2008). Using a Likert scale, respondents are asked to indicate their strength of agreement with each statement ("strongly agree", "mildly agree", "neither agree nor disagree", "mildly disagree" and "strongly disagree"). Agreement with eight odd-numbered items and disagreement with the seven even-numbered items indicates pro-environmental attitude (Dunlap et al. 2000). The sum of the scores on the 15 items indicates the level of endorsement of an ecological world view.

All the items were divided into five areas: balance of nature, limits to growth, antianthropocentrism, rejection of exemptionalism and possibility of an eco-crisis. The first newly added item exemptionalism means "the tendency to see human systems as exempt from the constraints of nature" (Williams, 2007). Thus, the rejection of exemptionalism would mean that people use the earth while recognizing the laws of nature and live according to them. The second item added to the revised NEP scale is eco-crisis which was used to

define a potential ecological catastrophe which may arise from the damaging actions of people (Dunlap et al., 2000).

2.4 Hotel guests' preferences for green initiatives in the hotel industry

2.4.1 Green hotels and green initiatives

The increased environmental awareness has had a significant impact on the hotel industry which has shown much efforts to improve environmental conditions as well as social responsibility. As tourists are becoming more concerned about environmental issues, their selection of hotels to stay in is changing towards more sustainable options incorporating eco-friendly initiatives. This demand, in turn, leads to increasing number of green hotels, also known as environmentally friendly hotels, with new eco-friendly practices they incorporate into their business.

Environmental friendly hotel, eco-friendly hotel and sustainable hotel are the terms which are considered synonymous with the term 'green hotel' (Zengeni, Zengeni, & Muzambi, 2013). Green Hotel Association (2015) defines a green hotel as an environmentally friendly lodging property which implements various policies to reduce the negative impact on the environment and to protect nature. However, since the meaning of term 'green' may vary based on perspective, academic literature on this topic provides with various definitions of a green hotel and green practices.

According to Alexander & Kennedy (2002), a green hotel is a property which make efforts to pursue environmentally friendly business through energy efficiency, conservation of water and reduction of waste. A green hotel also can be defined as a sensitive hotel that notices the environmental issues and strives to minimize environmental degradation on its operation (Iwanowski & Rushmore, 2003). ASEAN Green Hotel Standard (2016) defines a green hotel as a hotel which is environmentally-friendly and adopts energy conservation measures.

Kasim (2004, p. 10) imparts a different shade of meaning to the definition as she addresses social responsibility concept by identifying that a green hotel is a hotel which "operates in a responsible manner towards its employees, the local community, the local culture, and the surrounding ecology". Being green is also considered in relation to business by Gupta (1995) who believes that "the term 'greening' may imply harmonizing corporate environmental performance with stockholders' expectations as well as constituting a significant new source of competitive advantage, such as lower costs and expanded market

share". Furthermore, Gupta and Sharma (1996) assert that rather than expenses, environmental management should be seen as an opportunity to improve firm's position by incorporating eco-friendly practices that will help to reduce both short-term cost and long-term liability.

There are quite diverse green initiatives in the hotel industry, encompassing a variety of practices from pollution prevention to environmental education of staff. Ogbeide (2012) considers that the most common environmentally friendly practices implemented by hotels are saving water, saving energy, and reducing solid waste. However, as environmental protection becomes a more prominent problem, tourists' expectation today is more than just linen and towel reuse programs, and not even limited to efficient waste management, energy and water conservation programs (Ogbeide, 2012). With growing popularity of green hotels all around the world, some other eco-friendly practices have been introduced, including eco-cuisine, installation of hinge activated lighting, and replacement of paper check-in by electronics means (Ogbeide, 2012). According to Kasanava (2008), "being green can range from encouraging guests to reuse towels, to waste recycling, to using wind electricity, to cooking with organic foods, to reducing carbon emissions, to installing rooftop solar panels".

2.4.2 Energy conservation practices

Due to its nature of providing comfort and service to guests, the hotel industry is one of the most energy consumptive industries (Bohdanowicz et al., 2001). According to ICF Consulting Limited (2015), hotels contributes to one percent of global energy consumption and associated CO_2 emissions, which makes it an important but not major consumer of energy. The main energy consuming activities in a hotel are: heating rooms, cooling rooms, lighting, hot water use and other energy consuming activities by guests, preparing meals, and swimming pools (Hotel Energy Solutions, 2011).

ICF Consulting Limited (2015) reports that in 2012 European hotels and restaurants accounted for 11% of total energy consumption in the nonresidential building sector (circa 10.5 Mtoe). At the same time, it was observed that between 2005 and 2012 energy consumption decreased by two percent per year. If this trend continues through 2020 and then decreases at a slower rate of one percent reduction per year through 2050, hotel sector energy consumption could fall to the level of 8 Mtoe and 7 Mtoe in 2030 and 2050, respectively.

Regarding various hotel's applications, Hotel Energy Solutions (2011) reports that estimated potential energy reductions can exceed 45% for efficiency improvements in boilers, use of solar thermal panels for hot water production, and use of energy efficient lighting. Related measures of energy reduction could include a substitution of incandescent light bulbs for fluorescent lighting; installation of energy-efficient laundry equipment as well as digital thermostats; and drying laundered items in the sun. Furthermore, "using geothermal energy, transitioning to renewable energy sources, as well as applying solar energy when appropriate will significantly contribute to overall energy efficiency" (Kasanava, 2008). Energy conservation from heating (e.g. double glazed windows to reduce heat transfer coefficient; high efficiency lighting systems), from artificial lighting (occupancy sensors, improved fluorescent lamps), using natural cooling techniques (ground cooling with ground-air heat exchangers, night ventilation techniques) should also be taken into consideration by hotel owners (ICF Consulting Limited, 2015).

2.4.3 Water conservation practices

Water consumption by a tourist is known to be higher than a water consumption by resident. A European tourist consumes around 300 liters per day compared with a European resident consumption of 100-200 liters per day (EC, 2013). Such a difference could be explained by various reasons, including irrigation, daily room cleaning, daily laundry, maintenance of swimming pools, intensive kitchen activities, and a 'pleasure approach' to showers and baths in accommodation enterprises (Eurostat, 2009, cited in EC, 2013). Luxury hotels particularly consume large amounts of water for leisure purposes such as swimming pools, spas and golf course irrigation (Kasim, 2007). However, there is a lack in statistics relating to water use in hotel sector.

According to Styles, Schönberger, and Martos (2013), there is great potential for water reductions in accommodation properties, and water inefficient hotels can typically reduce water consumption by over 50% by implementing relatively simple and inexpensive practices. The most popular ways to reduce water consumption is replacing current appliances with water-efficient ones, including low-flow showerheads and faucets, low-flush toilets, holding tanks and program modification to reuse rinse water in laundry services. Moreover, tourists could be encouraged to regulate their water use by means of water-saving notices in bathrooms. Kasanava (2008) points out that among common water reduction

practices could also be collecting rain water, placing water meters in rooms to track usage, and grinding guest soaps to use as laundry detergent for hotel uniforms.

2.4.4 Waste reduction and recycling

Waste generation is one of the most harmful effects the hospitality sector has on the environment, especially due to the fact that many of the establishments in this sector, such as hotels, use large quantities of consumer goods as part of their operations (Bohdanowicz, 2005). Special attention should be paid to the amounts of food waste generated by hotels.

The types of waste generated by hotels have been an object of interest in various studies. Some researchers (Axler,1973; Kirk,1995) noted that the common components of hotel waste are aluminum, plastics, glass, steel, cardboard and food waste. According to Zein, Wazner, and Meylan (as cited in Pirani & Arafat, 2014), hotel waste can be non-hazardous and hazardous. Non-hazardous types of waste include: household's wastes, cardboard, paper, plastic, metal, glass, cloth, wood, and organic waste. Hazardous waste types are the following: frying oil, mineral oil, pain and solvent residues, flammable material (gas, petrol, etc.), fertilizers, cleaning chemicals, ink cartridges, it disks and cd's, batteries, cleaning chemicals and solvents used in dry cleaning, fluorescent lights, neon tunes and long-life bulbs. However, the lists include only the most significant constituents of waste and are not limited to them. Sometimes in hotel waste can be found bulky items (e.g. furniture), construction and demolition waste (e.g. concrete, pipes, etc.), discarded electronics and office appliances, and used refrigerating equipment (Zein et al., as cited in Pirani & Arafat, 2014).

The hotel industry has endeavored to reduce the amount of waste notably through recycling, composting, waste prevention and eco purchasing activities. Recycling particularly is known as a popular practice, probably due to a short payback period and significant savings of many recycling methods (Bader, 2005). Composting practices could be used for food waste (e.g. taking food waste to a composting facility by a hauler, developing a plan for collecting the food waste) and result in significant savings in trash disposal costs (Northeast Recycling Council, 2011).

Jackson (2013) suggests the following practices in waste management: 'paperless' transactions whenever possible; a waste reduction plan for electronics; a waste reduction and recycling program for office paper and cardboard items; recycling cans or receptacles for recyclable items; donating used cooking oil. All the waste management practices should be

communicated to guests through guest books, media boards, in-house television, posters, and brochures. However, Jackson (2013) considers the most effective method for reducing waste is its prevention, which could be achieved through eco purchasing. A short list of commonly used products in hotels which green versions are widely available include: printing and writing paper; envelopes; toilet paper, tissues, and paper towels; office supplies; office electronics (computers, printers, copiers); remanufactured toner cartridges; cleaning products; janitorial supplies; lamps; and appliances (Northeast Recycling Council, 2011).

2.4.5 Hotel guests' preferences for green practices

Despite the fact that there are many various practices followed by hotels to be environmentally friendly, it is essential to identify which practices or attributes are important for tourists to stay in a green hotel. This could help hoteliers to promote the 'right' attributes attracting environmentally conscious tourists and understand what message they are sending to hotel guests as a green hotel (Millar & Baloglu, 2008).

Studying which green hotel attributes guests would like to have in their rooms, Millar and Baloglu (2008) find out several items that guests well received as eco-friendly initiatives, including energy saving light bulbs throughout the room, low flow toilets and faucets, towel re-use, sheets change upon request, recycling bins, occupancy sensors and key cards. At the same time, the guests did not prefer refillable shampoo, soap dispensers and low flow showerheads, due to their opinion that these items cause inconvenience while bathing. Similarly, Manaktola and Jauhari (2007) reveal that the following variables contribute to positive tourists' attitudes towards green practices: recycling programs, a linen re-use option, environmentally friendly products (i.e. low toxicity, organic or locally made), use of renewable energy sources, and eco-certification. Besides, Berezan, Millar, and Raab (2014) identify that the guests were most satisfied with the hotel recycle policy and hotel's efforts to purchase green products, however towels and linens re-use as well as dispensers instead of individual containers were practices perceived negatively.

Investigating how guests will react to changes that are intended to save energy, Susskind and Verma (2011) focused on two experimental conditions in rooms: reduced television power levels and alterations in bathroom lighting. Both conditions were favorably evaluated overall, showing that it is possible to reduce energy consumption this way without hindering guest experience. However, only 30% of the respondents indicated that they would choose a hotel based on its sustainable initiatives. This finding supports a similar one in the

study by Manaktola and Jauhari (2007), who revealed that only 22% of their respondents intentionally seek information about environment friendly practices of hotels and use it while selecting a hotel to stay.

Another study by Ogbeide (2012) explores the perception and attitudes of tourists toward green hotel/resort concepts. The instrument used in this study consists of 17 statements on the importance of water conservation, energy conservation and waste reduction and 12 statements on consumers' attitudes and behavior towards green practices. The results have shown that travelers perceive green hotels positively and seem to be ready to include them to their travelling habits. Respondents well received such practices as towel and linen re-use and low flow toilets, while low flow showerheads turned out to be unfavorable and low flow faucets seemed to raise some doubt. The most important conservation method to the respondents was energy conservation (89.6%), followed by waste reduction (85.06%) and water conservation (69.71%).

The results of the study conducted by Han and Chan (2013) are similar to those of Ogbeide (2012). By means of qualitative interviews, the researchers revealed that activities aimed at saving resources and energy were most frequently mentioned by the respondents as favorable, followed by using environmental friendly materials and not using single-use or individually packed consumables (e.g. shampoo). Concerning specific eco-friendly practices, the respondents positively evaluated planting trees for the purpose of cleaner air, setting up smoke-free rooms, and asking guests to sort the waste and turn off electrical appliances while they are not in the room. The least favorable practice of the respondents was using low flow showerheads.

Yi, Li, and Jai (2016), investigating guests' perception of green hotels through a content analysis of TripAdvisor hotel reviews, came to conclusion that hotel guests generally agree with the purposes of green practices. The results show that the most frequently mentioned green practices (in decreasing order) are eco purchasing, education and innovation, energy reduction, recycling, towels re-use, waste reduction, water conservation, eco-friendly site installations, linen re-use, and guest training. However, 42% of the reviewers negatively perceived the water conservation practices, especially low pressure showerheads, which supports some previous studies' results. Although the majority of hotel guests positively evaluated the energy conservation initiatives, many guests still complained about the room temperature and poor light. Concerning waste reduction, all the comments

were positive and guests were especially content with reusable glass bottles. Guest training was very well perceived and most of the comments regarding towel and linen re-use policy were also positive.

An attempt to identify a list of eco-friendly attributes which hotel guests would prefer in their rooms was made by Verma and Chandra (2016). The results of their research conducted by means of online questionnaire support the findings of Millar and Baloglu (2008) and partially of Manaktola and Jauhari (2007). Consumers well received such attributes as energy efficient light bulbs in rooms, recycling bins in rooms as well as in lobbies, green certifications, and the use of non-conventional energy sources. Refillable shampoo dispensers, organic food, towel re-use program and sheets changed upon request were the practices perceived negatively.

The findings of analysed studies show that hotel guests do not perceive all green initiatives in hotels equally well. The main reason guests dislike a specific initiative is inconveniences it causes while staying in a hotel, but opinions may vary depending on levels of guests' environmental concerns or even on the country they come from. It can be concluded that the most positively perceived initiatives are energy saving practices (e.g. efficient light bulbs) and recycling practices (e.g. recycling bins). Towel and linen re-use policy is generally well-perceived, although it may be uncomfortable for some guests. Low pressure showerheads is an attribute guests usually dislike, perhaps due to being unaware how exactly they help to reduce water consumption or simply being dissatisfied with water pressure or a longer shower (Millar & Baloglu, 2008; Han & Chan, 2013). Another item guests do not necessarily want in their rooms is refillable shampoo dispensers, probably because of "the perception that dispensers may not be sanitary or that it can be unclear what exactly is in the dispensers" (Millar & Baloglu, 2008).

2.5 Tourists' willingness to pay for green initiatives in the hotel industry

Understanding consumers' willingness to pay (WTP) for environmentally friendly initiatives is crucial for its the future success, as its implementation involves capital investment. While both the necessity for natural environment and tourists' demand for green practices in hotels are clear, there is still limited amount of academic studies regarding tourists' WTP for them. Although more hotels are implementing sustainable practices every year and the range of these practices is broadening, many questions about guests' WTP remain unanswered. For example, it is unclear how much more hotel guests are willing to

pay for green initiatives and what the differences are in WTP across various initiatives. Besides, the existing literature on average WTP for green practices provides with rather contradicting findings.

There is a number of studies on the willingness of tourists to pay extra for environmentally friendly initiatives implemented in hotels. Various studies have tried to associate tourists WTP with their environmental concerns (Tartaglia & de Grosbois, 2009; Kim & Han, 2010; Han et al., 2011; Kang et al., 2012; Baker et al., 2014; Chia-Jung & Pei-Chun, 2014), with an overall image of the hotel (Han et al., 2009; Lee et al., 2010; Lita et al., 2014), and with specific green practices implemented in the hotel (Wehrli et al., 2011; Chia-Jung & Chen Pei-Chun, 2014; Sánchez-Ollero et al., 2014). However, the findings of these researches are inconsistent. In some studies, the substantial amount of hotel guests is willing to pay premium for eco-friendly initiatives (Tartaglia & de Grosbois, 2009; Susskind & Verma, 2011; Han & Chan, 2013), while in others the majority of guests consider that a green hotel room should be either priced lower or not be priced differently than one which is not green (Manaktola & Jauhari, 2007; Millar & Mayer, 2013; Ogbeide, 2012; Dimara et al., 2015). It was identified that tourists who do not want to pay more for eco-friendly hotel practices view them as cost-cutting measures of a hotel (Millar & Mayer, 2013; Baker et al., 2014; Dimara et al., 2015) and therefore believe that rooms in hotels implementing them should cost less.

Some hopeful results for WTP a premium price have been found in a study by Tartaglia and de Grosbois (2009) who investigated tourists' environmental beliefs and tourists' environmental behaviour while on a trip. The majority of responses to their questionnaire were pro-environmental and showed that respondents had concern for the environment. 57.7% of the respondents indicated that they were willing to pay extra for travel products with less negative impacts on the environment. Another study which shows great percentage of green hotel guests who are willing to pay higher rates for their rooms is conducted by Han and Chan (2013) in Hong Kong. 23 out of 30 (77%) interviewees were willing to pay higher rates for green hotel rooms to support environmental initiatives. Similarly, Susskind and Verma (2011) who addressed implementation of energy-saving practices in hotel guest rooms, more specifically reduced television power levels and alterations in bathroom lighting, demonstrated that 45% of respondents were willing to pay a higher room rate for sustainability initiatives in a hotel.

At the same time, in a number of studies the findings were not so positive. In particular, Manaktola and Jauhari (2007) found that tourist in India are not willing to pay for green practices, although they want hotels to implement them. The majority of the respondents (52%) felt that the hotels themselves should absorb the costs of eco-friendly practices, while 33% of the respondents thought that consumers and hotels should share them, and only 15% of consumers were willing to pay for them. Out of the respondents who were willing to pay for green practices, 40% indicated that they could pay from four to six percent more for a green hotel (Manaktola & Jauhari, 2007).

Similar results were found in the study by Millar and Mayer (2012) who also addressed the issue of how much more hotel guests are willing to pay for green practices. 14% of the respondents in this study were willing to pay more, and out of this sample, the majority was willing to pay up to 10% more. However, 80% of the respondents still indicated that, for a green hotel, they were willing to pay the same amount of money as for one that is not green. Besides, five percent believed that an environmentally friendly hotel room should cost less. These findings generally correspond to the ones of Dimara et al. (2015), whose study revealed that 67% of the respondents were unwilling to pay premium and 25% thought that they should pay less for a green hotel room. In the research by Ogbeide (2012), 75% of the consumers were also willing to pay less or the same amount of money for a green hotel room as compared to a room in non-green hotels. The reasons for such responses may vary, for instance some of the respondents believe that green practices allow cost savings for a hotel, which should result in lower prices for rooms (Millar & Mayer, 2013; Dimara et al., 2015), while others consider that green hotels do not have the facilities and services that guests receive in traditional hotels and therefore they should be less expensive (Millar & Mayer, 2013).

Kim and Han (2010), who made an attempt to extend the theory of planned behaviour (TPB) by incorporating environmental concerns, perceived customer effectiveness and environmentally conscious behaviors to the original framework, came to conclusion that these new constructs are crucial in predicting intention to pay conventional-hotel prices for green hotels. Environmental concerns construct in their study was evaluated through U.S. respondents' levels of agreement or disagreement for the following statements: "(1) the balance of nature is very delicate and easily upset; (2) humanity is severely abusing the environment; (3) the earth is like a spaceship with only limited room and resources; and (4) humans must live in harmony with nature in order to survive" (Kim & Han, 2010, p. 1006).

Out of the three constructs added to the TPB, environmental concerns were found to be the most significant predictor of intention to pay non-green hotel prices for a green hotel.

Investigating how environmentally friendly attitudes of U.S. customers affect their intentions to visit a green hotel, to pay for it and to spread positive word-of-mouth, Han et al. (2011) revealed a relationship between such attitudes and intentions, which is of interest for future studies. Eco-friendly attitudes in this study were measured through eight items grouped in four sections: (1) severity of environmental problems, (2) inconvenience of being environmentally friendly, (3) importance of being environmentally friendly, and (4) level of responsibility of business corporations. By means of multiple regression analyse, Han et al. (2011) discovered that the level of responsibility of business corporations was the most important item affecting customer's intentions to pay more for a green hotel. Contrasting results were found in a study by Baker et al. (2014), who also hypothesized that consumers' eco-friendly attitudes affect their WTP more for a green hotel. Eco-friendly attitudes were measured using the four aforementioned dimensions, however a clear correlation was found only between the inconvenience variable and WTP.

An attempt to investigate the relationship between the level of U.S. hotel guests' environmental concern and their WTP a premium for green hotel initiatives was made by Kang et al. (2012). To measure hotel guests' environmental concern, the authors used the New Ecological Paradigm (NEP) Scale. The correlation between NEP and WTP variables proved to be highly positive and statistically significant, which led to conclusion that hotel guests with higher levels of environmental concerns demonstrate a higher WTP a premium for hotels' green practices. The results for WTP showed that 66% (302 respondents) of the total sample were willing to support the hotel's environmental efforts by paying a premium. Out of this sample, 37% (170 respondents) indicated WTP an extra to the tune of one to five percent, while 24% (107 respondents) claimed WTP an extra to the tune of six percent to 10%. Five and a half percent of the respondents were willing to pay a premium of more than 10% for green hotel practices.

Analyzing the determinants of Taiwanese tourists' choice of green hotel attributes, Chia-Jung & Pei-Chun (2014) evaluated the WTP for such services. The items for environmental attitudes were based on previous studies in this area (Stone, Barnes, and Montgomery (1995) and Mostafa (2006), cited in Chia-Jung & Pei-Chun, 2014), e.g. "Excess packaging is one source of pollution that could be avoided if manufacturers were

more environmentally aware" and "My involvement in environmental activities today will help save the environment for future generations". Using the latent variable class model, it was revealed that the respondents with high levels of environmental concern were less likely to choose a hotel that required environmentally friendly behavior and preferred green hotels with luxurious rooms as well as hotels which have more environmentally friendly attributes. Regarding WTP for specific green attributes, the respondents were willing to pay more for upgrade of their rooms and provision of personal toiletries, demonstrating a preference for better service and comfort. At the same time, the WTP evaluation for the attribute of cooperating with eco-friendly behavior showed a negative number, which implies that the hotel guests would behave this way for a compensation. This result supports the findings of studies by Millar and Mayer (2012), Ogbeide (2012), and Dimara et al. (2015) showing that some of the respondents would like to pay less for a green hotel room.

Sánchez-Ollero et al. (2014), who employed hedonic pricing theory in their study, revealed that implementation of environmental measures had a highly significant impact on a hotel room price in Andalusia (Spain). The environmental measures used in their survey are as follows: evaluation of environmental costs and savings, staff training on environmental issues, "green purchasing" policies, environmentally friendly marketing strategies and campaigns, energy and water saving measures, waste recycling, and environmentally conscious employees. The results showed that each of these measures increased the room price by 5.15 percent (€4.99), with a total of 36.05% for all the seven measures. It was concluded that, according to the hedonic methodology, hotel guests positively value environmentally friendly measures due to their WTP a premium price for its implementation.

Another research which attempted to identify the preferences of tourists and their WTP a premium for sustainable products was conducted in Switzerland by Wehrli et al. (2011). Although the authors did not investigate the hotel industry specifically, the results are of interest, since sustainable tourism implies eco-friendly accommodation options. Employing a choice model, Wehrli et al. (2011) examined the preferences for following attributes of sustainable tourism: use of local products, environmental management (energy, water and waste), fair working conditions, and CO_2-compensation. The range of the premium for a specific attribute was defined between 0.19% and 0.47% of price, measures of environmental management (including waste reduction, recycling, the use of sewage

plants, and efficient energy consumption) being the most valued attribute. The respondents indicated WTP a low premium of 1.43% for the inclusion of all the suggested attributes.

Finally, studying the impact of a green hotel image of behavioural intentions of tourists, a few authors came to important findings concerning WTP. Han, Hsu, and Lee (2009) investigated the role of tourists' green attitudes on consumer behaviour and reported that consumer attitudes towards eco-friendly behaviour are crucial for an overall image of a hotel. They found that hotel image has an impact on revisit intention, word-of-mouth and WTP a premium. Sampling US hotel guests, Lee et al. (2010) confirm these findings, claiming that a green hotel's overall image contributed to the intention to make positive recommendations, the WTP a premium price, and the intention to revisit the hotel. However, the unique finding of this study was that an overall hotel image led to WTP a premium much less significantly than word-of-mouth and revisit intentions. In a recent study of green attitude and behaviour of Indonesian tourists, Lita et al. (2014) correspondingly found that attitude toward green behavior has a positive impact on overall image, which in turn has significant influence on tourists' visit intention, word of mouth, and WTP.

2.6 Summary

This chapter first discussed the theories underlying the development of this study, including the means-end theory, the value-belief-norm theory, and the social identity theory, all of which were employed in the previous studies on a relationship between environmental concerns of customers and their willingness to pay for green products or services. The chapter further introduced the studies related to environmental awareness and NEP as an instrument used to measure it. Previous research related to green hotels and their sustainable practices was presented and, finally, a body of studies with controversial results on WTP for green initiatives was analysed. The following chapter describes the instrument and method of data collection as well as methods of data analysis used in this study.

CHAPTER III

RESEARCH METHODOLOGY

3.1. Introduction

This study sought to reveal whether tourists are willing to pay more for a stay at eco-friendly hotels or not and whether there is a relationship between their WTP and level of environmental concern. This relationship has been a topic of some previous scientific studies, for instance, a study by Kang et al. (2012) on consumers' WTP for green initiatives of the hotel industry. However, their research primarily concentrated upon varying WTP according to environmental concern as well as hotel types (economy, mid-priced, or luxury). Some other studies were dedicated to hotel guests' perceptions of green hotel attributes (Verma & Chandra (2016), Millar & Baloglu (2008), Manaktola & Jauhari (2007)), but no past research has focused on association between the level of environmental concern and WTP for specific green practices. This study also attempted to add additional insight on this matter, so specific eco-friendly practices implemented by hotels, tourists' perceptions about their importance, and tourists' WTP for each one of them were explored.

3.2 Instrument for data collection

A questionnaire (see Appendix I) was designed as a data collection instrument for this study. Titled "Tourists' Willingness to Pay for Green Hotel Practices", it was originally created in Google Forms for online distribution but later was converted into Microsoft Word document, edited, and printed for distribution in hotels. A questionnaire thus had two versions, one being for online data collection using Google Forms and another one for data collection in hotels. The only difference between these two versions was that hotel guests were asked three more questions: about the purpose of their stay, the duration of their stay and the type of visitor (first time or returning).

The questionnaire was designed to start with a short introduction, informing the respondents about the purpose of the study, the general topic, and the approximate duration for completion. A confidentiality statement was also made to assure respondents they will stay anonymous. The first part of the questionnaire contained eight questions about the importance of green hotel practices and willingness to pay (WTP) for them. The second part was dedicated to concern for the environment and represented the New Ecological Paradigm (NEP) scale. The third part consisted of demographic questions. The questionnaire contained

the following options for questions requiring a response on the Likert-type scale: Strongly Disagree (=1), Disagree (=2), Neutral (=3), Agree (=4), Strongly Agree (=5).

The following measurement constructs were used in this study.

1. Willingness to pay a premium for an eco-friendly hotel (main construct).

Two items used by Kang et al. (2012) were included in this section, slightly different formulated:

- I am willing to pay a premium for a stay in a hotel implementing green practices;
- To support the hotel's efforts to be environmentally friendly, I am willing to pay a premium at the rate of....

One questions asked about the purpose the premium revenue should be used on:

- Regardless of your previous answer, how the total amount of premium revenue should be used?

One open-ended question asked to explain the reasons, in case a respondent was not willing to pay a premium for green hotel practices.

This construct also included willingness to pay a premium for individual hotel practices. Using five-point Likert scale, respondents were asked to indicate their strength of agreement or disagreement that it is reasonable to pay extra for twelve green practices. The following ten practices included in this section were obtained from Millar & Baloglu (2008):

- energy saving light bulbs;
- refillable shampoo dispensers;
- refillable soap dispensers;
- recycling bins;
- towel re-use programs;
- sheets change upon request;
- occupancy sensors reducing lighting;
- key cards for turning on/off the lights and power in a guest room;
- low-flow toilets and faucets;
- low-flow showerheads.

Two more practices were obtained from Verma & Chandra (2016):

- purchase of organic or locally made products;
- use of non-conventional energy sources, e.g. solar installations.

2. Environmental worldview (main construct).

To measure environmental concerns, this study adopted an existing and already widely used questioning model called the New Ecological Paradigm (NEP) scale. This section, therefore, consisted of 15 statements from the NEP scale:

- We are approaching the limit of the number of people the Earth can support.
- Humans have the right to modify the natural environment to suit their needs.
- When humans interfere with nature it often produces disastrous consequences.
- Human ingenuity will insure that we do not make the Earth unlivable.
- Humans are seriously abusing the environment.
- The Earth has plenty of natural resources if we just learn how to develop them.
- Plants and animals have as much right as humans to exist.
- The balance of nature is strong enough to cope with the impacts of modern industrial nations.
- Despite our special abilities, humans are still subject to the laws of nature.
- The so-called "ecological crisis" facing humankind has been greatly exaggerated.
- The Earth is like a spaceship with very limited room and resources.
- Humans were meant to rule over the rest of nature.
- The balance of nature is very delicate and easily upset.
- Humans will eventually learn enough about how nature works to be able to control it.
- If things continue on their present course, we will soon experience a major ecological catastrophe.

Respondents were asked to indicate their strength of agreement or disagreement with each of the items above on a five-point Likert scale

3. Willingness to stay (WTS) in a green hotel.

This construct was included in the study to analyze if there is a difference in numbers of tourists supporting green hotels and tourists that are willing to pay a premium for a stay at green hotels. Some previous studies, such as Manaktola & Jauhari (2007) and Millar & Mayer (2013), revealed that, although tourists are willing to stay in eco-friendly hotels, they

disagree to pay for them more than for conventional hotels. One item mentioning WTS was thus included in this section:

- If I have a choice, I will choose a hotel based on its green practices.

4. The importance of green hotel practices.

From the same practices listed in the first section, respondents were asked to select five hotel practices that seem to be more important than others, regardless of their WTP. This question was included to discover if there is difference between the practices people feel reasonable to pay a premium for and the practices they find most important.

3.3 Method of data collection

The data for this research was collected two ways, via online questionnaire and in hotels of Peniche, Portugal. The distribution in hotels and sending invitations to take part in online survey both started in the end of May 2017 and finished in the end of July 2017. Hotels selected for distribution were MH Hotel Peniche, Hotel Soleil, and Surfers Lodge. In total, 233 complete questionnaires were collected, about a half from hotel guests (105; 45.1%) and slightly more via Internet (128; 54.9%). From Hotel Soleil were collected 45 questionnaires (42.9%), from MH Hotel Peniche 41 (39%), and from Surfers Lodge 19 (18.1%).

3.4 Method of data analysis

The collected responses were coded and analyzed using SPSS v 25.0. Exploratory data analysis and descriptive statistics performed included calculation of quartiles, measures of central tendency (mean and median), measures of dispersion (range, standard deviation, variance, minimum and maximum), and creation of histograms. To test the reliability of the revised NEP scale and determine its dimensionality, a Cronbach's alpha coefficient was calculated and a factor analysis was run.

Both graphical methods (i.e. plotting histograms of the variables) and the Shapiro-Wilk test were used for checking normality of variables. Due to the data being non-normally distributed and having an ordinal dependent variable (WTP), it was decided to run nonparametric tests. Differences between groups tests (Mann-Whitney U test and Kruskal-Wallis H test) and association tests (Spearman's correlation) were thus performed.

The Mann-Whitney U test, a rank-based nonparametric test, was performed to determine if there are differences between two different gender groups (males and females) on a dependent variable WTP. The Kruskal-Wallis H test, which is generally considered the nonparametric alternative to the one-way ANOVA, was performed to determine if there are statistically significant differences between two or more groups of such independent variables as age, education, and current status on dependent variable WTP. The hypotheses for both these tests are as follows:

H_0: the distribution of scores for the groups are equal

H_A: the distribution of scores for the groups are not equal

For statistically significant Kruskal-Wallis H tests, post-hoc tests using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons were conducted.

To measure the strength and direction of the relationship between ordinal or continuous variables (WTP/WTS and NEP score), the Spearman's rank-order correlation was run. Null and alternative hypotheses are as follows:

H_0: There is no association (i.e., monotonic relationship) between the variables in the population.

H_A: There is an association (i.e., monotonic relationship) between the variables in the population.

3.5 Summary

This chapter presented the methods employed in this study, starting from the instrument of data collection and proceeding to methods of data collection and data analysis. A questionnaire was designed including four constructs of the study: two main constructs such as willingness to pay a premium and environmental concern, and two more constructs being willingness to stay and the importance of green hotel practices. Since data was collected two ways, two samples were formed: hotel guests sample, representing tourists from Peniche hotels, and online survey sample, representing people invited to respond to an online version of the questionnaire.

The study first performed exploratory analysis and descriptive statistics of demographic variables. Then, the constructs of WTP and environmental concerns were analysed. As one of the aims of this study was to test dimensionality of the NEP scale, it was

decided to incorporate factor analysis in statistical procedures. Prior to this, to verify if the data is suited for factor analysis, the Kaiser-Meyer-Olkin test was run. Calculation of a Cronbach's alpha tested the consistency of the scale.

Finally, the main analysis included both WTP, the NEP score, and demographic variables. Due to the data collected being non-normally distributed and having an ordinal dependent variable (WTP), the study employed nonparametric statistics to test the hypotheses. Procedures performed included the Spearman's rank-order correlation to explore the relationship between WTP and the NEP score as well as WTS the NEP score; besides, the Mann-Whitney U test and the Kruskal-Wallis H test were run to reveal the differences between two or more groups of independent variables (gender, age, educational level, and current status) on an ordinal dependent variable (WTP).

The next chapter provides with the results which were obtained using the described methods. The reader can expect to find all the results in the same order as corresponding methods of data analysis were presented in this section.

CHAPTER IV

RESULTS, ANALYSIS, AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study obtained through the methods of data analysis which were expounded in the previous chapter. First of all, a descriptive analysis of respondents' demographics is presented. Then, employing the same procedures, willingness to pay (WTP) a premium is analysed, including an overall WTP for a stay at a green hotel and WTP for specific green practices. As the study also sought to explore the reliability and dimensionality of the NEP scale, the findings on environmental worldview, in addition to exploratory and descriptive statistical analysis results, include the results of factor analysis of the NEP scale. Finally, this chapter introduces the results of statistical hypotheses testing, including findings on a relationship between WTP and the NEP score as well as findings on group differences of demographic variables on WTP.

4.2 Demographic characteristics

4.2.1 Hotel guests sample

As is shown in Table 2.1, the highest number of respondents was in 30-44 age group (41.9%), followed by 45-59 age group (25.7%), and 18-29 age group (21%). Fifty-three percent of the sample were males. The majority of the participants (69.6%) obtained a graduate degree, as 61% indicated that the highest level of education they had completed was a bachelor's degree, 8.6% had a master's degree. Three quarters of respondents were either employed (60%) or self-employed (15.2%).

The hotel guests were also asked three questions which were absent in online questionnaire: about the purpose of their visit, the visitor type (returning or first time), and the duration of their trip or holiday. It can be clearly seen from Table 2.1 that the amount of leisure/holiday tourists (55.2%) is significantly larger than other groups. Thirty respondents (28.6%) indicated that their main purpose was surfing. These results correspond to the type of destination where the surveys were collected, as Peniche is popular for sun and beach tourism as well as surfing. Sixty-two tourists (59.0%) stayed at their hotels for the first time, while the rest were returning visitors. Another variable which is not reported in Table 2.1 is

duration of stay (in days). This continuous variable has a mean value of 5.04 and ranges from 2 to 10.

Table 2.1
Respondent demographics

Characteristic	Frequency (%)	
Age	Hotel guests sample	Online survey sample
18-29	22 (21.0)	64 (50.0)
30-44	44 (41.9)	23 (18.0)
45-59	27 (25.7)	33 (25.8)
60+	12 (11.5)	8 (6.2)
Total	105 (100.0)	128 (100.0)
Gender		
Female	49 (46.7)	90 (70.3)
Male	56 (53.3)	38 (29.7)
Total	105 (100.0)	128 (100.0)
Education		
Middle school or less	3 (2.9)	3 (2.3)
High school	29 (27.6)	5 (3.9)
Bachelor's degree	64 (61.0)	71 (55.5)
Master's degree	9 (8.6)	35 (27.3)
Doctoral degree	0 (0.0)	14 (10.9)
Total	105 (100.0)	128 (100.0)
Current status		
Student	10 (9.5)	18 (14.1)
Employed	63 (60)	69 (53.9)
Self-employed	16 (15.2)	25 (19.5)
Unemployed	4 (3.8)	8 (6.3)
Retired	12 (11.4)	8 (6.3)
Total	105 (100.0)	128 (100.0)
Purpose of visit		
Business	3 (2.9)	
Visiting friends/relatives	4 (3.8)	
Holiday/leisure	58 (55.2)	
Education	1 (1.0)	
Culture	2 (1.9)	
Nature	7 (6.7)	
Surfing	30 (28.6)	
Type of visitor		
First time visitor	62 (59.0)	
Returning visitor	43 (41.0)	

4.2.2 Online survey sample

The largest age group in this sample was 18-29 group (50%), followed by 45-59 age group (25.8%), and 30-44 age group (18%). Seventy percent of the sample were females. The majority (55.5%) had a bachelor's degree, 27.3% had a master's degree, and 10.9% had a doctoral degree. Most of respondents were either employed (53.9%) or self-employed (19.5%), while 14.1% of the sample were students.

Distribution of nationalities differs considerably for hotel guests sample and online survey sample (see Figure 2.1). For online survey, the participants were principally engaged from personal acquaintances, which resulted in an overwhelming majority of respondents being Russian, whereas hotel guests sample shows much diversity. Portuguese tourists represent the majority (18%), followed by German (15%) and Spanish tourists (15%).

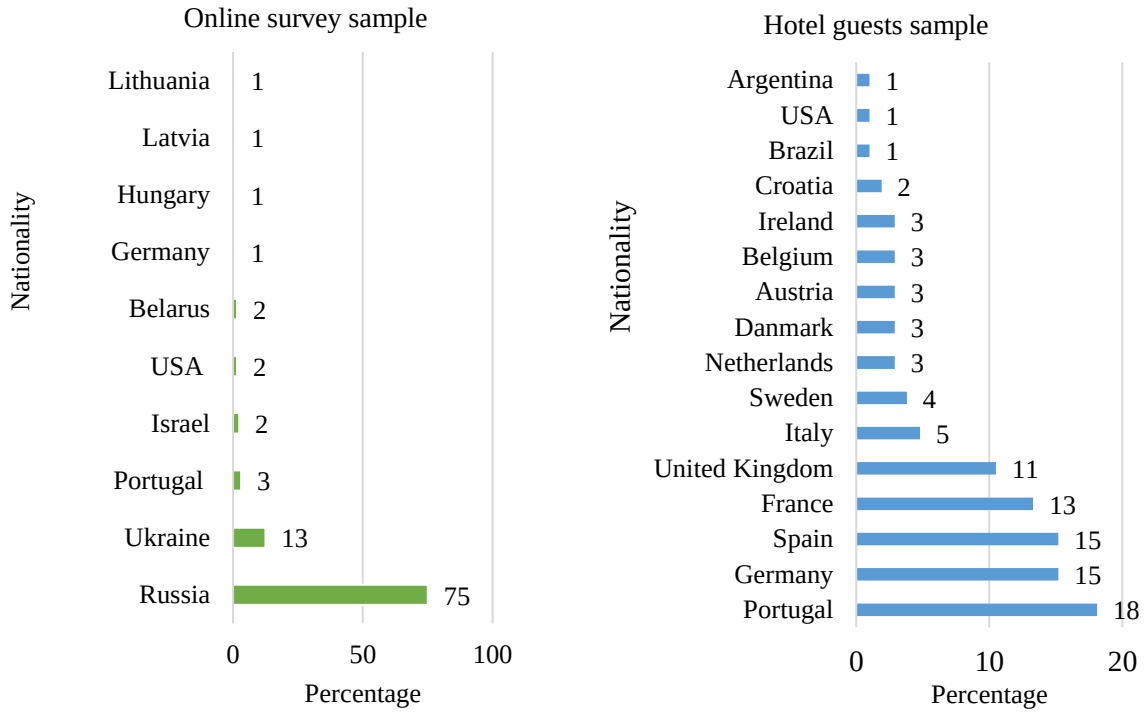

Figure 2.1. Nationality of respondents.

4.3 Willingness to pay for green hotel practices

An analysis of the respondents' willingness to pay (WTP) was based on the first section of the questionnaire, containing eight answers. Regarding the first statement, "If I have a choice, I will choose a hotel based on its green practices", in the hotel guests (HG) sample, almost 87% of respondents either agreed or strongly agreed (see Table 2.2). This finding was expected, since the hotels in which respondents stayed were eco-friendly. For instance, MH Peniche realizes a range of solutions that minimize its environmental impact (e.g. photovoltaic panels, solar panels, LED lighting, recycling), and Surfers Lodge was furnished using recycled materials and use local organic produce for the restaurant. The online survey (OS) sample showed less certainty, with one quarter of respondents who chose "neutral". However, more than a half of the OS sample still supported the statement, whereas 18.8% showed that green practices are not a determinant when they choose a hotel.

Almost 95% of the HG sample were willing to pay a premium for eco-friendly hotels, while in the OS sample only 46.1% demonstrated their willingness, 28.1% were uncertain, and one quarter were unwilling. The results for the amount of premium were similar for both samples, with 51.4% of HG sample willing to pay 6 to 10% extra and 36.2% 1 to 5% extra, whereas in the OS sample the results for these two answers were almost the same (around 40% each).

Table 2.2

WTP a premium for green hotels

	Hotel guests sample		Online survey sample	
	N	%	N	%
If I have a choice. I will choose a hotel based on its green practices				
Strogly disagree	0	.0	7	5.5
Disagree	2	1.9	17	13.3
Neutral	12	11.4	32	25.0
Agree	46	43.8	29	22.7
Strongly agree	45	42.9	43	33.6
Total	105	100.0	128	100.0
I am willing to pay a premium for a stay in a hotel implementing green practices				
Strogly disagree	0	.0	13	10.2
Disagree	1	1.0	20	15.6
Neutral	5	4.8	36	28.1
Agree	36	34.3	37	28.9
Strongly agree	63	60.0	22	17.2
Total	105	100.0	128	100.0
To support the hotel's efforts to be environmentally friendly. I am willing to pay a premium at the rate of...				
0%	4	3.8	9	7.0
1-5%	38	36.2	52	40.6
6-10%	54	51.4	51	39.8
11-15%	9	8.6	14	10.9
16-20%	0	.0	1	.8
more than 20%	0	.0	1	.8
Total	105	100.0	128	100.0

The responses for second question showed that 33 respondents (25.8%) of the OS sample were unwilling to pay a premium for a green hotel, but responding to the third question, only 9 people (7%) indicated that they would not pay an extra (i.e. chose "0%" option). This may indicate that a part of the respondents changed their mind when they saw the options for amounts of premium and decided it was acceptable to pay an extra at the lowest rate.

The respondents were also asked how the total amount of premium revenue should be used. Only 8.6% in the HG sample answered that it should be used to support the green practices of the hotel, while in the OS sample 26.6% chose this option. Thirty percent of the respondents in the HG sample answered that this money should be used to support protection and improvement of regional natural environment. In the OS sample this option was chosen by 22.7%. In both samples, the majority (more than 50%) indicated that a part of revenue should go to a hotel and a part for regional environmental protection.

One of the aims of the survey was to reveal which eco-friendly practices are preferred by tourists and which they are willing to pay a premium for. The participants were asked to indicate their strength of agreement or disagreement that it is reasonable to pay extra for twelve green practices (see Table 2.3). The mean values distribution differs significantly for the samples, with the OS sample having more dispersed values.

Table 2.3

WTP a premium for green hotel practices

Hotel practice	HG sample		OS sample	
	Mean	Std. dev	Mean	Std. dev
Energy saving light bulbs	3.91	.845	3.13	1.506
Key cards for turning on/off the lights and power in a guest room	3.67	.840	3.36	1.413
Low flow toilets and faucets	3.42	.744	3.16	1.460
Low flow showerheads	3.44	.796	2.95	1.443
Occupancy sensors reducing lighting	3.84	.911	3.62	1.420
Purchase of organic or locally made products	4.84	.395	3.73	1.338
Recycling bins	4.44	.664	3.66	1.492
Refillable shampoo dispensers	3.45	.832	3.05	1.421
Refillable soap dispensers	3.45	.909	3.16	1.441
Sheets change upon request	3.34	.901	3.34	1.460
Towel re-use programs	3.32	.864	2.87	1.405
Use of non-conventional energy sources	4.79	.504	3.80	1.375

It was revealed that the respondents of both samples most endorsed paying an extra for organic or locally made products, use of non-conventional energy sources, recycling bins, energy saving light bulbs, and occupancy sensors. The least reasonable practice to pay an extra for was towel re-use program for both samples, while the HG sample also disapproved sheets change upon request. The findings of some previous researches (Dimara, Manganari, & Skuras, 2015; Verma & Chandra, 2016), show that these two practices are often regarded by tourists as cost-cutting measures for hotels, so they find no sense in paying for it. The

second less approved practice to pay for in the OS sample was low flow showerheads. This may be explained by previous studies (e.g. Millar & Baloglu, 2008; Han & Chan, 2013) which revealed that guest dislike low flow showerheads because they are either unaware about the benefit of this practice or dissatisfied with the bathing experience.

Another finding was that, when asked to choose five most important practices regardless of their WTP, the respondents showed their approval of the same practices they were most willing to pay for. Refillable shampoo dispensers and refillable soap dispensers were the practices perceived as less important by both samples, while hotel guests also rated lowly towel and linen re-use as well as low flow toilets, faucets, and showerheads, i.e. practices reducing water consumption. It can be thus concluded that the hotel guests underestimated the importance of water-saving practices in contrast to energy conservation and recycling.

In the end of this section the respondents were asked to explain their reasons if they are not willing to pay a premium for green hotel practices. The answers were received solely through the online questionnaire, as the hotel guests preferred not to respond. In general, people answered that they did not have spare money or that they would not pay an extra for anything that helps hotels save money. Some typical quotes are as follows:

- “A lot of these practices are cost-effective, so it's weird to pay extra for them. It's fairer to participate in environmental programs” (Female, Russian, aged 45 to 59, Doctoral degree).
- “Implementing these practices, hotels save money, e.g. when don’t wash towels, linen, etc.” (Female, Israeli, aged 45 to 59, Doctoral degree).

A part of the respondents indicated that eco-friendly practices are not anything special and should be implemented in every hotel:

- “The majority of these practices should go without saying and its realization is not so difficult to pay for them” (Male, Russian, aged 18 to 29, Bachelor's degree).
- “I shouldn't pay more for things that cost less for the hotel as well as for something that should be imperative for all hotels in the world. I agree with green practices, I disagree they implicate I should pay more” (Female, Portuguese, aged 18 to 29, Bachelor's degree).

As expected, there were responses associated with convenience of green hotel practices for tourists:

- “These practices don't contribute to comfort of tourists, they're just profitable for hotels” (Female, Russian, aged 45 to 59, Master's degree).
- “I don’t want to pay extra for anything that restricts my comfort” (Male, Russian, aged 18 to 29, Bachelor's degree).
- “In hotels I only care about sanitation standards and the quality of my stay” (Male, Russian, aged 18 to 29, Bachelor's degree).

Some of the respondents addressed other concerns, for example:

- “I doubt that my money will be used for green practices” (Male, Russian, aged 18 to 29, Master's degree).
- “Green practices should be funded by governments because both people, tourism businesses, and other organizations pay taxes, including the environmental tax” (Female, Russian, aged 18 to 29, Master's degree).

4.4 Environmental worldview

The second part of the questionnaire evaluated environmental worldview of participants by means of the NEP scale. First of all, the internal consistency reliability of the scale was assessed using Cronbach’s alpha which amounted to .934 for the HG sample and .746 for the OS sample. According to a common interpretation of the α coefficient, the scale for the HG sample had excellent internal consistency ($\alpha \geq 0.9$) and the scale for the OS sample had good internal consistency ($0.9>\alpha\geq0.8$). However, a high Cronbach's alpha is not an index of unidimensionality and it can mean either that the scale is unidimensional or that it is multidimensional. Dimensionality of the scale was therefore examined through factor analysis. To measure whether the data is suited for Factor Analysis, Kaiser-Meyer-Olkin (KMO) test was performed. The HG sample had a KMO coefficient of .888 and the OS sample had a KMO coefficient of .764, thus being eligible for factor analysis.

4.4.1 Factor analysis of the NEP scale for the Hotel Guests sample

Principal components analysis using varimax factor rotation produced five factors, with an eigenvalue of 1.00 for factor identification. Each of these factors contains at least one of five NEP dimensions, which is presented in Table 2.4.

The first factor contained all five NEP dimensions. The second factor included (1) 'the possibility of an ecological crisis' dimension, (2) 'the rejection of human exemptionalism' dimension, and, due to I11 being adequate for two factors, also the (3) 'limits to growth of human societies'. The third factor included items of two NEP dimensions: (1) 'the fragility of nature's balance' and (2) 'the possibility of an ecological crisis' dimension. The fourth factor included items of (1) 'limits to growth' dimension and (2) 'the fragility of nature's balance' dimension. The fifth factor contained only one item from 'the rejection of human exemptionalism' dimension.

Table 2.4

Factor matrix for the NEP scale (the HG sample)

NEP item	Dimension	Factor				
		1	2	3	4	5
I12	Anti-anthropocentrism	**.832**	-.074	.187	.186	.192
I8	The fragility of nature's balance	**.769**	.320	.222	.159	-.031
I4	The rejection of human exemptionalism	**.747**	.205	.188	.259	.102
I2	Anti-anthropocentrism	**.729**	.253	.297	.279	-.082
I10	The possibility of an ecological crisis	**.710**	.384	.375	.141	.138
I6	Limits to growth of human societies	**.689**	.378	-.067	.324	.172
I7	Anti-anthropocentrism	**.620**	.315	.308	.414	.179
I9	The rejection of human exemptionalism	.191	**.844**	.192	.162	-.108
I11	Limits to growth of human societies	**.547**	**.560**	.214	.030	.195
I5	The possibility of an ecological crisis	.423	**.487**	**.478**	.441	.099
I13	The fragility of nature's balance	.498	.097	**.788**	.058	-.070
I15	The possibility of an ecological crisis	.087	.342	**.762**	.414	.076
I3	The fragility of nature's balance	.321	.088	.176	**.832**	-.060
I1	Limits to growth of human societies	.389	.428	.372	**.527**	.021
I14	The rejection of human exemptionalism	.157	-.015	.006	-.020	**.961**

4.4.2 Factor analysis of the NEP scale for the Online Survey sample

Principal components analysis using varimax factor rotation produced four factors, with an eigenvalue of 1.00 for factor identification. Each of these factors contains at least two of five NEP dimensions, which is presented in Table 2.5.

The first factor contained two NEP dimensions: (1) 'limits to growth' and (2) 'the possibility of an ecological crisis'. The second factor included (1) 'anti-anthropocentrism', (2) 'the fragility of nature's balance', and (3) 'the possibility of an ecological crisis' dimensions. The third factor included items of three NEP dimensions: (1) 'the rejection of human exemptionalism', (2) 'the fragility of nature's balance', and (3) 'limits to growth'.

The fourth factor included items of (1) 'the rejection of human exemptionalism' dimension and (2) 'the fragility of nature's balance' dimension.

Table 2.5

Factor matrix for the NEP scale (the OS sample)

NEP item	Dimension	Factor			
		1	2	3	4
I11	Limits to growth of human societies	**.741**	-.035	-.049	-.005
I15	The possibility of an ecological crisis	**.741**	.297	-.001	.126
I1	Limits to growth of human societies	**.691**	-.009	-.133	.093
I10	The possibility of an ecological crisis	**.611**	.419	.227	.086
I2	Anti-anthropocentrism	.006	**.684**	.007	.049
I3	The fragility of nature's balance	.239	**.620**	-.179	.176
I12	Anti-anthropocentrism	-.057	**.596**	.171	.074
I5	The possibility of an ecological crisis	.457	**.593**	.078	-.006
I7	Anti-anthropocentrism	.329	**.512**	-.438	-.189
I6	Limits to growth of human societies	-.016	-.196	**.712**	.087
I14	The rejection of human exemptionalism	-.185	.119	**.621**	-.102
I4	The rejection of human exemptionalism	.235	.252	**.594**	-.353
I8	The fragility of nature's balance	.239	.388	**.414**	-.135
I9	The rejection of human exemptionalism	.083	.068	-.146	**.794**
I13	The fragility of nature's balance	.430	.378	.104	**.568**

4.4.3 Frequency and mean values distribution of the NEP scale

Since eight odd-numbered NEP items indicate pro-environmental attitude and seven even-numbered items indicate an attitude contrary to environmental concern, in order to render a total environmental score, the scores of the seven even-numbered items were reversed. To change directionality, the following formula was used:

$$\text{reverse score } (x) = \max(x) + 1 - x,$$

where $\max(x)$ is the maximum possible value for x, i.e. 5, since the five-point Likert scale was used. This way, a response of "5" (meaning "strongly agree") would be assigned a score of "1" ("strongly disagree"), a score of "4" ("agree") would be reverse scored as a "2" ("disagree"), and a score of "3" ("neutral") would remain a "3". A score of "1" or "2" would be assigned a score of "5" or "4", respectively.

In the HG sample, the mean scores for NEP items range from 2.086 to 4.676 (see Table 2.6). As expected, pro-environmental responses achieved relatively high scores (ranging from 3.838 to 4.676) and anthropocentric responses achieved lower scores (ranging

from 2.086 to 3.829). Overall NEP score of the sample accounted to 3.95, which, in a sense, can be regarded as a positive result. At least 75% of the participants had NEP score greater than or equal to 3.30, 50% greater than or equal to 4.26, and 25% greater than or equal to 4.60.

Table 2.6

Frequency and mean values distribution for the NEP scale items in the HG sample

NEP items	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Mean[a]	Std. dev.[a]
	N	%	N	%	N	%	N	%	N	%		
I1	0	.00	3	2.86	12	11.43	29	27.62	61	58.10	4.410	.079
I2	0	.00	30	28.57	43	40.95	16	15.24	16	15.24	3.829	.099
I3	0	.00	0	.00	6	5.71	44	41.90	55	52.38	4.467	.059
I4	18	17.14	43	40.95	26	24.76	15	14.29	3	2.86	3.552	.100
I5	0	.00	0	.00	5	4.76	34	32.38	66	62.86	4.581	.057
I6	15	14.29	39	37.14	23	21.90	24	22.86	4	3.81	3.352	.107
I7	6	5.71	15	14.29	4	3.81	45	42.86	35	33.33	3.838	.117
I8	20	19.05	45	42.86	34	32.38	4	3.81	2	1.90	3.733	.086
I9	0	.00	0	.00	2	1.90	37	35.24	66	62.68	4.610	.052
I10	20	19.05	43	40.95	32	30.48	7	6.67	3	2.86	3.667	.093
I11	1	.95	4	3.81	27	25.71	31	29.52	42	40.00	4.038	.093
I12	31	29.52	36	34.29	20	19.05	13	12.38	5	4.76	3.714	.113
I13	0	.00	0	.00	3	2.86	29	27.62	73	69.52	4.667	.052
I14	0	.00	9	8.57	23	21.90	41	39.05	32	30.48	2.086	.091
I15	0	.00	1	.95	6	5.71	19	18.10	79	75.24	4.676	.061

[a]Mean values and standard deviation after adjustment for direction.

In the OS sample, the mean scores for NEP items range from 1.602 to 4.539 (see Table 2.7). As expected, pro-environmental responses achieved relatively high scores (ranging from 3.461 to 4.539) and anthropocentric responses achieved lower scores (ranging from 1.602 to 4.086). Overall NEP score of the sample accounted to 3.59, which is less than a score of the HG sample, representing a quite mediocre concern for environment. At least 75% of the participants had NEP score greater than or equal to 3.06, 50% greater than or equal to 3.66, and 25% greater than or equal to 4.26.

The findings obtained through examining the percentage frequency are further discussed for each of the five NEP dimensions for both samples.

Table 2.7

Frequency and mean values distribution for the NEP scale items in the OS sample

NEP items	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Mean[a]	Std. dev.[a]
	N	%	N	%	N	%	N	%	N	%		
I1	7	5.47	19	14.84	35	27.34	39	30.47	28	21.88	3.484	1.150
I2	21	16.41	29	22.66	49	38.28	23	17.97	6	4.69	3.281	1.086
I3	0	.00	7	5.47	20	15.63	42	32.81	59	46.09	4.195	.897
I4	11	8.59	35	27.34	36	28.13	34	26.56	12	9.38	2.992	1.126
I5	1	.78	2	1.56	19	14.84	46	35.94	60	46.88	4.266	.828
I6	2	1.56	2	1.56	8	6.25	47	36.72	69	53.91	1.602	.807
I7	0	.00	3	2.34	14	10.94	22	17.19	89	69.53	4.539	.783
I8	24	18.75	53	41.41	35	27.34	10	7.81	6	4.69	3.617	1.028
I9	0	.00	10	7.81	18	14.06	53	41.41	47	36.72	4.070	.907
I10	31	24.22	45	35.16	38	29.69	12	9.38	2	1.56	3.711	.989
I11	6	4.69	22	17.19	32	25.00	43	33.59	25	19.53	3.461	1.129
I12	55	42.97	42	32.81	20	15.63	9	7.03	2	1.56	4.086	1.004
I13	3	2.34	11	8.59	23	17.97	37	28.91	54	42.19	4.000	1.080
I14	7	5.47	17	13.28	44	34.38	43	33.59	17	13.28	2.641	1.048
I15	4	3.13	12	9.38	29	22.66	33	25.78	50	39.06	3.883	1.127

[a]Mean values and standard deviation after adjustment for direction.

- **Limits to growth (hotel guests sample).** An examination showed that 85.7% either agree (27.6%) or strongly agree (58.1%) with the statement that the Earth will soon be overpopulated to support its inhabitants (I1). Only 2.9% of respondents opposed this belief, and 11.4% were uncertain. Regarding I11 which addressed limited room and resources of Earth, more than three quarters showed understanding of this issue, one quarter was not sure, and around 5% disagreed. The anthropocentric idea of unlimited resources (I6) was supported only by one quarter of the sample, while more than 50% rejected it, and 21.9% chose ‘neutral’. In this dimension, the HG sample therefore hold unidirectional views, which is depicted in Figure 2.2.

- **Limits to growth (online survey sample).** Only a half of respondents supported the idea that the Earth will soon be overpopulated to support its inhabitants (I1), while 27.3% were unsure, and around 20% disagreed with this statement. Fifty-three percent of the sample agreed to some extent that Earth has limited room and resources (I11), one quarter was unsure, and 21.9% disagreed to some extent. Concerning I6, i.e. a statement about unlimited resources of our planet, the majority (more than 90%) supported it, demonstrating quite pro-DSP worldviews, whereas only 3% opposed it, and 6% were irresolute about it. In this dimension, this sample thus showed an average level of agreement with pro-NEP items and a higher level of agreement with a pro-DSP item, which is depicted in Figure 2.2.

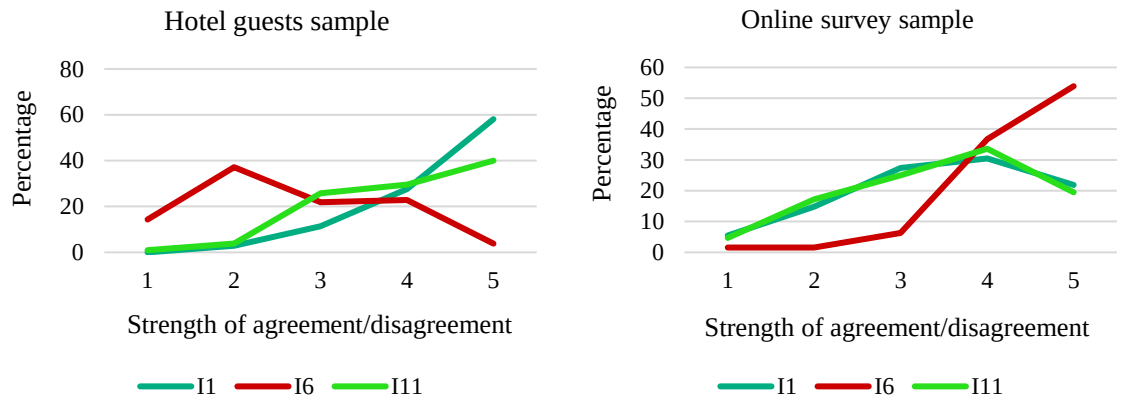

Figure 2.2. Frequency distribution for 'limits to grow' dimension of the NEP. Strength of agreement/disagreement is measured on a five-point scale, where '1' is 'strongly disagree', '2' is 'disagree', '3' is 'neutral', '4' is 'agree', and '5' is 'strongly agree'.

- **Anti-anthropocentrism (hotel guests sample).** Regarding anthropocentric belief that humans have the right to modify the environment to suit their needs (I2), only 30.5% of respondents agreed with the statement, 41% were uncertain, and circa 28.6% disagreed. Another anthropocentric statement about humans' superiority over nature (I12) was supported only by 17%, whereas the majority opposed this view (circa 65%) and the rest held ambivalent views. The third NEP item in this dimension, unlike the previous two, is anti-anthropocentric, stating that plants and animals have the same right to exist as people (I7). Most of the sample (76.2%) were the advocates for this view, only 3.8% were uncertain and 20% disagreed with it. For this dimension, a strong tendency towards pro-NEP worldview is noticeable (see Figure 2.3).

- **Anti-anthropocentrism (online survey sample).** The anthropocentric view put forward by item 2 ("Humans have the right to modify the natural environment to suit their needs") was opposed by 39% of the sample, while a considerable number (38.3%) had

ambivalent views on this issue, and 22.7% agreed with the statement. Regarding item 12, the majority of the sample (75.8%) opposed the idea that people are superior over nature, 15.6% were unsure, and only 8.6% supported it. The seventh, anti-anthropocentric item ("Plants and animals have as much right as humans to exist") was supported by 86.7% of the sample, while 11% were ambivalent, and the rest disagreed. Similar to the hotel guests sample, this sample also demonstrates a tendency towards pro-NEP worldview, which is clear from Figure 2.3.

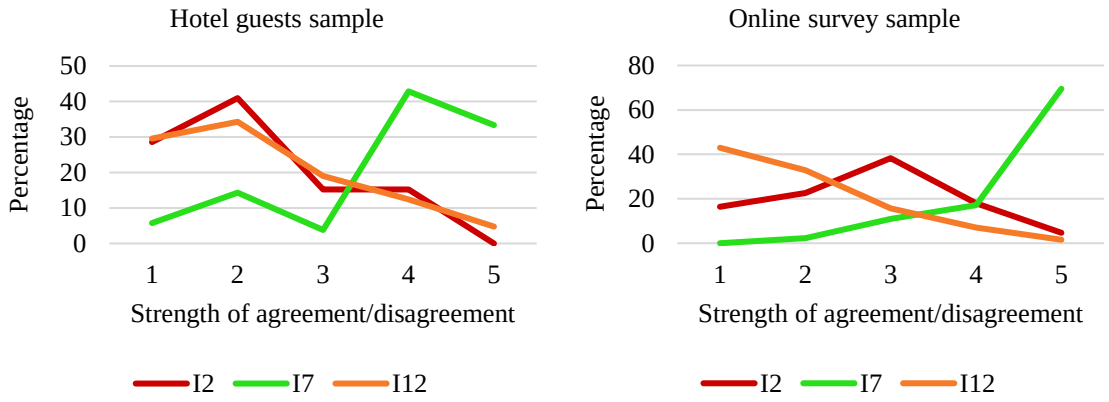

Figure 2.3. Frequency distribution for 'anti-anthropocentrism' dimension of the NEP. Strength of agreement/disagreement is measured on a five-point scale, where '1' is 'strongly disagree', '2' is 'disagree', '3' is 'neutral', '4' is 'agree', and '5' is 'strongly agree'.

- **The fragility of natural balance (hotel guests sample).** The idea that humans' interference with nature endangers its balance is strongly reflected in the NEP, particularly in items 3, 8, and 13. A pro-environmental attitude stated in item 3 ("When humans interfere with nature it often produces disastrous consequences") was strongly supported by 94.3% of the sample, while only 5.7% were unsure, and no one disagreed. On item 13, which is also pro-NEP, the results are similar: 97.1% of the sample supported an idea that the natural balance is very delicate, 2.9% were uncertain, and no one disagreed. Concerning an anthropocentric statement that the balance of nature is not violated by modern industrial nations (I8), only 5.7% of the sample supported it, 32.4% were unsure, and nearly 63% opposed it. These findings, illustrated on Figure 2.4, show clear evidence that the pro-NEP views prevail among the sample for this dimension.

- **The fragility of natural balance (online survey sample).** Almost 80% of the sample supported the idea that human interference with nature often produces disastrous consequences (I3), while 15.6% were unsure, and the rest disagreed with this statement. Concerning item I13 ("The balance of nature is very delicate and easily upset"), the majority

(71%) supported it, demonstrating pro-NEP worldviews, while 18% were irresolute, and circa 11% disagreed. Only 12.5% of the sample agreed to some extent that the natural balance is strong enough to cope with the industrial harmful impacts (I8), whereas 27.3% were unsure, and the majority (circa 60%) either disagreed (41.4%) or strongly disagreed (18.8%). In this dimension, the OS sample thus showed a clear tendency towards pro-NEP worldview, which is depicted in Figure 2.4.

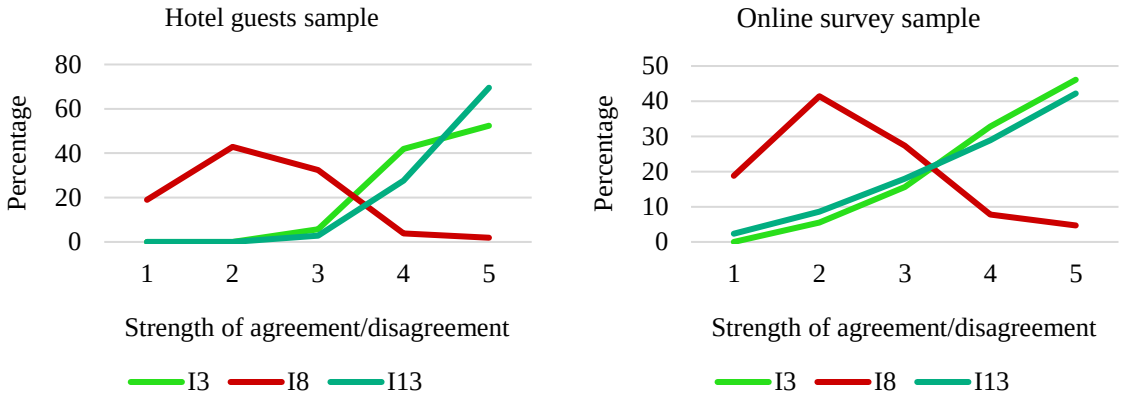

Figure 2.4. Frequency distribution for 'the fragility of natural balance' dimension of the NEP. Strength of agreement/disagreement is measured on a five-point scale, where '1' is 'strongly disagree', '2' is 'disagree', '3' is 'neutral', '4' is 'agree', and '5' is 'strongly agree'.

- **The rejection of human exemptionalism (hotel guests sample)**. Another distinguishing feature of pro-environmental worldview is the rejection of the exemptional nature of humanity, which is expressed in items 4, 9, and 14. Regarding I4 ("Human ingenuity will insure that we do not make the earth unlivable"), 58.1% of respondents opposed the statement, but one quarter were ambivalent, and 17.2% supported it. For I14, which states that people will eventually understand how nature works to be able to control it, the hopeful attitude was found in the answers of circa 70% of respondents, whereas only 8.6% were against human exemptionalism, and 21.9% were unsure. The only pro-NEP item in this dimension is I9 which states that despite the special abilities, humans are still subject to nature. An overwhelming majority of participants (98%) either agreed (35.2%) or strongly agreed (62.7%) with this statement, while 1.9% were unsure and no one disagreed. As is clear from Figure 2.5, the sample did not demonstrate a strong tendency either to NEP or DSP in this dimension.

- **The rejection of human exemptionalism (online survey sample)**. On item 4 ("Human ingenuity will insure that we do not make the earth unlivable") more than one third of the sample showed mild (26.6%) to strong (9.4%) exemptionalism views, whereas 28.2%

were ambivalent, and 36% supported an anti-exemptionalism worldview. On item 14 ("Humans will eventually learn enough about how nature works to be able to control it"), 46.9% of the sample supported and 18.8% opposed the statement; however, the most frequent option was "neutral" (34.4%). On item 9, stating that despite the special abilities, humans are still subject to nature, the majority (78.1%) either agreed (41.4%) or strongly agreed (36.7%), while 14.1% were unsure and only 7.8% disagreed. The sample thus showed quite inconsistent views in this dimension, with a great degree of uncertainty for anti-NEP items, which is depicted in Figure 2.5.

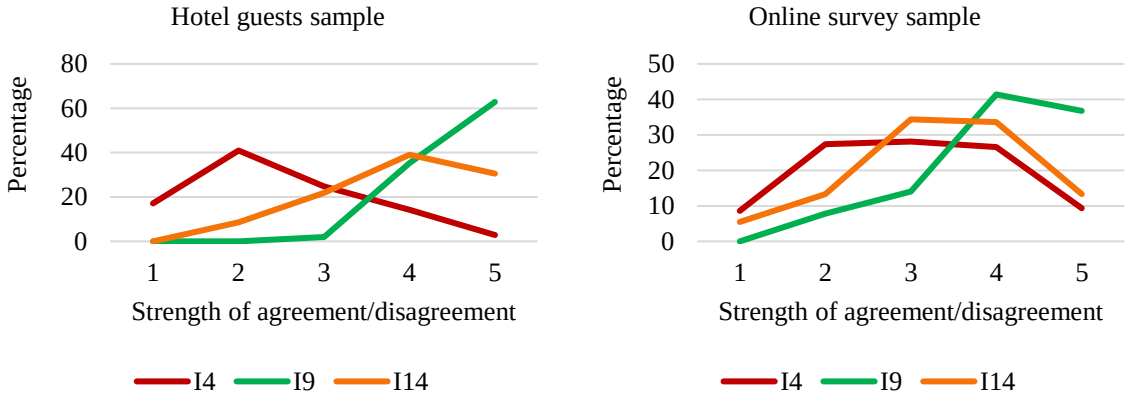

Figure 2.5. Frequency distribution for 'the rejection of human exemptionalism' dimension of the NEP. Strength of agreement/disagreement is measured on a five-point scale, where '1' is 'strongly disagree', '2' is 'disagree', '3' is 'neutral', '4' is 'agree', and '5' is 'strongly agree'.

- **The possibility of an ecological crisis (hotel guests sample).** Stressing human dependence on nature as well as their harmful impact on the environment, the NEP includes three statements (I5, I10, and I15) revealing respondents' attitudes towards the possible eco-crisis. The sample showed rather pro-NEP worldviews for this dimension, since most of the respondents generally agreed with pro-environmental (I5, I15) and disagreed with anthropocentric statements (I10), which is illustrated in Figure 2.6. Regarding item 5 ("Humans are severely abusing the environment"), 62.9% of the sample strongly agreed and 32.4% agreed with its statement. Less than 5% were unsure, and no one disagreed with this idea. Similar results were obtained in regard to item 15 ("If things continue on their present course, we will soon experience a major ecological catastrophe"), with three quarters of respondents strongly supporting its statement. Circa 18% agreed, less than 6% were unsure, and only one person (0.95%) opposed this idea. On item 10, questioning the possibility of eco-crisis, the majority (60%) either disagreed (19%) or strongly disagreed (41%) with this pro-DSP idea, while 30.5% were ambivalent, and less than 10% supported it.

- **The possibility of an ecological crisis (online survey sample).** On item 5, 46.9% strongly agreed and 35.9% agreed that people cause severe damage to the environment. Circa 15% were unsure, while only 2.4% disagreed. On item 15, stating that, if we do not change anything, a major ecological catastrophe will occur soon, similar results were received: 39% strongly agreed, 25.8% agreed, 22.7% hold irresolute views, and the rest (around 12%) disagreed. The tenth, pro-DSP item, questioning that eco-crisis can actually happen, was opposed by the majority of the sample (59.4%) and supported only by 10.9%, whereas 29.7% were not sure. As is clear from Figure 2.6, the OS sample showed a propensity for pro-NEP worldviews in this dimension.

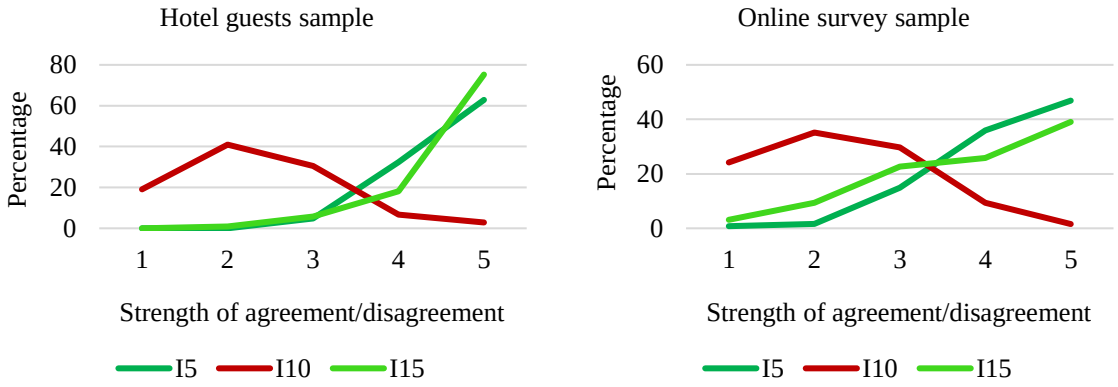

Figure 2.6. Frequency distribution for 'eco-crisis possibility' dimension of the NEP. Strength of agreement/disagreement is measured on a five-point scale, where '1' is 'strongly disagree', '2' is 'disagree', '3' is 'neutral', '4' is 'agree', and '5' is 'strongly agree'.

An analysis of each NEP dimension allows to conclude that both samples showed a great environmental concern for such dimensions as 'anti-anthropocentrism', 'the fragility of natural balance', and 'eco-crisis possibility'. However, the answers for 'limits to grow' and 'anti-exemptionalism' dimensions revealed that the respondents held some views which are far from pro-environmental. 'Limits to grow' was a dimension where online survey sample demonstrated a high level of agreement with a pro-DSP sixth item, ("The earth has plenty of natural resources if we just learn how to develop them"), while 'anti-exemptionalism' dimension caused controversy in both samples. For instance, I14 ("Humans will eventually learn enough about how nature works to be able to control it") was very well-accepted in favor of the dominant social paradigm by both samples, while the OS sample also showed some level of agreement with I4 ("Human ingenuity will ensure that we do not make the earth unlivable"). This may be explained by non-negative context of these statements, unlike the other anthropocentric statements. Supporting both I4, I6, and I14 may also represent some positive belief in human inventiveness that will help us to use the resources sustainably.

4.5 Group differences tests and association tests

After descriptive data analysis and factor analysis of the NEP scale, the study analysed the effects of several factors on overall WTP and WTP for each individual hotel practice. Statistically significantly difference between the variables was found solely in hotel guests sample (see Table 2.8) which is described below.

First, a Mann-Whitney U test was conducted to determine if there were differences in WTP score between males and females. However, it was found that WTP score was not statistically significantly different between the two genders, $U = 1333$, $p = .771$. Hypothesis 3a was therefore supported.

Table 2.8

Summary of group differences tests and association tests

	Hotel guests sample		Online survey sample	
		Mann-Whitney U test		
	U	*p*	*U*	*p*
Gender on WTP	1333.0	.771	1456.5	.174
		Kruskal-Wallis H test		
	H	*p*	*H*	*p*
Age on WTP	34.310	< .001	2.142	.543
Education on WTP	17.930	< .001	2.131	.712
Status on WTP	13.665	.008	1.788	.775
		Spearman's rank-order correlation		
	r_s	*p*	r_s	*p*
NEP with WTP	.653	< .001	.149	.093
NEP with WTS	.651	< .001	.165	.062

Then, a Kruskal-Wallis H test was conducted to determine if there were differences in WTP scores between four age groups: the "18-29" ($n = 22$), "30-45" ($n = 44$), "46-59" ($n = 27$), and "60+" ($n = 12$). Distributions of WTP scores were not similar for all groups, as assessed by visual inspection of a boxplot. The mean ranks of WTP scores were statistically significantly different between groups, $\chi^2(3) = 34.310$, $p < .001$. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted *p*-values are presented. Supporting Hypothesis 4b, this post hoc analysis revealed statistically significant differences in WTP scores between the following age groups:

- "18-29" (mean rank = 69.50) and "60+" (mean rank = 30.04) ($p < .001$);
- "30-45" (mean rank = 61.63) and "60+" ($p = .001$);
- "18-29" and "46-59" (mean rank = 35.70) ($p < .001$);
- "30-45" and "46-59" ($p < .001$);

but not between any other group combination.

A Kruskal-Wallis H test was also conducted to determine if there were differences in WTP scores between five groups of participants with different levels of education: the "middle school or less" ($n = 3$), "high school" ($n = 29$), "Bachelor's degree" ($n = 64$), and "Master's degree" ($n = 9$) educational level groups. Distributions of WTP scores were not similar for all groups, as assessed by visual inspection of a boxplot. The mean ranks of WTP scores were found to be statistically significantly different between groups, $\chi^2(3) = 17.930$, $p < .001$. The post hoc analysis (Dunn's multiple comparisons with a Bonferroni correction) detected statistically significant differences in WTP scores between "middle school or less" (mean rank = 17.67) and "Bachelor's degree" (mean rank = 59.30) ($p = .044$), as well as "high school" (mean rank = 39.64) and "Bachelor's degree" ($p = .005$) educational levels, but not between any other group combination. This result supports Hypothesis 5b.

The same procedure was performed to reveal if there were differences in WTP scores between five status groups: the "students" ($n = 10$), "employed" ($n = 63$), "self-employed" ($n = 16$), "unemployed" ($n = 4$), and "retired" ($n = 12$). Distributions of WTP scores were not similar for all groups, as assessed by visual inspection of a boxplot. The mean ranks of WTP scores were also found to be statistically significantly different between groups, $\chi^2(4) = 13.665$, $p = .008$. The post hoc analysis revealed statistically significant differences in WTP scores between "employed" (mean rank = 54.03) and "retired" (mean rank = 29.79) ($p = .034$) status groups and "students" (mean rank = 69.05) and "retired" ($p = .005$) status groups, but not between any other group combination. This result supports Hypothesis 6b.

To assess the relationship between the willingness to stay (WTS) in a green hotel and NEP score as well as the overall WTP and NEP score, a Spearman's rank-order correlation was run. Preliminary analysis showed the relationship to be monotonic in both cases, as assessed by visual inspection of scatterplots. A strong positive correlation was revealed between the WTS and NEP score, $r_s = .651$, $p < .001$, and between the overall WTP and NEP score, $r_s = .653$, $p < .001$, which supports Hypotheses 1b and 2b.

A Spearman's rank-order correlation was also run to assess the relationship between the WTP for each individual hotel practice and NEP score (see Table 2.9). Preliminary analysis showed the relationship to be monotonic in each of 12 cases, as assessed by visual inspection of scatterplots.

Table 2.9

Spearman's rank-order correlation for NEP with WTP for individual hotel practices

	r_s	p
NEP with WTP for energy saving light bulbs	.199*	.042
NEP with WTP for key cards	.126	.200
NEP with WTP for low flow toilets and faucets	.075	.450
NEP with WTP for low flow showerheads	.107	.275
NEP with WTP for occupancy sensors	.093	.347
NEP with WTP for purchase of organic or locally made products	.351**	.000
NEP with WTP for recycling bins	.305**	.002
NEP with WTP for refillable shampoo dispensers	.042	.670
NEP with WTP for refillable soap dispensers	.085	.390
NEP with WTP for sheets change upon request	.079	.426
NEP with WTP for towel re-use programs	.098	.320
NEP with WTP for use of non-conventional energy sources	.224*	.022

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

As is shown in Table 2.10, there were weak positive correlations only between the following hotel practices and NEP:

- WTP for energy saving light bulbs and NEP score, $r_s = .199$, $p = .042$;
- WTP for purchase of organic/locally made products and NEP score, $r_s = .351$, $p < .001$;
- WTP for recycling bins and NEP score, $r_s = .305$, $p = .002$;
- WTP for non-conventional energy sources and NEP score, $r_s = .224$, $p = .022$;

while the other practices and NEP showed very weak correlations.

Although correlations found were weak, Hypothesis 7b is still supported.

4.6 Discussion

The main question of this study was whether tourists' WTP a premium for green hotel practices is associated with their environmental worldviews. To test if there is a relationship, a Spearman's rank-order correlation was run. It revealed a strong positive

correlation between WTP and environmental concerns assessed by means of the NEP scale. This finding supported the theories underlying the development of this study.

First of all, the means-end theory (Gutman, 1982) was supported, as we found that hotel guests with a higher level of environmental concern are willing to pay an extra for a stay at a green hotel. For such guests, green practices may play the role of means to an end, in that supporting eco-friendly hotels means satisfying some personal values for them. Secondly, since green hotels choices refer to pro-environmental behavior (particularly green consumption), our findings also support the social identity approach (Tajfel & Turner, 1986; Turner, et al., 1994). That is, hotels guests which are concerned about the environment identify themselves with green consumers and manifest their environmental activism through choosing green hotels over conventional ones. Finally, our results support the value-belief-norm theory (Stern et al., 1999) which explains tourists' WTP for green hotels through their pro-environmental personal norms, revealed in this study using the NEP scale.

The study's main finding supports two of proposed hypotheses, stating that there is a relationship between WTP and environmental concern (H1b) and WTS and environmental concern (H2b). It is consistent with findings of Kang et al. (2012), who also found a positive relationship between the level of environmental concern and WTP a premium for green hotels, and of Han et al., (2011), who revealed that pro-environmental attitudes best explained tourists' intentions to stay at a green hotel.

Regarding the amount of premium that respondents were willing to pay for green hotels, the survey results have shown that the majority of both samples were ready to support the hotel's efforts to be sustainable by paying at least a 1-10% more of the room rate, but some indicated a higher percentage. This result corroborates with findings of other studies on this matter, for instance by Tartaglia & Grosbois (2009), Susskind & Verma (2011), Kang et al. (2012), and Han & Chan (2013) who also revealed that their subjects would like to financially support eco-friendly practices implemented by hotels. At the same time, this study's finding is contradictory to the results of Millar & Mayer (2013), who found that tourists were willing to pay traditional hotel prices for green hotels. Besides, our finding is conflicting with the one from the study by Manaktola & Jauhari (2007) who concluded that the consumers using hotel services preferred to choose lodgings incorporating green practices but were not willing to pay a premium for them.

Different findings on WTP may exist due to different study locations. In the current study, the samples were international (mostly European), while Manaktola & Jauhari (2007) conducted a survey in India and Millar & Mayer (2013) used respondents from the USA. The levels of environmental concern in these cases may vary. Besides, the foregoing studies were conducted with several years of difference, and in the last decade the concern for "greenness" in the hospitality industry has grown noticeably. Nowadays, both hotels and guests demonstrate a higher interest in being eco-friendly, which could also have an impact on the difference in results.

The questionnaire also sought to find out the green hotel practices which tourists are most willing to pay for. Out of 12 hotel practices obtained from previous research in this field, respondents were asked to rate their WTP for each of them on a 5-point Likert scale. It was discovered that both samples most endorsed paying a premium for organic or locally made products, use of non-conventional energy sources, recycling bins, energy saving light bulbs, and occupancy sensors, which supports Hypothesis 7b, stating there is a relationship between environmental concern and WTP for any individual green hotel practices. Millar & Baloglu (2008) also revealed that guests would prefer recycling bins and energy saving lighting in the guest room, and Susskind & Verma (2011) found out that energy-saving manipulations were received favorably.

The least favorable practices to pay a premium for in this study were towel and linen re-use programs as well as low flow showerheads. This is also in line with results of some previous studies (Dimara, Manganari, & Skuras, 2015; Verma & Chandra, 2016) which claimed that unwillingness to pay for towel and linen re-use programs is associated with their cost-cutting nature. Concerning low flow showerheads, dislike of them was recognized and explained by Millar & Baloglu (2008) as well as Han & Chan (2013) who came to conclusion that guests are usually unaware about the advantage of this practice or displeased with bathing. The research results thus support the findings of previous studies on preferred green hotel practices and augment them, since the current research was focused on guests' WTP for hotel practices and not just preference for any of them.

Another aim of this study was to evaluate environmental worldviews of respondents. Following a body of previous research, it was decided to employ the most widely used measure of environmental attitude – the New Ecological Paradigm scale. As one of supporting research questions was whether it is a reliable instrument to use, the internal

consistency reliability of the scale as well as its dimensionality were assessed through Cronbach's alpha and factor analysis, respectively.

The NEP scale was proven to be a reliable instrument, with Cronbach's alpha equal to 0.934 for the HG sample and 0.746 for the OS sample. Comparing these values with the ones from the previous studies, they are similar, which is clear from the Table 2.10. It can be seen that coefficients alpha in seven analyzed studies were large enough to justify the use of the NEP scale as well, but in the current study the value was even higher, close to 1 for the HG sample, which would mean a completely reliable test.

Table 2.10

Reliability of the NEP scale in previous studies

Study	Country	Sample	Reliability (Cronbach's alpha)
Noe and Snow (1990)	USA	National park visitors	.61 – .71*
Uysal, Jurowski, Noe, & McDonald (1994)	Virgin Islands (USA)	Tourists	.454; .699; .706**
Lück (2000)	New Zealand	Tourists	.776
Erdogan (2009)	Turkey	University students	.580
Ogunbode (2013)	Nigeria	University students	.610
Denis & Pereira (2014)	Romania, Portugal	Tourists	.470; .526***
Santos, Vasconcelos, Lopes, & Mouga (2014)	Portugal	Tourists	.748

*. The interval is for three park studies.
**. Calculated for each factor.
***. Calculated for two samples.

In regard to dimensionality, factor analysis was conducted for two samples in the current study. It produced five factors for the HG sample and four factors for the OS sample, thus proving the scale to be multidimensional. This result supports factor analysis results of the previous research (Table 2.11), all of which showed from two to five dimensions of the NEP scale.

Table 2.11

Dimensionality of the NEP scale in previous studies

Study	Country	Sample	Factors
Noe and Snow (1990)	USA	National park visitors	2
Uysal, et al. (1994)	Virgin Islands (USA)	Tourists	3
Lück (2000)	New Zealand	Tourists	2
Erdogan (2009)	Turkey	University students	4
Ogunbode (2013)	Nigeria	University students	5
Denis & Pereira (2014)	Romania, Portugal	General public	5; 5*

*. Calculated for two samples.

After conducting factor analysis, levels of environmental concern of respondents were measured by means of the NEP scale. Overall NEP score of the HG sample accounted to 3.95, while for the OS sample it was 3.59. A higher score for the Hotel Guests sample was anticipated, as they stayed at a hotel/hostel incorporating eco-friendly practices in its daily operation, and while it may be arguable that accommodation was chosen due to its "greenness", we still assume that it was.

A similar difference between samples was registered in the original study by Dunlap and Van Liere (1978), who also used two separate samples, a General Public Sample (GPS) and an Environmental Organizations Sample (EOS). The authors of the NEP predicted that members of environmental organizations are more likely to hold pro-environmental worldviews than members of the general public, and the results confirmed that they were right. The overall mean of the EOS in their study accounted to 3.7, while the overall mean of the GPS was only 3.0 (Albrecht et al., 1982). Predictive validity, therefore, was gained, meaning that scale works in the way it was theoretically developed. We can thus conclude that the results of the current study support the original study's findings and that the scale proved to be a valid instrument.

In comparison with recent studies which also employed the NEP scale, the obtained scores in the current study can be considered moderate. For instance, Denis & Pereira (2014) who assessed the environmental worldviews of inhabitants of Arad (Romania) and Faro (Portugal) got the overall means of 3.39 and 4.41, respectively. Benckendorff, Moscardo & Murphy (2012), who studied a sample of undergraduate business and tourism students in Australia, obtained a mean score of 3.73. Unfortunately, only a few studies on tourism field employed the NEP scale as a research instrument and no one applied it to tourists staying at hotels, so it was difficult to compare the results objectively. For example, Santos et al. (2014), researching tourists' environmental attitudes in Berlengas Biosphere Reserve (Portugal), got the overall score of 3.80. However, they asked tourists to take part in a survey before their boat trip to the reserve and not during their stay on the island. Kang et al. (2012), in a study of consumers' WTP for green hotels in the USA, selected subjects from people who requested tourism information for DMOs and sent them invitations via email to participate in online survey. The mean NEP score they obtained was 3.38. However, although the researchers called their sample "hotel guests", the respondents were not staying in hotels when answering the questionnaire. Similarly, a study by Millar & Mayer (2013) on

a profile of tourists staying in eco-friendly hotels had a sample of people who had spent at least one night in a hotel in the previous 12 months. The overall NEP score of their sample was 3.42. These results are thus comparable with the result for online survey sample in the current study (3.59), while the hotel guests sample showed a higher level of environmental concern (3.95).

The study also had several null and alternative hypotheses associated with a potential relationship between tourists' WTP for green hotel practices and demographical factors. Only one of the null hypotheses was supported, proposing that there is no relationship between a person's gender and WTP a premium for a stay at a green hotel (H3a). Besides, it was hypothesized that there is a relationship between WTP and person's age (H4b), educational level (H5b), and current status (H6b). All these alternative hypotheses were supported. Thus, according to our findings, environmentally conscious hotel guests that are willing to financially support green hotel initiatives are mostly well-educated, employed, and aged under 45, while the gender is not a determinant.

4.7 Summary

Throughout this chapter, the findings of the current study were presented, starting from willingness to pay, to environmental worldviews, and, finally, to relationship between these two constructs. Besides, the results of statistical hypotheses testing were introduced. The main finding of this study, a positive relationship between tourists' WTP a premium for green hotel practices and their levels of environmental concern, supports the means-end theory, value-belief-norm theory, and social identity approach. It also supports and augments the findings of previous studies on this matter, which was discussed in the last section of the chapter. Other findings of this dissertation include specific green hotel practices which customers found reasonable to pay extra for, the amount of premium they were willing to pay for green hotels in general, and the demographic profile of such customers.

The next chapter shows how this dissertation contributes to a body of academic literature in tourism and hospitality field by summarizing the main findings. Furthermore, as this study made not only a significant theoretical contribution but also practical, its managerial implications are depicted. Finally, the limitations and future research directions are pointed out.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

This dissertation investigated a possible relationship between tourists' environmental concerns and their willingness to pay for green hotels. To reveal this relationship, a questionnaire-based study was conducted, designed to explore such constructs as tourists' willingness to stay at green hotels, willingness to pay a premium for such hotels in general as well as for specific sustainable hotel practices, the importance of sustainable hotel practices (regardless of WTP), and tourists' environmental concerns evaluated by means of the New Ecological Paradigm scale.

The main finding of this study that provides with an answer to the study question is a strong and positive relationship between environmental worldviews and WTP an extra for eco-friendly hotels. This finding supports the means-end theory (Gutman, 1982), value-belief-norm theory (Stern et al., 1999), and social identity approach (Tajfel & Turner, 1986; Turner, et al., 1994). That is, hotel guests with higher levels of concern for the environment need their hotel experience to be more than just a stay, as, for them, taking part in green initiatives and supporting green hotels financially mean satisfying some personal values and influence their self-esteem. Moreover, such guests tend to identify themselves with green consumers, so choosing a green hotel implies a display of their environmental activism. They also hold some pro-environmental personal norms which have an impact on their consumption decisions when choosing a hotel. This is particularly reflected in the questionnaire results, where the majority of the Hotel Guests and more than a half of Online Survey respondents stated they would choose a hotel based on its green practices, if they have a choice.

Concerning WTP, the overwhelming majority of the HG sample and almost a half of the OS sample were willing to pay a premium for eco-friendly hotels. Both samples, for the most part, were willing to pay either 1 to 5% extra or 6 to 10% extra, which, in a sense, can be considered a good price premium encouraging hotels to implement sustainable practices more vigorously.

Furthermore, this study is one of the few that has examined tourists' WTP in regard to specific sustainable hotel practices. According to the survey results, tourists find it

reasonable to pay a premium (in descending order) for organic or locally made products, use of non-conventional energy sources, recycling bins, energy saving light bulbs, and occupancy sensors, while towel and linen re-use as well as low flow showerheads received disapproval. Regardless of WTP, tourists indicated the same practices as the most crucial for a green hotel, while refillable shampoo and soap dispensers were perceived least important in terms of greenness.

The research also delved into environmental worldviews of tourists which were assessed by means of the New Ecological Paradigm scale. Overall NEP score of the HG sample accounted to 3.95, while for the OS sample it was 3.59. The difference in scores was anticipated, as Hotel Guests took part in the survey during their stay at hotels/hostel incorporating green practices and could be inclined towards it. The NEP scores were further used to assess its relationship with WTP a premium for green hotels in general, and a strong positive correlation was revealed. When assessing the relationship between NEP and WTP for each specific practice, weak positive correlations were found between respondents' environmental worldviews and, in descending order, purchase of organic/locally made products, recycling bins, non-conventional energy sources, and energy saving light bulbs. These practices were thus perceived as the most valuable for tourists with higher levels of environmental concern.

Finally, the study found that a customer concerned for the environment and willing to pay a premium for a stay at eco-friendly hotel is usually aged under 45, well-educated, and employed, while no difference between genders was revealed.

Altogether, this dissertation's findings open channels for future research and managerial practice to address the issues connected with tourists' WTP for green initiatives of the hotel industry.

5.2 Managerial implications

In terms of implication of this dissertation to practitioners, the findings will be helpful for hoteliers and hotel developers that are willing to make their businesses more environmentally friendly but are unsure whether the customers are concerned about "greenness", whether the efforts will pay off, and what practices should be included in a hotel's day-to-day operation.

The findings on preferred green practices will give hoteliers an idea of what eco-friendly attributes guests find important to have in their rooms or in public areas of a hotel. Moreover, as the current study also explored tourists' WTP for each specific initiative, hotel managers can make use of this information and alter their marketing and pricing strategies to create a competitive advantage. For instance, employment of non-conventional energy sources was very well accepted by the sample not only in terms of importance but also WTP a premium for, which means that, for example, the presence of solar installations justifies paying more for a stay at a hotel from guests' perspective.

Regarding WTP, although the results of group differences tests have shown that there is no difference in WTP between males and females, we were able to make a conclusion that a customer who is willing to support green hotel practices is usually well-educated, employed, and aged under 45. This finding could be useful for a better insight into a conscious guest profile.

Besides, hoteliers can benefit themselves from taking into consideration the level of tourists' environmental concerns, which has been found closely related with WTP an extra for sustainable practices. Hotels are thus encouraged to include guests' concerns for the environment to target market analysis to adjust investments in green hotel practices.

Based on the findings of the present study, the level of environmental concerns is also connected with tourists' choices of hotels, as more than a half of respondents who took part in online survey and 87% of hotel guests sample stated that hotels' efforts to be more sustainable are important for them when they choose accommodation. Hotel managers should also notice that these conscious consumers usually want their hotel experience to be more than just a stay and to contribute to their self-esteem and satisfy their beliefs and values. That is, green initiatives can take the form of additional attributes which meet the emotional needs of certain guests.

5.3 Limitations and suggestions for further research

In interpreting the results of the present study, several limitations should be considered. The first one is related to the sample selection and the number of participants in the study. Due to the total number of respondents in two samples being rather small (233 people) and using convenient sampling, the results might have low generalizability and cannot be applied to the general traveling population. For the OS sample in particular, the results may have low generalizability to males, since the majority (70.3%) of the sample

were female. Besides, 38.2% of this sample held postgraduate degrees and 58.6% were Russian. Regarding the HG sample, it may be biased towards eco-friendly activities, as the respondents were staying at lodgings incorporating green practices. They may thus be aware about environmentally practices in the hospitality industry and choose hotels accordingly, which in turn may influence their WTP a premium. Considering this, for future research the sample should be expanded by size and cover more locations and cultures to improve generalizability of findings.

Another substantial possible limitation for this study is the lack of control of response bias. In self-report studies, respondents' propensity to achieve social desirability may have an impact on the results, which is often referred to as social desirability bias. Despite the fact that the survey was anonymous, the respondents may have answered the way they thought that they should, as opposed to answering with their true beliefs. They may have claimed holding pro-NEP views (i.e. perceiving the severity of environmental issues, the importance of being eco-friendly) when in reality their views could be different. It is therefore recommended to make use of other research instruments in future studies.

Further research could also expand a list of eco-friendly hotel practices, as new initiatives are constantly evolving. Besides, it may be meaningful to explore tourists' WTP for green hotels depending on tourism destination type (coastal, urban, rural, etc.) as well as hotel type by levels of service (budget, mid-range, luxury) or by target markets (business, resort, bed and breakfast, etc.).

In addition, although the NEP scale employed in this study has proven to be a valid and reliable instrument to assess environmental worldviews, future studies should not confine itself to it.

REFERENCES

Agenda 21: Programme of Action for Sustainable Development, Rio dc Janeiro, 14 June 1992, U.N. GAOR, 46th Sess., Agenda Item 21, UN Doc. A/Conf.151/26 (1992).

Albrecht, D., Bultena, G., Hoiberg, E., & Nowak, P. (1982). Measuring environmental concern: The New Environmental Paradigm scale. *The Journal of Environmental Education, 13*(3), 39-43.

Alexander, S., & Kennedy, C. (2002). Green hotels: Opportunities and resources for success. *Zero Waste Alliance, 5*(7), 1-9.

Anderson, M. W. (2012). New Ecological Paradigm (NEP) Scale. In I. Spellerberg, D. Fogel, S. Fredericks, and L. Harrington (Eds.), *The Encyclopedia of Sustainability: Vol. 6. Measurements, Indicators, and Research Methods for Sustainability,* 260-262.

Association of Southeast Asian Nations (ASEAN) (2016). *ASEAN Green Hotel Standard.* Indonesia: The ASEAN Secretariat.

Baker, M. A., Davis, E. A., & Weaver, P. A. (2014). Eco-friendly attitudes, barriers to participation, and differences in behavior at green hotels. *Cornell Hospitality Quarterly, 55*(1), 89-99.

Balderjahn, I. (1988). Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns. *Journal of business Research, 17*(1), 51-56.

Benckendorff, P., Moscardo, G., & Murphy, L. (2012). Environmental attitudes of Generation Y students: Foundations for sustainability education in tourism. *Journal of Teaching in Travel & Tourism, 12*(1), 44-69.

Bohdanowicz, P. (2005). European hoteliers' environmental attitudes greening the business. *Cornell Hotel and Restaurant Administration Quarterly, 46*(2), 188-204.

Brundtland, G. H. (1987). *Report of the World Commission on environment and development: Our common future*. United Nations.

Carson, R. (1962). *Silent Spring*. Greenwich, Connecticut.

Chaineux, M., & Charlier, R. (1999). Strategies in environmental education. *International Journal of Environmental Studies, 56*(6), 889-905.

Chan, R.Y. (2001). Determinants of Chinese consumers' green purchase behavior. *Psychology & Marketing, 18*(4), 389-413.

Chia-Jung, C., & Pei-Chun, C. (2014). Preferences and willingness to pay for green hotel attributes in tourist choice behavior: The case of Taiwan. *Journal of Travel & Tourism Marketing, 31*(8), 937-957.

Cohen, M. (2005). Sustainable consumption in national context: an introduction to the symposium. *Sustainability: Science, Practice, & Policy, 1*(1), 22-28.

Cox, R. (2012). *Environmental communication and the public sphere* (3rd ed.). USA: SAGE Publications.

Denis, H. D., & Pereira, L. N. (2014). Measuring the level of endorsement of the New Environmental Paradigm: a transnational study. *Dos Algarves: A Multidisciplinary e-Journal, 23*, 5-26.

Dimara, E., Manganari, E., & Skuras, D. (2015). Consumers' willingness to pay premium for green hotels: Fact or Fad?. In *Proceedings International Marketing Trends Conference 2015*.

Dono, J., Webb, J., and Richardson, B. (2010). The relationship between environmental activism, pro-environmental behaviour and social identity. *Journal of Environmental Psychology, 30*, 178-186.

Dunlap, R. (2008). The New Environmental Paradigm scale: From marginality to worldwide use. *The Journal of Environmental Education, 40*(1), 3-18.

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues, 56*(3), 425-442.

Dunlap, R., & Van Liere, K. (1978). The "New Environmental Paradigm". *The Journal of Environmental Education, 9*(4), 10-19.

Dunn, O. J. (1964). Multiple comparisons using rank sums. *Technometrics, 6*(3), 241-252.

Erdogan, N. (2009). Testing the new ecological paradigm scale: Turkish case. *African Journal of Agricultural Research, 4*(10), 1023-1031.

Examining Rio 20's Outcome | Council on Foreign Relations. (n.d.). Retrieved September 26, 2017, from https://www.cfr.org/expert-roundup/examining-rio20s-outcome

Fielding, K. S., McDonald, R., and Louis, W. R. (2008a). Theory of planned behaviour, identity and intentions to engage in environmental activism. *Journal of Environmental Psychology*, 28, 318-326.

Frank, R. H. (1988). Passions within reason: The strategic role of the emotions. New York, NY, US: W W Norton & Co.

Gifford, R., & Sussman, R. (2012). Environmental attitudes. In S. Clayton, *The Oxford Handbook of Environmental and Conservation Psychology* (pp. 65-71). USA: Oxford University Press.

Gupta, M. C. (1995). Environmental management and its impact on the operations function. *International Journal of Operations & Production Management*, *15*(8), 34-51.

Gupta, M., & Sharma, K. (1996). Environmental operations management: an opportunity for improvement. *Production and Inventory Management Journal*, *37*(3), 40.

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing,* 46(2), 60-72.

Han, H., Hsu, L. T. J., & Lee, J. S. (2009). Empirical investigation of the roles of attitudes towards green behaviors, overall image, gender, and age in hotel customers' ecofriendly decision-making process. *International Journal of Hospitality Management, 28*(4), 519-528.

Han, H., Hsu, L. T. J., Lee, J. S., & Sheu, C. (2011). Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions. *International Journal of Hospitality Management*, *30*(2), 345-355.

Han, X., & Chan, K. (2013). Perception of green hotels among tourists in Hong Kong: An exploratory study. *Services Marketing Quarterly*, *34*(4), 339-352.

Hotel Energy Solutions (2011). Analysis on energy use by European hotels: Online survey and desk research, Hotel Energy Solutions project publications.

Hu, H. H., Parsa, H. G., & Self, J. (2010). The dynamics of green restaurant patronage. *Cornell Hospitality Quarterly*, *51*(3), 344-362.

ICF Consulting Limited (2015). *Study on Energy Efficiency and Energy Saving Potential in Industry from possible Policy Mechanisms.*

Iwanowski, K., & Rushmore, C. (1994). Introducing the eco-friendly hotel. *Cornell Hotel and Restaurant Administrant Quarterly, 35*(1), 34-38.

Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic Management Review, 3*(1-2), 128-143.

Kang, K. H., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives of the hotel industry. *International Journal of Hospitality Management*, *31*(2), 564-572.

Kasavana, M. L. (2008). Green Hospitality. *Hospitality Upgrade Magazine, 2,* 140-148.

Kasim, A. (2004). Socio-environmentally responsible hotel business: Do tourists to Penang Island, Malaysia care? *Journal of Hospitality and Leisure Marketing, 11*(4), 5-28.

Kasim, A. (2007). Towards a wider adoption of environmental responsibility in the hotel sector. *International Journal of Hospitality & Tourism Administration, 8*(2), 25-49.

Kim, Y., & Choi, S. M. (2005). Antecedents of green purchase behavior: An examination of collectivism, environmental concern, and PCE. *Advances in Consumer Research Volume, 32,* 592-599.

Kim, Y., & Han, H. (2010). Intention to pay conventional-hotel prices at a green hotel - a modification of the theory of planned behavior. *Journal of Sustainable Tourism, 18*(8), 997-1014.

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.

Lalonde, R., & Jackson, E. L. (2002). The new environmental paradigm scale: has it outlived its usefulness?. *The Journal of Environmental Education*, *33*(4), 28-36.

Lee, J., Hsu, L., Han, H., & Kim, Y. (2010). Understanding how consumers view green hotels: How a hotel's green image can influence behavioural intentions. *Journal of Sustainable Tourism*, *18*(7), 901-914.

Lemy, D. (2016). The effect of green hotel practices on service quality: The Gen Z perspective. In S. Radzi, M. Hanafiah, N. Sumarjan, Z. Mohi, D. Sukyadi, K. Suryadi & P. Purnawarman, *Heritage, Culture and Society: Research agenda and best practices in the hospitality and tourism industry*, 9-13.

Leszczyńska, A. (2014). Willingness to Pay for Green Products vs Ecological Value System. *International Journal of Synergy and Research*, *3*, 67-77.

Lin, P. C., & Huang, Y. H. (2012). The influence factors on choice behavior regarding green products based on the theory of consumption values. *Journal of Cleaner Production*, *22*(1), 11-18.

Lita, R. P., Surya, S., Ma'ruf, M., & Syahrul, L. (2014). Green attitude and behavior of local tourists towards hotels and restaurants in West Sumatra, Indonesia. *Procedia Environmental Sciences*, *20*, 261-270.

Lück, M. (2003). The'New Environmental Paradigm': Is the scale of Dunlap and Van Liere applicable in a tourism context?. *Tourism Geographies*, *5*(2), 228-240.

Manaktola, K., & Jauhari, V. (2007). Exploring consumer attitude and behaviour towards green practices in the lodging industry in India. *International Journal of Contemporary Hospitality Management*, *19*(5), 364-377.

Mainieri, T., Barnett, E. G., Valdero, T. R., Unipan, J. B., & Oskamp, S. (1997). Green buying: The influence of environmental concern on consumer behavior. *The Journal of social psychology*, *137*(2), 189-204.

Millar, M., & Baloglu, S. (2008). Hotel Guests' Preferences for Green Hotel Attributes. In *Eurochrie conference*.

Millar, M., & Mayer, K. J. (2013). A profile of travelers who are willing to stay in environmentally friendly hotel. *Hospitality Review*, *30*(2), 5.

Mostafa, M. M. (2009). Shades of green: A psychographic segmentation of the green consumer in Kuwait using self-organizing maps. *Expert Systems with Applications*, *36*(8), 11030-11038.

Niezgoda, N. (2011). The role of environmental knowledge, attitudes, and initiatives in the development of a tourism product. *Tourism, the Journal of University of Lodz*, *21*(1-2), 33-39.

Noe, F. P. and Snow, R. 1990. The New Environmental Paradigm and Further Scale Analysis. Journal of Environmental Education, **21**(4): 20-26.

Northeast Recycling Council (2011). *Guide to greening hotels through waste management and green purchasing.* Retrieved from https://nerc.org/documents/green_hotels_guide.pdf

Ogbeide, G. C. (2012). Perception of green hotels in the 21st century. *Journal of Tourism Insights*, *3*(1), 1.

Ogunbode, C. A. (2013). The NEP scale: measuring ecological attitudes/worldviews in an African context. *Environment, development and sustainability, 15*(6), 1477-1494.

Ottman, J. (2001). *Green marketing*. Lincolnwood, Ill.: NTC Business Books.

Pirages, D. C., & Ehrlich, P. R. (1974). *Ark II; social response to environmental imperatives.* W.H.Freeman & Co Ltd.

Pirani, S. I., & Arafat, H. A. (2014). Solid waste management in the hospitality industry: A review. *Journal of Environmental Management, 146,* 320-336.

Rao, A. R. & Bergen, M. E. 1992. Price premium variations as a consequence of buyers' lack of information. *Journal of Consumer Research, 19*(3), 412-423.

Roberts, J. A., & Bacon, D. R. (1997). Exploring the subtle relationships between environmental concern and ecologically conscious consumer behavior. *Journal of Business Research*, *40*(1), 79-89.

Sánchez-Ollero, J. L., García-Pozo, A., & Marchante-Mera, A. (2014). How does respect for the environment affect final prices in the hospitality sector? A hedonic pricing approach. *Cornell Hospitality Quarterly*, *55*(1), 31-39.

Santos, N., Vasconcelos, J., Lopes, S. and Mouga, T. (2014). Tourism environmental attitudes in Berlengas Biosphere Reserve, Portugal. In: *VII International Tourism Congress.*

Samarasinghe, G. D., & Samarasinghe, D. S. R. (2013). Green decisions: consumers' environmental beliefs and green purchasing behaviour in Sri Lankan context. *International Journal of Innovation and Sustainable Development*, *7*(2), 172-184.

Schlegelmilch, B. B., Bohlen, G. M., & Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European journal of marketing*, *30*(5), 35-55.

Schwartz, S. H. (1977). Normative influences on altruism. *Advances in Experimental Social Psychology*, *10*, 221-279.

Schwepker, C. H., & Cornwell, T. B. (1991). An examination of ecologically concerned consumers and their intention to purchase ecologically packaged products. *Journal of Public Policy & Marketing, 10*(2), 77-101.

Sloan, P., Legrand, W., & Chen, J. S. (2009). Financing schemes and funds according to sustainable principles. *Sustainability in the Hospitality Industry*, 161-167.

Stern, P. C. (2000). 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.

Styles, D., Schönberger, H., & Martos, J. L. G. (2013). Best Environmental Management Practice in the Tourism Sector. *JRC Scientific and Policy Report on. European Union. Viitattu*, *16*, 2015.

Susskind, A. M., & Verma, R. (2011). Hotel guests' reactions to guest room sustainability initiatives. *Cornell Hospitality Report, 11*(6), 6-13.

Tajfel, H., & Turner, J.C. (1986) The social identity theory of intergroup behavior. *Psychology of Intergroup Relations*, 5, 7-24.

Tartaglia, S., & de Grosbois, D. (2009). Comparison of tourists' environmental beliefs and environmental behaviour. Paper presented at the Administrative Sciences Association of Canada Annual Conference, Tourism and Sport Management Division, Niagara Falls, ON, June 7-9, 2009.

Tsai, C. W., & Tsai, C. P. (2008). Impacts of consumer environmental ethics on consumer behaviors in green hotels. *Journal of Hospitality & Leisure Marketing*, *17*(3-4), 284-313.

Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin*, *20*(5), 454-463.

Uysal, M., Jurowski, C. Noe, F. P. and McDonald, C. D. 1994. Environmental attitude by trip and visitor characteristics. *Tourism Management*, *15*(4): 284-94.

Van Liere, K. D., & Dunlap, R. E. (1981). Environmental Concern: Does It Make a Difference How It's Measured? *Environment and Behavior*, *6*(13), 651-676.

Verma, V. K., & Chandra, B. (2016). Hotel Guest's Perception and Choice Dynamics for Green Hotel Attribute: A Mix Method Approach. *Indian Journal of Science and Technology*, *9*(5).

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer "attitude-behavioral intention" gap. *Journal of Agricultural and Environmental ethics*, *19*(2), 169-194.

Wehrli, R., Schwarz, J., & Stettler, J. (2011). Are tourists willing to pay more for sustainable tourism? A choice experiment in Switzerland. *ITW Working Paper Series Tourism 003/2011*, Lucerne University of Applied Sciences and Arts.

Williams, J. (2007). Thinking as natural: Another look at human exemptionalism. *Human Ecology Review, 14*(2), 130-139.

Yi S., Li X., & Jai, T.M. (2016). Hotel guests' perception of best green practices: A content analysis of online reviews. *Tourism and Hospitality Research, 0*(0), 1-12.

Zengeni, N., Zengeni, D. M. F., & Muzambi, S. (2013). Hoteliers' Perceptions of the Impacts of Green Tourism on Hotel Operating Costs in Zimbabwe: The Case of Selected Harare Hotels. *Australian journal of business and management research, 2*(11), 64.

Zimmer, M. R., Stafford, T. F., & Stafford, M. R. (1994). Green issues: dimensions of environmental concern. *Journal of business research, 30*(1), 63-74.

Zografos, C., & Allcroft, D. (2007). The environmental values of potential ecotourists: a segmentation study. *Journal of Sustainable Tourism, 15*(1), 44-66.

APPENDICES

Appendix 1: Questionnaire

TOURISTS' WILLINGNESS TO PAY FOR GREEN HOTEL PRACTICES

Thank you for agreeing to participate in this important survey which is a part of my degree at the Polytechnic Institute of Leiria (Portugal), Sustainable Tourism Management MA.

The purpose of this survey is to explore if tourists are willing to pay extra to support environmentally friendly practices of hotels. Besides, it is intended to analyse whether environmental attitudes of tourists have an impact on their willingness to pay. This questionnaire measuring both these variables will allow me to analyse the relationship between them.

It should take about 10-15 minutes of your time to complete the questionnaire but please do not overthink your answers. You can be sure that your survey responses will be strictly confidential.

If you have any questions about the survey, please email me: 4150042@my.ipleiria.pt

I really appreciate your input!

I. WILLINGNESS TO PAY FOR GREEN HOTEL PRACTICES

This part is about the importance of green hotel practices and your willingness to pay for them. The collocation 'green practices' means practices that a hotel implements to minimize its harmful impact on the environment and to protect nature.

1. If I have a choice, I will choose a hotel based on its green practices

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

2. I am willing to pay a premium for a stay in a hotel implementing green practices

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

3. To support the hotel's efforts to be environmentally friendly, I am willing to pay a premium at the rate of...

- o 0%
- o 1-5%
- o 6-10%
- o 11-15%
- o 16-20%
- o more than 20%

4. Regardless of your previous answer, how the total amount of premium revenue should be used?

□ (1) to support the green practices of the hotel
□ (2) to support protection and improvement of natural environment of the region
□ (3) a part for the hotel and a part for regional environmental protection

5. Would any of the 3 options above negatively affect your willingness to pay?

□ No
□ Option 1
□ Option 2
□ Option 3

6. Please indicate your strength of agreement or disagreement that it is reasonable to pay extra for the following green practices

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Energy saving light bulbs					
Key cards used for turning on/off the lights and power in a guest room					
Low flow toilets and faucets					
Low flow showerheads					
Occupancy sensors reducing lighting					
Purchase of organic or locally made products					
Recycling bins					
Refillable shampoo dispensers					
Refillable soap dispensers					
Sheets change upon request					
Towel re-use programs					
Use of non-conventional energy sources, e.g. solar installations					
Other:_____ _____ _____ _____					

7. Regardless of your willingness to pay, please select 5 hotel practices that seem to be more important than others

□ Energy saving light bulbs
□ Key cards used for turning on/off the lights and power in a guest room
□ Low flow toilets and faucets
□ Low flow showerheads
□ Occupancy sensors reducing lighting
□ Purchase of organic or locally made products
□ Recycling bins
□ Refillable shampoo dispensers
□ Refillable soap dispensers
□ Sheets change upon request
□ Towel re-use programs
□ Use of non-conventional energy sources, e.g. solar installations
□ Other:_____

8. In case you are not willing to pay a premium for green hotel practices, please explain your reasons

_____
_____
_____

II. ENVIRONMENTAL ATTITUDES

This part consists of questions regarding your concern for the environment. To measure the environmental attitudes, the New Ecological Paradigm (NEP) scale is used. Please indicate your strength of agreement or disagreement with each of 15 statements below.

1. We are approaching the limit of the number of people the earth can support

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

2. Humans have the right to modify the natural environment to suit their needs

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

3. When humans interfere with nature it often produces disastrous consequences

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

4. Human ingenuity will ensure that we do NOT make the earth unlivable

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

5. Humans are severely abusing the environment

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

6. The earth has plenty of natural resources if we just learn how to develop them

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

7. Plants and animals have as much right as humans to exist

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

8. The balance of nature is strong enough to cope with the impacts of modern industrial nations

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

9. Despite our special abilities humans are still subject to the laws of nature

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

10. The so-called “ecological crisis” facing humankind has been greatly exaggerated

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

11. The earth is like a spaceship with very limited room and resources

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

12. Humans were meant to rule over the rest of nature

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

13. The balance of nature is very delicate and easily upset

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

14. Humans will eventually learn enough about how nature works to be able to control it

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

15. If things continue on their present course, we will soon experience a major ecological catastrophe

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

III. TOURIST PROFILE

1. What is your nationality?

_____

2. What is your age?

□ 18-29
□ 30-44
□ 45-59
□ 60+

3. What is your gender?

□ Male
□ Female

4. What is the highest level of education you have completed?

□ Middle school or less
□ High school
□ Bachelor's degree
□ Master's degree
□ Doctoral degree

5. Your current status is:

□ Student
□ Employed
□ Self-employed
□ Unemployed

□ Retired
□ Other: _____

6. What is the main purpose of your visit?

□ Business
□ Visiting friends/relatives
□ Holiday/leisure
□ Education
□ Culture
□ Nature
□ Surfing
□ Other:_____

7. Please choose one of the options below

□ First time visitor
□ Return visitor

8. How long is your trip/holiday: ____ (days)

Thank you for your time!