

Thesis Report

## Intention to Pay for Entering Nature: A TPB Approach

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## List of abbreviations

AC	Awareness of consequences
AR	Awareness of responsibility
CBS	Centraal bureau voor de statistieken
CVM	Contingent valuation method
HBO	Hoger beroepsonderwijs
MBO	Middelbaar beroepsonderwijs
NAT	Norm-activation theory
NEP	New ecological paradigm
PBC	Perceived behavioural control
PN	Personal norm
SN	Subjective norm
TCM	Travel cost method
TPB	Theory of planned behaviour
VBN theory	Value-belief-norm theory
WTP	Willingness to pay

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The last half year I have dedicated myself to writing this thesis. In this period all steps were taken to complete an academic research. If I look back the time has passed quickly but I can state with confidence that I worked very hard on this thesis and I am happy with the result. When I had an additional 6 months available I am sure I still would not be finished with this subject. But for now the thesis is done and in the process of writing an academic thesis I learned more than I would have expected and hoped for.

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# Summary

## Introduction

The aim of this study is to increase the understanding of how the amount of willingness to pay (WTP) for entering nature is influenced. The WTP is an intention of paying a specific fee level. Many studies have measured the WTP for nature, but those studies are often only descriptive (e.g.: Reynisdottir, Song & Agrusa, 2008; Huhtala & Pouta, 2007; Chung, Kyle, Petrick & Absher, 2011; Buckley, 2003; Williams & Black, 2002; Kim & Crompton, 2002). Two studies were found which tried to increase the understanding of how the WTP is influenced by combining the amount of WTP with a behavioural theory (Bernath & Roschewitz, 2008; Pouta & Rekola, 2001). This study focuses on increasing the understanding and explaining the variance in the intended fee level to pay for entering nature.

Natural sites are important as a place for recreational and relaxing opportunities. At least 48% of the Dutch population participate at least once per month in an outdoor recreation activity (CBS, 2009). To safeguard the recreational and relaxing opportunities for Dutch citizens the natural site management organisations need to increase their revenue. A possible new source of income for the natural site management organisations is to introduce an access fee for natural sites. By understanding how the variance of the intended fee level to pay for entering nature is influenced, reliable predictions of the intended fee level which people would be willing to pay can be made. Effective measures in respect of optimizing the revenue can be applied because of the knowledge of how the intended fee level to pay for entering nature is influenced on a cognitive level.

## Methodology

By interpreting the WTP as a behavioural intention the concepts of the theory of planned behaviour (TPB) can predict and explain the intended WTP. The independent variables of the TPB (behavioural beliefs, attitude, injunctive SN, descriptive SN and PBC) explain the dependent variables (Intention to pay, Intention to pay for a daytrip, intended WTP for entering nature for a daytrip). A behavioural belief is the sum of the evaluation multiplied with the perceived likelihood of a behavioural outcome when participated in the behaviour. The sum of the behavioural beliefs is also an independent variable, namely the indirect attitude. Beliefs hold information of how attitudes, SNs and PBC arises toward a specific behaviour. By identifying which beliefs and behavioural outcomes are salient toward a specific behaviour interventions for the behavioural intention can be very effective.

Salient behavioural outcomes were found via a qualitative elicitation study. In the qualitative elicitation study 20 randomly selected people participated. The results of the elicitation study were the input for the quantitative questionnaire. The questionnaire measured the independent variables toward the behaviour of paying for entering nature. The quantitative questionnaire was distributed in the first place online via snowball-effect. Due to a low number of respondents, the questionnaire was also distributed in hardcopy at the visitor centre of national park De Veluwezoom. In total 246 completed questionnaires were collected begin November 2012, whereof 168 online and 78 on-site. The quantitative data is analysed with bivariate correlations and linear regressions.

## Results and conclusions

The results, conclusions and implications of this study are presented for three behavioural intentions, namely: intention to pay for entering nature, intention the pay for entering nature for a daytrip, and intended fee level to pay (WTP) for entering nature for a daytrip. Explaining and understanding the variance in the intended fee level to pay for entering nature was the aim of this study. The results are presented for the three different intentions, namely first the intention to pay for entering nature, secondly the intention to pay for entering nature for a daytrip, and third the WTP level for entering nature for a daytrip.

### Intention to pay

Data analysis shows that the direct attitude, injunctive SN and descriptive SN together explain 59.4% of the variance of the behavioural intention to pay for entering nature. This means the more positive the attitude towards paying for entering nature, the higher the intention to pay for entering nature. Secondly this also means the more positive the perception of approval by important others, the higher the intention. Thirdly this means the more positive someone's observed or inferred actions of important others, the higher the intention to pay for entering nature. PBC is excluded due to non-significance. The direct attitude, injunctive SN and

descriptive SN are better in predicting the intention to pay for entering nature than the indirect attitude, injunctive SN, descriptive SN, and PBC who explain 43.4% of the variance of the intention to pay.

Together Belief 6 and 8 predict 32.4% of the intention to pay for entering nature. The other seven Beliefs were found to be not significant in predicting the intention to pay. This means the stronger someone's behavioural outcome of more visits to other free of charge natural sites when a fee is charged (Belief 6), the lower someone's intention to pay for entering nature. Secondly this means the stronger ones behavioural outcome of a barrier which is created to visit nature when a fee is charged (Belief 8), the less likely it is than someone intends to pay. Employing measurements for influencing the intention to pay are most efficient by a change in Belief 6 and 8. For an increase in the intention to pay for entering nature decreased, the perception of creating barriers must be increased and the perception of visiting other free of charge sites must be decreased.

#### Intention to pay for a daytrip

Data analysis shows that the indirect attitude, injunctive SN and descriptive SN together predict 31.9% of the variance of the intention to pay for entering nature for a daytrip. This means the more positive the indirect measured attitude towards paying for entering nature, the higher the intention to pay for entering nature for a daytrip. Secondly this also means the more positive the perception of approval by important others, the higher the intention for a daytrip. Thirdly this means the more positive someone's observed or inferred actions of important others, the higher the intention to pay for entering nature for a daytrip. The indirect attitude, injunctive SN and descriptive SN are better in predicting the intention to pay for entering nature for a daytrip than the direct attitude and descriptive SN who explain 28.4% of the variance of intention to pay for a daytrip.

Together Belief 2, 4, 7 and 8 predict 27.4% of the intention to pay for entering nature for a daytrip. The other five Beliefs were found to be not significant in predicting the intention to pay for entering nature for a daytrip. At first this means the higher the expectations of the visit (Belief 2), the higher someone's intention to pay for entering nature for a daytrip. Secondly this also means the lesser vandalism (Belief 4), the higher the intention to pay for entering nature for a daytrip. Thirdly this means the more someone expect the change of ecological nature into amusement park nature when a fee has to be paid (Belief 7), the higher the intention to pay for entering nature for a daytrip. Fourth and finally this means the more someone expects the creation of a barrier to visit nature when has to paid for entering nature (Belief 8), the higher the intention to pay for entering nature for a daytrip.

Employing measurements for influencing the intention to pay for entering nature for a daytrip are most efficient by a change in Belief 2, 4, 7 and 8. For an increase in the intention to pay for entering nature for a daytrip one or more of the perceptions of the following behavioural outcomes must be increased: high expectations of the visit, less vandalism, a change of ecological nature into amusement park nature and the creation of barriers.

#### WTP for a daytrip

A mean intended level of WTP of 4.83 euro (N= 243) was found for the behavioural intention to pay for entering nature for a daytrip. Data analysis shows that the direct attitude and descriptive SN together explain 19.6% of the variance of the intended fee level to pay for entering nature for a daytrip. This means the more positive the attitude toward paying for entering nature, the more likely it is that one intends to pay a higher fee. Secondly this means the more positive the observed or inferred actions of important others toward paying for entering nature, the higher the level of WTP is for entering nature for a daytrip.

Together Belief 2, 7 and 8 predict 20.0% of the intended fee level to pay for entering nature for a daytrip. At first this means the higher the expectations of a visit, the higher the intended fee level to pay for entering nature for a daytrip. Secondly this means the more someone expects the change of ecological nature into amusement park nature, the higher the intended fee level to pay for entering nature for a daytrip. Thirdly the more someone expects the creation of a barrier to visit nature when a fee has to paid for entering nature, the higher the intended fee level to pay for entering nature for a daytrip.

Employing measurements for influencing the intention to pay for entering nature for a daytrip are most efficient by a change in Belief 2, 7 and 8. For an increase in the intention to pay for entering nature for a daytrip

one or more of the perception of the following behavioural outcomes must be increased: the expectations of the visit, the perceived change of ecological nature into amusement park nature and the perception of creating barriers.

# 1. Introduction

Participating in a leisure or recreation activity in a green outdoor environment is often beneficial for the participants. Leisure and recreation is described by many researchers as an activity which is beneficial, in a physiological, psychophysiological, psychological, sociological, and economic way, and is rewarding for the participant (Driver, Brown & Peterson, 1991; Manfredi, Driver & Tarrant, 1996). One setting in which leisure and recreation activities are practised is the green natural outdoor environment. Looking at and being in green elements of a landscape positively affects the human health and well-being (Groenewegen, van den Berg, de Vries & Verheij, 2006). Exercising and being outdoors during leisure time and interacting with nature were found to be the two most effective activities for recovery from work stress (Korpela & Kinunen, 2011). Outdoor recreation is popular in the Netherlands with a percentage of 48 % of the population who participate at least once per month in an outdoor recreation activity (CBS, 2009).

The organisations that manage natural sites in the Netherlands face big cuts in subsidy from the Dutch government as result of the economic crisis of 2010. Management organisations of natural sites, for example Staatsbosbeheer and Natuurmonumenten, depend very much on subsidies. Subsidies often come from municipalities, provinces, the Dutch government and the European Union. In 2011 Staatsbosbeheer collected 89 million euro subsidy from the Dutch government (Staatsbosbeheer, 2011) and Natuurmonumenten collected in total 40,7 million euro subsidy from the Dutch government (Natuurmonumenten, 2011). The economic crisis of 2010 resulted in big cuts in the expenditures of the Dutch national government and this affects the nature sector as well. The management organisations of the natural sites have to cope with a smaller budget. To maintain the management organisations and therefore also to safeguard the future management of the natural sites something has to happen in order to deal with lower subsidies. One solution for the management organisations is to increase their revenue. This study will focus on how the revenue can be increased by raising an entrance fee to access to the natural sites.

Introducing user fees is a widely researched topic in the scientific literature with a focus on the maximum willingness to pay (WTP) (e.g.: Reynisdottir, Song & Agrusa, 2008; Huhtala & Pouta, 2007; Chung, Kyle, Petrick & Absher, 2011; Buckley, 2003; Williams & Black, 2002; Kim & Crompton, 2002). User fees may include fees for facilities as well as for services (Reynisdottir *et al.*, 2008). Some studies explore the WTP for implementation of new fees while others explore the WTP in order to increase levels of existing fees (Reynisdottir *et al.*, 2008). Furthermore it has been found that when a change in a non-market good appears by which the consumer believes he or she is better off, that person would be willing to pay (some) more in order to gain this positive change (Hanley, Shogren & White, 1997, in Reynisdottir *et al.*, 2008). Thus the WTP is higher for areas with a higher perceived level of benefits.

The contingent valuation method (CVM) and travel cost method (TCM) are frequently used to measure the WTP for natural sites (e.g.: Reynisdottir *et al.*, 2008; Lee & Han, 2002; Sorg, Loomis, Donnelly, Peterson, & Nelson, 1985 in Lee & Han, 2002; Sorg & Nelson, 1987 in Lee & Han, 2002). Where the CVM directly measures the economic value of a nonmarket resource or public good by asking to state the amount of money that the participant wants to pay for a hypothetical good or service (Lee & Han, 2002). The TCM indirectly measures this economic value by the sum of the direct travel costs, alternative costs of time and the costs of an entrance fee for a visit to the site (Becker, 2009; Chen, Hong, Liu, Zhang, Hou, & Raymond, 2004). In leisure and tourism studies the CVM is often used to value non market goods, (Reynisdottir *et al.*, 2008) like natural attractions in a nature based context, recreation resources, wildlife, and environmental quality goods (Chung *et al.*, 2011; Lee & Han, 2002).

The variance in the level of WTP cannot be explained by associated factors such as demographics or previous behaviour. For example Reynisdottir *et al.* (2008) conclude that the number of previous visits to the site is negatively related to the WTP, Ker & Manfredi (1991 in Kim & Crompton, 2002) conclude that the frequency of visitation is positively related to the WTP, while Kim & Crompton (2002) conclude that the number of previous visits have no relation with the WTP. Other studies have focussed on identifying possible relevant background factors which influence the WTP for visiting nature in order to maximize the revenue and minimize the resistance of introducing a fee (e.g.: Reynisdottir *et al.*, 2008; Huhtala & Pouta, 2008; Chung *et al.*, 2011;

Buckley, 2003; Williams & Black, 2002; Kim & Crompton, 2002). Previous behaviour is also not a good predictor of WTP. This study suggests another approach in order to explain the variance in the WTP.

Some research shows that psychological predictors of behaviour explain more variance in the WTP than associated factors such as demographics (e.g.: Bernath & Roschewitz 2008; Pouta & Rekola 2001; Werner, Schnaider-Beeri, Aharon, & Davidson, 2002 *in Bernath & Roschewitz, 2008*). Bernath & Roschewitz (2008) conclude that in case of explaining bid levels for recreational benefit in city forests in Zurich the results of WTP measured by the CVM can be better explained by including the psychological predictors attitude and subjective norm (from the theory of planned behaviour). Pouta & Rekola (2001) conclude that attitudes and perceived behavioural control (from the theory of planned behaviour) increase the understanding of the variance in WTP for abatement of forest regeneration. Not many studies with a particular focus on paying for visiting nature can be found in the literature which include psychological predictors of behaviour in order to explain more variance in the WTP. The above mentioned two studies therefore provide a good starting point for this study.

This study will focus on a specific behaviour which is not studied very often, namely paying for entering nature. Nature based recreation is in this study defined as a type of activity that contains at least a recreation element which is concerned with the direct enjoyment of some relatively undisturbed nature. All kind of recreation and leisure activities can be practiced in a natural setting such as for example walking, jogging, bird watching, hunting and cycling. It is important that the main attraction or reason to choose the setting would be the nature itself. Identifying which psychological predictors influence the behavioural intention and behaviour helps to make interventions to increase the revenue more effective. Management organisations of natural sites can use the outcomes of this study in a direct and practical manner to increase the WTP of visitors by applying strategies and policies which on the cognitive level positively affects the intention to pay for entering nature. The aim of this study is to increase the understanding of the extent to which psychological predictors of behaviour explain the variance in the amount of WTP for entering nature.

In order to frame this study Chapter 2 will review the WTP, three (pro-environmental) behavioural theories, and presents a conceptual model which will guide this study.

## 2. Theoretical framework

In this Chapter four different Sections will define the scope of this study. Section 2.1 is a description of WTP, the methods which measure the WTP, and the way the concept of WTP is used in this study. Section 2.2 reviews in short three theories that attempt to explain (pro-environmental). The conclusion of this short review will guide the choice for the behavioural theory which best fits the research aim of this study. Section 2.3 will extensively review the chosen behavioural theory. The final Section of Chapter 2 presents the conceptual model for this study.

### 2.1 Willingness to pay (WTP)

The willingness to pay (WTP) is a way of expressing the economic value of hypothetical and non-market goods (Reynisdottir *et al.*, 2008). The WTP is an amount of money which the respondent is willing to pay for the hypothetical good. The WTP is often interpreted as a behavioural intention, in other words an intention to pay a certain amount (e.g.: Bernath & Roschewitz 2008; Pouta & Rekola, 2001; Werner *et al.*, 2005).

Two methods of measuring the WTP are commonly used, namely the contingent valuation method (CVM) and the travel cost method (TCM). The CVM directly measures the economic value of a hypothetical good or service by asking what the maximum amount is that the respondent wants to pay for this hypothetical good or service (Lee & Han, 2002). The TCM indirectly measures the economic value of a good or service by asking what the direct travel costs, alternative costs of time and the costs of an entrance fee are (Becker, 2009; Chen *et al.*, 2004). In leisure and tourism studies the CVM is often used to value non market goods like natural attractions in a nature based context, recreation resources, wildlife, and environmental quality goods (Chung *et al.*, 2011; Lee & Han, 2002). The CVM has some advantages compared with the TCM to measure the WTP (Lee & Han, 2002). In the first place can the CVM measure differences in WTP for individual hypothetical changes. Secondly the CVM is capable of measuring the WTP for a trip with multiple purposes. Finally, the CVM can value the WTP of both users and nonusers.

The maximum WTP is interesting for policy makers and natural site managers because the WTP gives indirect information about the attractiveness of the site or a characteristic of a site. A high WTP insinuates a highly appreciated site or characteristic, while a low or no WTP insinuates a very low appreciated site or characteristic. Both methods to measure the WTP are descriptive and do not explain how the maximum amount which is willing to pay is influenced.

WTP can be explained with a behavioural theory when WTP is interpreted as a behavioural intention. There are different theories known which try to explain (pro-environmental) behaviour and (pro-environmental) behavioural intentions on a cognitive level. Section 2.2 elaborates on different theories which try to explain human behaviour and behavioural intentions.

### 2.2 Theories that explain behaviour

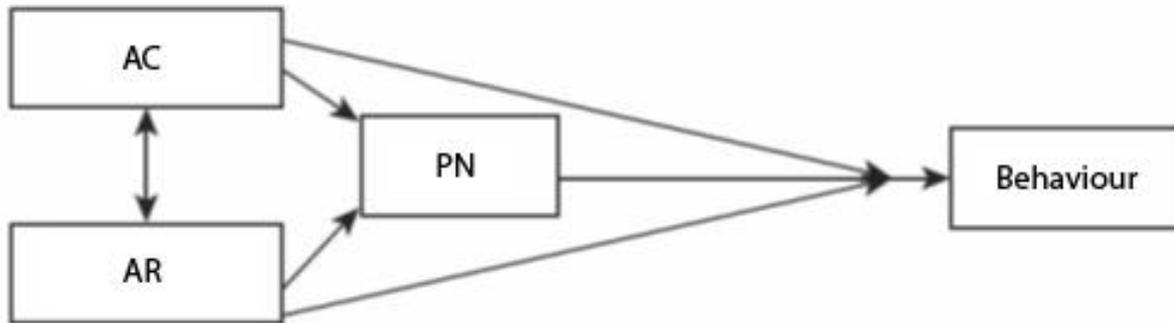
In the environmental social sciences three behavioural theories are most frequently used, namely: *norm-activation theory* (NAT), *value-belief-norm theory* (VBN) and the *theory of planned behaviour* (TPB). The first three Sections each describe one of those theories. Section 2.2.4 will review the differences and strong and weak aspects of each behavioural theory and the used psychological concepts. Based on this review the behavioural theory which best fits the research aim is chosen. The chosen behavioural theory is extensively reviewed in Section 2.3.

#### 2.2.1 Norm-activation theory (NAT)

The NAT (Figure 2.1), developed by Schwartz (1977 in Wall & Mill, 2007), explains pro-environmental behaviour. *Awareness of consequences* (AC) and *awareness of responsibility* (AR) influence each other and are the determinants of *personal norm*. Awareness of consequences (AC) refers to the acknowledgement of an individual that there are serious threats to other people, other species or the biosphere (Stern, Dietz, Abel,

Guagnano & Kalof, 1999). Awareness of responsibility refers to the acknowledgement of an individual that he or she is responsible for doing something concerning the issue or object. Personal norm (PN) is a direct determinant of the behaviour in question, where PN is activated by AC and beliefs about personal responsibility. PN refers to the feeling of strong obligation that people experience to participate in the behaviour in question (Wall & Mill, 2007). All together those concepts explain and predict pro-environmental behaviour (Wall & Mill, 2007).

Figure 2.1 Norm-activation model

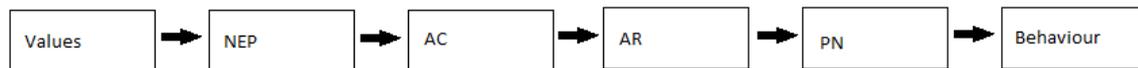


Note. AC= Awareness of consequences; AR= Awareness of responsibility; PN= Personal norm

### 2.2.2 Value-belief-norm theory (VBN theory)

The VBN theory (Figure 2.2), developed by Stern *et al.* (1999), based on the NAT. It also tries to explain pro-environmental behaviour. The VBN theory is an extension of the NAT but is also simpler due to the straightforward relationships among the concepts which explain behaviour. According to the VBN theory, behaviour is formed by the PN which a person possess. Where PN is formed only by the AR which a person has toward the issue or object. AR is formed by the AC of a person of the threat to other people, other species or the biosphere. AC is formed by a person's ecological worldview (New Ecological Paradigm (NEP)). And the NEP is formed by environmental values of a person. Those environmental values are relatively stable over time (Kaiser, Hübner & Bogner, 2005).

Figure 2.2 Value-Belief-Norm Theory model

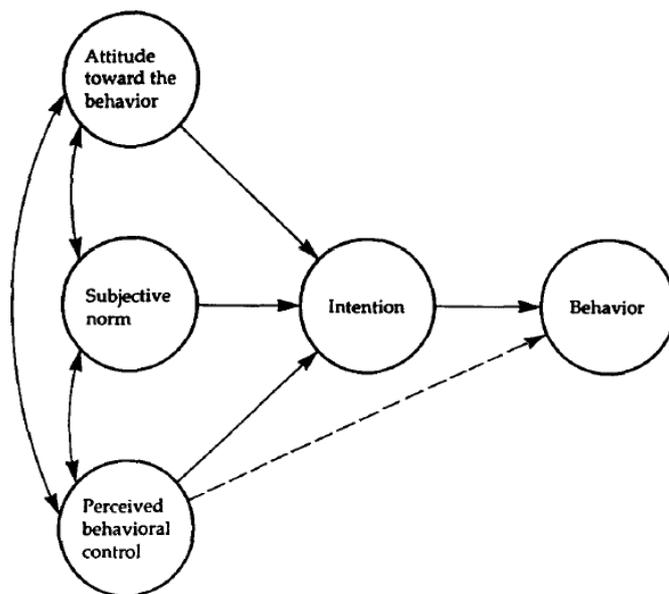


Note. NEP= New ecological paradigm; AC= Awareness of consequences; AR= Awareness of responsibility; PN= Personal norm

### 2.2.3 Theory of planned behaviour (TPB)

The TPB (Figure 2.3), developed by Ajzen (1991), tries to predict conscious human behaviour which does not necessarily need to be under complete volitional control. The TPB exists of a series of hypotheses which link *behaviour* directly to *behavioural intention* and *perceived behavioural control*, and link *behavioural intentions* to *attitude*, *subjective norm* and *perceived behavioural control*. Further, *attitudes* arise from *behavioural beliefs*, *subjective norms* arise from *normative beliefs*, and *perceived behavioural control* arise from *control beliefs* which people possess.

Figure 2.3 Theory of planned behaviour (Ajzen, 1991:182)



#### 2.2.4 Review behavioural theories

The NAT, VBN theory, and the TPB differ from each other. The VBN theory is based on the NAT (Stern *et al.*, 1999) and therefore they are very similar to each other and have to a large extent the same differences compared with the TPB. The first difference is that VBN theory is only applicable for pro-environmental behaviour while the TPB can be used for all kind of behaviours (Wall & Mill, 2007). Secondly, the VBN theory focuses only on internal norms (personal norms) while the TPB also includes external norms (subjective norms) (Wall & Mill, 2007). Finally, the TPB includes PBC and behavioural intention while the VBN theory does not include any form of those constructs (Wall & Mill, 2007).

According to Kaiser *et al.* (2005) the TPB is empirically superior over the VBN theory (and the NAT as well) in explaining behavioural intentions and behaviour. The explanatory power of the TPB is empirically well supported.

This study will use the TPB and her concepts in order to explain the specific behavioural intention of paying for entering nature. The strongest argument for this choice is that Kaiser *et al.* (2005) conclude that the TPB empirically better explains and predicts behavioural intention and behaviour compared with the VBN theory. Secondly, the VBN theory is only applicable on pro-environmental behaviour, where the behaviour *paying for entering nature* does not necessarily have to be a pro-environmental behaviour wherefore applying the VBN theory can cause serious problems. Due to the strong empirical evidence and the better fit of the TPB this study will use the concepts of the TPB in order to try to explain the variance in the behavioural intention of WTP for entering nature.

### 2.3 Theory of planned behaviour (TPB)

In the first part of Section 2.3 the psychological concepts of the TPB are defined. The TPB is employed in a wide range of research domains wherefore the concepts of the TPB interpreted differently. Therefore it is necessary to define how the concepts of each psychological predictor are used in this study. The relations between de concepts of the TPB are reviewed in Section 2.3.2.

#### 2.3.1 Concepts within the TPB

Some concepts of the TPB are subject of debate. This debate is reviewed and a description of each concepts for this study is provided.

### Behaviour

The behaviour in the TPB must be conscious or planned. Furthermore is the behaviour defined in action, target, context and time elements (Ajzen, 2012b; Fishbein & Ajzen, 1975). Behaviour can be measured in different levels of specificity, from very general to very specific behaviour (Fishbein & Ajzen, 1975). The TPB includes the perceived degree of control people have over performing the behaviour wherefore the behaviour has not to be under complete volitional control (Ajzen, 1991).

### Intention

The concept intention refers to the behavioural intention that represent the strength of motivational factors for performing a particular behaviour (Ajzen, 1991). Intentions can be held to a particular, a class or any behaviour (Fishbein & Ajzen, 1975).

### Perceived behavioural control (PBC)

Perceived behavioural control (PBC) represents the perception of the level of control which people have over performing the behaviour (Ajzen, 2012a). PBC can be summarized (Equation 2.1) as the sum of the perceived likelihood of control over behaviour ( $c$ ) multiplied by the perceived power ( $p$ ) of performing the behaviour (Ajzen, 1991).

Equation 2.1. PBC (Ajzen, 1991:197)

$$PBC \propto \sum_{i=1}^n c_i p_i$$

Note. PBC= Perceived behavioural control;  $c$ = Control belief;  $p$ = Perceived power of control

Many behaviours are not under complete volitional control, even if it looks like the behaviour is under complete volitional control. When behaviour is volitional, PBC does not correlate with behaviour (Ajzen, 1991). The PBC-behaviour relation is found to be only significant when people intend to perform the behaviour (Ajzen, 2012a). PBC only increases the predictability of the intention when people are positive toward performing the behaviour (Ajzen, 1991; 2012a; Armitage & Conner 2001). In order to deal with those possible control difficulties, the TPB includes the control concept PBC.

The level of PBC can vary for different behaviours and is influenced by the level of information about the behaviour, the level of requirements or level of available resources to perform the behaviour, and the level of new and unfamiliar elements in relation with the behaviour (Ajzen, 1991). Low levels of just mentioned constructs result in a weaker influence on PBC with behaviour, while a higher level of the mentioned constructs result in a stronger influence on PBC with behaviour. Sometimes the perception of behavioural control may not be very realistic and add therefore little accuracy to the behavioural prediction (Ajzen, 1991).

Some studies (e.g.: Armitage & Conner, 2001; de Vries, Dijkstra & Kuhlman 1988 in Armitage & Conner, 2001), argue that other concepts of control, like *self-efficacy* and *perceived control over behaviour* are better definitions for including a control element in the TPB. Self-efficacy is defined by Armitage & Conner (2001: 479) as “confidence in one’s own ability to carry out a particular behaviour” and perceived control over behaviour is defined as “perceived controllability of behaviour”. Ajzen (1991; 2012a) argues that PBC and self-efficacy (of Bandura, 1977; 1982 in Ajzen 1991) are the same concepts while Bandura (1986, 1992, in Armitage & Conner, 2001) argue that those concepts differ. Self-efficacy is concerned with cognitive perceptions of control based on *internal control factors* (e.g. confidence), while PBC reflects also more general and *external factors* (e.g. availability) (Armitage & Conner, 2001). Armitage & Conner (2001) sought for meta-analytic evidence to support a distinction between the control concepts self-efficacy, perceived control over behaviour, and PBC. A mean  $r = .35$  (with  $p < .05$ ) was found between self-efficacy and behaviour, a mean  $r = .18$  (with  $p < .001$ ) was found between perceived control over behaviour and behaviour, and a mean  $r = .40$  (with  $p < .001$ ) was found between PBC and behaviour. The added explained variance of all three relations was (less than) 2%. The strongest correlation of the three tested concepts of control with behaviour was thus found for PBC with an added 2% of the explained variance. Due to the empirical evidence the control concept which is included in this study is the PBC.

Table 2.1. Correlations control concepts with behaviour (Armitage & Conner 2001:484)

Relationship with behaviour	<i>r</i>	added % explained variance	N of tests
Self-efficacy	.35*	2	13
PBC	.40***	2	40
Perceived control over behaviour	.18***	<1	6

\*  $p < .05$

\*\*\*  $p < .001$

### Attitude

Attitudes toward behaviours can differ from general to very specific. Attitudes can be summarized (Equation 2.2) as the sum of the strength of the cognitive dimension ( $b$ ) multiplied with the evaluative dimension ( $e$ ) of the behavioural outcome (Ajzen, 1991).

Equation 2.2 Attitude (Ajzen, 1991:191)

$$A \propto \sum_{i=1}^n b_i e_i$$

Note.  $A$ = Attitude;  $b$ = Cognitive dimension;  $e$ = Evaluative dimension

The evaluative dimension refers to the subjective evaluation of the object or outcome of the behaviour. The cognitive dimension refers to what a person thinks is true about the object or (outcome of the performed) behaviour. When the cognitive and evaluative dimension of attitudes are congruent (strengthen each other) the attitude-behaviour relation is stronger (Skår, Sniehotta, Araújo-Soares & Molloy, 2008).

Positive and negative attitudes can be held against the same object or behaviour at the same time. Skår *et al.* (2008) refer to this as attitudinal ambivalence. Attitudes with a low level of attitudinal ambivalence are more stable over time than those with high levels of attitudinal ambivalence (Sheeran & Abraham, 2003).

According to the principle of compatibility attitude and behaviour relate with each other to the extent as they refer to the same level of specificity of the action, target, context and time elements (Ajzen, 2005). Attitudes can be held to very general behaviour but also to a very particular behaviour (Ajzen, 2012a). General attitudes refer often only to one of those elements, while attitudes toward particular behaviour refer in a specific way to all of those elements. The lack of compatibility (especially in the action element) is responsible for the often weak and non-significant relations between general attitudes and specific behaviour (Ajzen, 2012a). General attitudes can relate to specific behaviours but the principle of compatibility suggest that the assessed attitude need to correspond to the behaviour on the same level of specificity in terms of the action, target, context and time elements in order to have a strong relation between those concepts (Ajzen, 2012a).

### Subjective norm (SN)

The subjective norm (SN) in the TPB refers to the extent to which important others (dis)approve participating in a behaviour and to the participant's motivation to comply with this (dis)approval of important others (Ajzen, 1991). SN can be summarized (Equation 2.3) as the sum of the strength of the normative beliefs ( $n$ ) multiplied with the person's motivation to comply ( $m$ ) with the important others in question (Ajzen, 1991).

Equation 2.3 SN (Ajzen, 1991:195)

$$SN \propto \sum_{i=1}^n n_i m_i$$

Note.  $SN$ = Subjective norm;  $n$ = Normative belief;  $m$ = Motivation to comply

Fishbein & Ajzen (2010 *in Ajzen 2012a*) recently extended the SN. The SN was always measured with only the injunctive norm (perceived (dis)approval of important others). The extension includes also the descriptive norm (observed or inferred actions of the important others) to measure the SN. Descriptive beliefs are known to be very strong because they are created via direct experience (Fishbein & Ajzen, 1975).

### Beliefs

Beliefs are part of attitudes, SNs and PBC and therefore also directly influence attitudes, SNs and PBC. Three kind of beliefs in the TPB are distinguished by Ajzen (1991): behavioural beliefs, normative beliefs and control beliefs. Someone can have beliefs *in* something but can also have beliefs *about* something. The TPB only deals with beliefs about something.

Beliefs reflect the information people have about performing a behaviour, and this information is almost never accurate and complete wherefore beliefs are not a rational factor (Ajzen, 2011). Beliefs are constructs of what people think are possible outcomes of participating in a specific behaviour. Beliefs can be formed in a rational and unbiased way that accurately represent reality, but most of the time this is not the case (Ajzen, 2011).

Beliefs are developed via observation, interaction, learned observation and information (Fishbein & Ajzen, 1975). People possess beliefs about situations, issues and objects which are associated with the particular situation, issues and/or objects and form salient beliefs about a particular situation, issue or object (Ajzen, 1991).

The number of beliefs people can hold is large (Miller 1956, *in Ajzen 1991*). The strength of beliefs varies, but descriptive beliefs, which are formed via direct experiences, are known to be very strong (Fishbein & Ajzen, 1975).

### Behavioural beliefs

According to Fishbein's expectancy-value model of attitudes, attitudes toward behaviour are developed from the beliefs people hold about the outcome of the behaviour (Ajzen, 1991). A person can hold multiple beliefs at the same time. When the behavioural outcomes are associated with already accessible beliefs the outcomes are evaluated (Ajzen, 1991). The perceived strength or likelihood of a behavioural beliefs is the cognitive dimension of attitude. The sum of the subjective dimension multiplied with the cognitive dimension is an indirect measurement of attitude. Behavioural beliefs show the arguments (and their strength) behind attitudes and possess important information of attitudes (Pouta & Rekola, 2001).

### Normative beliefs

Normative beliefs reflect the perceived (dis)approval of important others to participate in a certain behaviour. Injunctive normative beliefs refer to the (dis)approval of important others of performing a behaviour (Ajzen, 1991). The injunctive SN is computed by multiplying the perceived strength of each injunctive normative belief with the motivation to behave as the important other(s) wants the participant to behave (Ajzen, 1991). Fishbein & Ajzen (2010 *in Ajzen, 2012a*) recently suggested that also the descriptive SNs need to be included in the TPB. Descriptive normative beliefs refer to the (non) participation of important others in a specific behaviour. Those beliefs are directly based on the actions of the important others. The descriptive SN exists of multiplying the perceived strength of each descriptive normative belief and the motivation to do behave like the important others do. Measuring normative beliefs which include both descriptive beliefs and injunctive beliefs increase the predictive power of SN (Armitage & Conner, 2001; Fishbein & Ajzen, 2010 *in Ajzen, 2012a*).

### Control beliefs

Control beliefs reflect the perceived level of control people have over deciding to participate in a specific behaviour. When people perceive it is easy to perform a behaviour it is more likely that they will (try to) perform that behaviour (Ajzen, 1991).

### 2.3.2 Correlations amongst the concepts of the TPB

Large correlations between the concepts of the TPB make the TPB as a model which explains behaviour strong. This Section will review the hypothetical relations of the TPB which are mainly based on the meta-analysis of the TPB of Armitage & Conner (2001). This meta-analysis is based on 185 independent studies that were published up to 1997. First the direct relations of the behavioural intention and PBC with behaviour are discussed. This will be followed by the direct relations of attitude, SN and PBC with the behavioural intention and finally the behavioural beliefs-attitude, normative beliefs-SN and control beliefs-PBC relations are discussed.

Before continuing with reviewing the results of meta-analyses of the TPB a critical note has to be made. Ajzen (1991) argues that for one behaviour only one or two concepts of the TPB can correlate significantly while for another behaviour a different concepts of the TPB can have a significant relation. Differences in the strength of correlations are expected between the same concepts for different behaviours. Meta-analyses of the TPB use studies which studied a wide range of different behaviours. The reported mean correlations between the concepts of the TPB can therefore be not significant for the studied behaviour in this study. The main reason to review the relations between the concepts of the TPB is to show that the TPB is a good model for predicting behaviour and behavioural intentions. A broader understanding of the relations between the concepts of the TPB helps to get an idea of the strong aspects and pitfalls of those relations, which contribute in creating a better understanding of the TPB.

Before continuing with reviewing the relations between the concepts of the TPB there are three conditions which have to be met in order to increase the predictive value of the TPB as model (Ajzen, 1991). In the first place, the different concepts of the TPB all have to correspond with the same action, target, context, time and the same levels of specificity. Behaviour can be measured in different levels of specificity, from very general to very specific behaviour (Fishbein & Ajzen, 1975). Secondly, the concepts must be stable in the time between the measurement and actual performance of the behaviour. And finally the measurement of the concepts must realistically reflect the concepts in order to increase the predictive value of the TPB.

#### Intention-behaviour

Armitage & Conner (2001:481) report in their meta-analyses an average  $R = .47$  (with  $p < .001$ ) (48 studies) between behavioural intention and behaviour. Sheeran's (2002 in Ajzen, 2012a) meta-analyses of meta-analyses report a mean  $R = .53$  between intention and behaviour. Roughly, these figures mean that on average approximately 25% of the variance of behaviour is explained by the intention. In the social sciences, this is considered as a substantial effect (Vaske, 2008), which is scientifically meaningful.

#### PBC-behaviour

A mean  $R = .37$  (with  $p < .001$ ) (60 studies) between PBC and behaviour was found by Armitage & Conner (2001). This average correlation means that on average 13% of the variance of behaviour is explained by the concept PBC. The effect size of this explained variance is considered as medium (Vaske, 2008), but is still scientifically meaningful.

#### Multiple relation of intention and PBC with behaviour

The average multiple correlation of intention and PBC with behaviour is  $R = .52$  (with  $p < .001$ ) (63 studies) (Armitage & Conner, 2001). This average means that approximately 27% of the behaviour is explained by the concepts intention and PBC. In the social sciences this is considered as a substantial effect (Vaske, 2008) which is scientifically meaningful.

#### Attitude-intention

Armitage & Conner (2001) report in their meta-analyses for the attitude-intention relation an average  $R = .49$  (with  $p < .001$ ) (115 studies). Roughly, this average means that on average approximately 24% of the variance of behavioural intention is explained by the attitude. In the social sciences, this is considered as a substantial effect (Vaske, 2008), which is also scientifically meaningful. According to Ajzen (1991), attitudes make a significant contribution to the prediction of intentions in 15 of the 16 studies (with  $p < .05$ ) which were examined, with correlations between  $R = .26$  and  $R = .91$ . Only 6.7% of the variance of intention is explained by

attitude in the weakest correlation, while 82.8% of the variance of intention is explained by attitude in the strongest correlation. The results of Ajzen show that attitude is positively associated with the behavioural intention.

### SN-intention

A mean  $R = .34$  (with  $p < .001$ ) (137 studies) was found for the SN-intention relation (Armitage & Conner, 2001). This average means that approximately 12% of intention is explained by the SN. This is considered as a medium effect (Vaske, 2008). The analyses of Ajzen (1991) for SN-intention relations gave mixed results without any kind of pattern.

Including descriptive norms will result in an improved correlation between SN and intention. Researchers have proposed to include other norms (e.g. moral and descriptive norms) to improve the SN-intention relation (Armitage & Conner, 2001). Ravis & Sheeran (2003a, in Ajzen, 2012a) report in their meta-analyses a mean  $R = .44$  between descriptive norms and intentions. Fishbein & Ajzen (2010 in Ajzen, 2012a) included descriptive norms to increase the SN-intention relation.

### PBC-intention

The meta-analyses of Armitage & Conner (2001) report an average  $R = .43$  (with  $p < .001$ ) (144 studies) between PBC and intention. This number means that approximately 18% of the intention is explained by the PBC. In the social sciences this effect is considered to be substantial (Vaske, 2008).

### Multiple relation of attitude, SN and PBC with intention

Together attitude, SN and PBC predict intention with an average  $R = .63$  (with  $p < .001$ ) for 154 studies (Armitage & Conner, 2001). Ajzen (1991) found for the same multiple correlation a mean of  $R = .71$  (with  $p < .05$ ) for 19 studies. Those figures mean that the behavioural intention respectively is explained for 39% and 50% by the attitude, SN and PBC. Those effects of attitude, SN and PBC in predicting intention is considered in the social sciences as substantial (Vaske, 2008) and are scientifically meaningful.

### Behavioural beliefs-attitudes

Beliefs in general are not always rational and unbiased. However PBC, SN and attitude follow automatically and consistently from those irrational and biased beliefs (Ajzen, 2011).

Armitage & Conner (2001) report for the behavioural beliefs-attitude relation a mean  $R = .50$  ( $p < .001$ ) (42 studies). This number means that approximately 25% of the attitude is explained by the behavioural beliefs. In the social sciences the effect of PBC in predicting intention is considered substantial (Vaske, 2008) and scientifically meaningful. The operationalization of attitudes in the different studies is not mentioned by Armitage & Conner(2001). Behavioural beliefs are determined by the subjective value of a behavioural outcome or attribute and the strength of that belief (Armitage & Conner, 2001).

### Normative beliefs-SN

A mean  $R = .50$  ( $p < .001$ ) (34 studies) is reported for the normative beliefs-SN relation (Armitage & Conner, 2001). Roughly, this average means that on average approximately 25% of the variance of SN is explained by the normative beliefs. In the social sciences, this is considered as a substantial effect (Vaske, 2008), which is also scientifically meaningful. SN refer here to the individual's perception of social pressure to perform (or not to perform) the behaviour. How the SN is measured is not mentioned by Armitage & Conner (2001).

### Control beliefs-PBC

Armitage & Conner (2001) report in their meta-analyses a mean  $R = .52$  ( $p < .001$ ) (18 studies) between control beliefs and PBC. This number means that approximately 27% of the PBC is explained by the control beliefs. In the social sciences the effect of PBC in predicting intention is considered substantial (Vaske, 2008) and scientifically meaningful. Studies which included a mix of different kind of control aspects where defined by

Armitage & Conner (2001) as PBC. Control beliefs are determined by the evaluation of perceived power of specific factors which make it easy or difficult to perform the behaviour.

#### Multiple relation of behavioural, normative and control beliefs with attitude, SN and PBC

Multiple correlations for beliefs in general are not found in the literature. Some studies (e.g. Miniard & Cohen, 1981 in Ajzen 1991) argue that the distinctions made between the different beliefs do not add any predictive value. All beliefs associate the behaviour of interest with an attribute of some kind (e.g. an outcome, normative expectation and resource needed to perform the behaviour). Following this argument, all beliefs can therefore be integrated into a single dimension. The distinctions between the salient beliefs are for theoretical and practical reasons of interest because the different dimensions of beliefs hold a lot of information of how different salient beliefs influence attitudes, SNs and PBC (Ajzen, 1991). The scientific relevance of knowing how the intentions to pay for entering nature are influenced is by identifying the salient beliefs who are involved with paying for entering nature. By identifying which beliefs toward paying for entering for nature contribute significant in the prediction of the behavioural intentions to pay for entering nature, only those beliefs can be included in future research. The practical use is identifying how to influence the intentions to pay for entering nature in the most effective way. If only a few beliefs predict the intention to pay very well, it is very effective to influence those few beliefs in order to create a change in the intention to pay. With this information natural site management organisations can very effectively influence the intention to pay and can increase their revenue. Influencing or predicting a behaviour can be done by influencing the attitude, SN and/or PBC toward the behaviour. The attitude, SN and PBC can be influenced by influencing the corresponding beliefs.

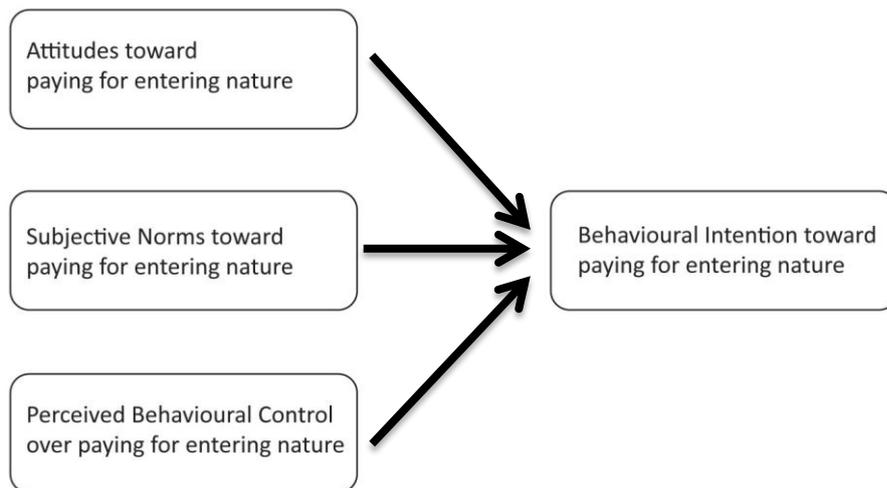
#### Conclusion TPB

The TPB is a straightforward model which is empirically well supported. The TPB predicts intention and behaviour from attitudes, SN, and PBC to a great extent. Salient beliefs are an important part of the model because they form the attitudes, SN and PBC and give information about how those concepts are formed. The information, which is provided by the concepts of the TPB is useful in order to understand, predict and influence (future) behaviour and is therefore a very useful theory for this study.

## **2.4 Conceptual model**

Different concepts of the TPB are used to increase the understanding of how the variance of WTP is influenced. The behavioural intention in the TPB is predicted by the attitudes toward the behaviour, the SNs toward the behaviour and the PBC over the behaviour. Applied to this study this results in the behavioural intention of paying a fee for entering nature. Attitudes are defined as the attitudes toward paying for entering nature, the SNs are defined as the SNs toward paying for entering nature and the PBC is defined as the PBC over paying for entering nature. This results in the conceptual model shown in figure 2.4.

Figure 2.4 Conceptual Model



The main research question for this study is derived from the conceptual model:

How are the psychological concepts of the TPB related to the intention to pay for entering nature?

The sub research questions derived from the conceptual model are:

1. To what extent does the attitude towards paying for entering nature influence the intention to pay for entering nature?
2. To what extent does the SN towards paying for entering nature influence the intention to pay for entering nature?
3. To what extent does the PBC over paying for entering nature influence the intention to pay for entering nature?

In the Chapter 3 the methodology is described which is used in order to find the answers of the sub research questions and answer the main research question. The operationalization of measuring the different concepts of the conceptual model is explained.

### 3. Methodology

This Chapter will describe which methodology is used in order to find the extent to which psychological predictors of behaviour explain the variance in the WTP for entering nature. A quantitative research design is applied in order to measure the extent of influence of the psychological predictors of the TPB on the behavioural intention to pay for entering nature. Beliefs influence the psychological predictors direct and hold therefore information of the formation of those psychological predictors. In order to include behavioural beliefs in the quantitative research design and increase the explanatory power of how the intentions arise, a qualitative elicitation study is employed at first. In Section 3.1 the operationalization of the elicitation study is described and in Section 3.2 the quantitative research design is described. Ajzen (2012b) describes extensively on his website how to construct an elicitation study and a quantitative questionnaire for the TPB. The described methodology will be mainly based on the information on this website except when referred to another source. Section 3.3 describes the followed sampling procedure. In Section 3.4 the method of analysing the collected data is described.

#### 3.1 Elicitation study

Before salient beliefs and behavioural beliefs can be included in the quantitative research an elicitation study is employed at first to find the salient beliefs about paying for entering nature. A relative small group of people (N= 20) was individually asked to state possible positive and negative outcomes of paying for entering nature. Box 3.1 gives an overview of the questions which were included in the elicitation study. Concerning beliefs, only questions about behavioural beliefs are included in the elicitation study. Ajzen also includes questions to elicit normative outcomes and control factors. This information about normative outcomes and control factors is not interesting for answering the research questions. Those outcomes are not of particular interest for this study due to the suggested small and/or non-significant contribution of normative outcomes and control factors involved in the behaviour of paying for entering nature. Only including the direct measurements of injunctive and descriptive SNs in the quantitative research is sufficient to measure the SN. Also for PBC only the direct measurement is included in the quantitative research.

##### Box 3.1 Questions elicitation study

###### *Behavioural outcomes*

- What do you see as advantages of paying for entering nature?
- What do you see as disadvantages of paying for entering nature?
- What comes to mind when you think of paying for entering nature?

###### *WTP*

- Why would you be willing to pay for entering nature?
- Why would you not be willing to pay for entering nature?
- If you would be willing to pay, what is the maximum amount?

###### *Demographics*

- What is your sex
- What is your age

Three questions concerning the WTP for entering nature is included. This question is included to get a first idea if people would be willing to pay for entering nature and the underlying reasons.

Two questions concerning demographics are included to check for the sex and age distribution of the respondents of the elicitation study.

The most often referred behavioural outcomes are included in the quantitative study. The collected data of the elicitation study was analysed by grouping the answers. When several times no new behavioural outcomes were reported by the respondents, the elicitation study was stopped. The grouped outcomes gives a view of the salient behavioural outcomes people hold toward paying for entering nature.

Those behavioural outcomes are the input for the quantitative study. Section 3.2 presents the research design for the quantitative study.

## 3.2 Quantitative research design

This Section will describe how the quantitative research is designed. The questionnaire will assess behavioural intentions, PBC, SNs, attitudes, behavioural beliefs, and demographics which all are associated with the behaviour of paying for entering nature. The questionnaire contains several Sections where items are grouped which assess the same variable or type of questions. The psychological predictors of behaviour, the WTP and the demographics are the main groups. The psychological predictors of behaviour are divided in different subgroups in order to suggest the lists of questions are short. This has as advantage that the participants can focus on small groups of questions and the list of questions does not look endless. For an example of the questionnaire see Appendix A.

First is explained how the independent variables are operationalized (Section 3.2.1). Secondly is the operationalization of the dependent variables explained (Section 3.2.2). And finally, the operationalization of the demographics is explained (Section 3.2.3).

### 3.2.1 Independent variables

Three independent variables are included in the conceptual model: 1) attitude, 2) SN, and 3) PBC. The operationalization of each of the concepts is explained separately.

#### Attitudes

Attitudes are measured in two different ways. First, a direct single item measurement. The item was measured with “to what extent are you either positive or negative towards paying for entering nature?” and the answers could be given on a 7-point scale (*extremely negative, negative, slightly negative, neutral, slightly positive, positive, and extremely positive*).

The second measurement of attitude is an indirect measurement, assessed through the behavioural outcomes which are identified in the elicitation study. The behavioural outcomes were assessed with “paying for entering nature will result in *behavioural outcome X*” and the answers could be given on a 7-point scale (*extremely likely, likely, slightly likely, neutral, slightly unlikely, unlikely, and extremely unlikely*). Furthermore, the behavioural outcomes were assessed with “having *behavioural outcome X* is for me...” and the answers could be given on a 7-point scale (*extremely positive, positive, slightly positive, neutral, slightly negative, negative, and extremely negative*). A behavioural belief toward a specific behavioural outcome of the elicitation study is the result of multiplying the evaluation of the behavioural outcome with the likelihood of the behavioural outcome. The indirect measurement of attitude is the sum of all salient behavioural beliefs.

#### Subjective norms (SNs)

SNs are measured by two different items: the injunctive SN and the descriptive SN. Before the injunctive and descriptive SNs are measured a description of how participants need to interpret *important others* was given. Box 3.2 shows the description of important others.

##### Box 3.2 Important others

Probably there are individuals or groups of people in our live who are very important to us, those people we refer to as <i>important others</i> .
--

Injunctive SN is measured by “most important others think I should pay for entering nature” with a 7-point scale (*totally agree,, agree, more agree than disagree, neutral, more disagree than agree, disagree, totally disagree*). Descriptive SN is measured by “most important others would pay for entering nature” with the same 7-point scale as is used for injunctive SN.

### Perceived behavioural control (PBC)

PBC is measured with a direct single item. The item was measured by “it is up to me if I pay for entering nature” with a 7-point scale (*totally agree, agree, more agree than disagree, neutral, more disagree than agree, disagree, totally disagree*).

### **3.2.2 Dependent variables**

One dependent variable is included in the conceptual model: behavioural intention toward paying for entering nature. The intentions to pay for entering nature are measured in five ways: 1) general behavioural intention toward paying for entering nature (intention), 2) intention toward paying for entering nature for a daytrip (intention daytrip), 3) intended WTP level for entering nature for a daytrip (WTP daytrip), 4) intention toward paying for entering nature for a short trip (intention short visit), and 5) intended WTP level for entering nature for a short visit (WTP short visit).

### Intention

The general behavioural intention is measured with “I intend to pay for entering nature” and a 7-point scale (*totally agree, agree, more agree than disagree, neutral, more disagree than agree, disagree, totally disagree*).

The elicitation study revealed that participants need a description of where they exactly are asked to pay for. Two main distinctions between differences in visits followed from the elicitation study. Respondents mentioned they were willing to pay for a daytrip while others only were willing to pay for a short visit. Two different descriptions of a visit to nature were included in the questionnaire (Box 3.3 and 3.4) based on the outcomes of the elicitation study.

#### Box 3.3 Daytrip

##### **Daytrip**

Daytrips to nature are characterized by visiting a natural setting for a big part of a day. The natural site can be close to home but can also be further away. The settings can be for example a forest, beach, grassland, wetland, or any other type of natural setting and those settings are often quite large. Walking, hiking, cycling, swimming, and picnicking are examples of activities that can be practised. It is important that the main purpose of the daytrip is to visit and enjoy the natural setting.

### Intention daytrip

The daytrip is measured with the multiple choice question “would you be willing to pay for entering nature for a daytrip?”. The answer categories are “yes”, and “no”.

### WTP daytrip

If “yes” is checked for intention daytrip a follow up question is asked which measures the maximum amount the participant would be willing to pay for a daytrip. In order to measure the maximum amount of WTP the open follow up question is included “what is the maximum amount you would be willing to pay for entering nature for a day trip?”, with place to write down the maximum amount in “euro per daytrip”. When “no” was checked the WTP is interpreted as 0 euro per daytrip.

#### Box 3.4 Short visit

##### **Short visit**

Short visits to nature are characterized by visiting a close to home natural setting to have for example a short walk. Natural settings can be for example a forest, beach, grassland, wetland, or any other type of natural setting. The site doesn’t have to be small but it has to be close to home and a short visit doesn’t take longer than 1.5 hour. It is important that the main purpose of the visit is to visit and enjoy the natural setting.

### Intention short visit

The behaviour for the short visit is measured with the multiple choice question “would you be willing to pay for entering nature for a short visit?”. The answer categories are “yes”, and “no”.

### WTP short visit

If “yes” is checked for intention short visit a follow up question is asked which measures the maximum amount the participant would be willing to pay. In order to measure the maximum amount of WTP the open follow up question “what is the maximum amount you would be willing to pay for entering nature for a short visit?” is included, with place to write down the maximum amount in “euro per short visit”. When “no” was checked the WTP is interpreted as 0 euro per short visit.

### **3.2.3 Demographics**

Five demographic characteristics of the sample are measured: 1) country of residence, 2) sex, 3) age, 4) education level, and 5) income level. Those demographics are in the first place included because they can help to check if the sample is representative for the research population. When the respondents are not representative for the research population the results has to be interpreted with caution.

#### Country of residence

The described research population, in Section 3.3, is limited to Dutch citizen and this has to be checked in the quantitative research. To make sure only Dutch citizens (see *research population*) are participating, the open question “what is your country of residence?” is included, with a place to write down the answer.

#### Sex

The sex of the respondents is included to check if the sex of the respondents has more or less the same distribution as the described research population. The Netherlands has a ratio of 1 man to 1.048 females (CBS, 2012a). The sex of the respondents is measured by using “Sex:” with two boxes “male” and “female” where one has to be checked.

#### Age

Age of the respondents is included to check if the age of the respondents has more or less the same distribution as the described research population. Centraal Bureau voor de Statistiek (CBS) uses three age groups: 0-20, 20-65, and 65+, with a ratio of 1: 2,57: 0,811 (CBS, 2012b). Furthermore, previous research on the WTP has shown a higher WTP among older people (Reynisdottir *et al.*, 2008; Bowker, Cordell & Johnson, 1999 in Reynisdottir *et al.*, 2008). The age of the respondents is measured by using an open question “age:” with a place to write down the age “in years”.

#### Education level

Education level is included because previous research has shown that a higher education level relates to a higher WTP (Reynisdottir *et al.*, 2008; Bowker *et al.*, 1999 in Reynisdottir *et al.*, 2008). Highest finished education is measured by using a multiple choice question, “What is your highest finished education?”, with a single answer for the categories “primary school”, “secondary school”, “MBO” (middelbaar beroepsonderwijs), “HBO” (hoger beroepsonderwijs) and “university or higher”.

#### Income level

Income is included because previous research has shown that the income level influences the level of WTP but also the behaviour of visiting areas where a fee has to be paid (Huhtala & Pouta, 2008; Reynisdottir *et al.*, 2008; Bowker *et al.*, 1999 in Reynisdottir *et al.*, 2008). Income of the respondents is measured by using a multiple choice question, “What is your gross income?”, with a single answer for the categories “0-25.000 euro”, “25.000- 50.000 euro”, “50.000 euro- 75.000” and “75.000- or more”. A multiple choice question is used instead of an open question to make the question more delicate and thereby to increase the response rate.

## **3.3 Sampling for quantitative research**

This Section will describe the research population (3.3.1), the estimated sample size (3.3.2) and what methods for data collection are used to collect a representative sample of the described research population (3.3.3).

### **3.3.1 Sample**

The research population for this study are all Dutch citizen who are older than 18 year. This study explores a behaviour where spending money is involved and from the age of 18, people are legally permitted to spend

money without the permission of their parents. Because the research population consists of all Dutch citizens it is not possible to select a sample from a list with email addresses of all the Dutch citizens older than 18 year. Such a list is simply not available.

### 3.3.2 Sample size

Due to time and money limitations it is realistic to have a target somewhere between 100 and 400 respondents. Dillman (2007 *in Vaske, 2008:180*) and Salant & Dillman (1994 *in Vaske, 2008:180*) report that around 400 completed questionnaires are needed for a confidence level of 95% with a 5% sampling error and around 100 completed questionnaires are needed for a 95% confidence level with a 10% sampling error.

### 3.3.3 Data collection

The data is collected in the first place via online questionnaires which has advantages over on-site questionnaires. Distribution of online questionnaires is cheap, fast, and via snowball effects a large group of the research population can be reached. Because in between results showed a relatively low average age, a high education level and a low income level among the participants the author decided also to collect onsite data. The onsite surveys were collected on a Tuesday of the autumn holiday in November 2012 at the visitor centre of national park De Veluwezoom in Rheden.

## 3.4 Data analysis

To test if the means of the dependent and independent variables of the online collected data and the onsite collected data differ an independent t-test was applied. Furthermore, the individual influences of the independent variables on the dependent variables were tested by using bivariate correlations. The total effect of more than one independent variable on the dependent variables were tested by applying linear regressions.

The outcomes of the bivariate correlations and linear regressions are interpreted by using the guidelines in Table 3.1 (Vaske, 2008).

Table 3.1 Effect sizes (Vaske, 2008:108)

Test	Effect size index	Small	Medium	Large
Pearson correlation	$r$	.10	.30	.50
Multiple correlation	R	.14	.36	.51

In Chapter 4 the results of the analysed data are presented.

## 4. Results

This chapter will first report the results of the elicitation study in Section 4.1. Findings of the salient behavioural outcomes (Section 4.1.1) and WTP (Section 4.1.2) are reported and those results were the input for the quantitative questionnaire. Section 4.2 continues with presenting the results of the quantitative analyses.

### 4.1 Elicitation results

In total 20 people participated in the elicitation study of which 11 were women and nine were men. The age range was between 18 – 81 year. After 13 participants hardly no new behavioural outcomes associated with paying for entering nature were found.

#### 4.1.1 Behavioural outcomes

The nine most often mentioned behavioural outcomes are included in the quantitative questionnaire (Table 4.1). Each behavioural outcome will be discussed and examples of quotes are included to show how the outcomes are grouped and interpreted.

Table 4.1 Behavioural outcomes

Belief	Number of times mentioned
1. Good facilities	11
2. Create high expectations	8
3. Well maintained site	13
4. Less vandalism	4
5. Attractive site	6
6. More visits to other free of charge sites	5
7. Changing ecological nature into amusement park nature	4
8. Create a barrier to visit nature	6
9. Less visits	9

#### Good facilities (Belief 1)

In total 11 people referred to the behavioural outcomes of having good facilities at the natural site when a fee is involved. Examples of quotes are “*I expect good facilities like trails for hiking and cycling*”, “*... then there are probably toilets and some place to have a bite*”, and “*... that there are good facilities for parking, but also toilets, recycle bins, and some form of information*”. Good facilities is a broad concept which covers everything which is not natural and contributes positively to the visit.

#### Create high expectations (Belief 2)

In total eight times higher expectations of the experience were mentioned when a fee is charged for entering nature. Examples of quotes are “*There must be something special otherwise it would be free, right?*”, and “*I expect something extra, it is probably not an ordinary forest*”. The visitors have a high expectation about the site and of the expected experience.

#### Well maintained site (Belief 3)

In total 13 people mentioned that they expected a well maintained site. Examples of quotes are “*I expect they can maintain the site better*”, and “*The maintenance will be good and responsible*”. A well maintained site refers to the maintenance of the natural site itself.

#### Less vandalism (Belief 4)

Less vandalism is mentioned by four participants. Examples of quotes are “*There is less vandalism because vandals do not want to pay*”, and “*I expect there is less vandalism*”. Vandalism is expected to occur less often in a site where a fee is charged. The kind of vandalism is not mentioned so *less vandalism* is included as a more general behavioural outcome.

#### Attractive site (Belief 5)

In total six participants mentioned that they expected an attractive site when they have to pay a fee. Examples of quotes are “*I expect that the fee contributes to create a more attractive natural landscape*”, and “*I expect an attractive site for me to recreate*”. An attractive natural site is expected.

#### More visitors to other free of charge sites (Belief 6)

Five participants expected that visitors will go to other sites where no fee is charged for entering the site. Examples of quotes are “*The alternative places to visit nature for free will attract more visitors*”, and “*Visitors go elsewhere to a site where visiting nature is still for free*”. People expect that people will go more often to a free of charge site instead of paying for entering nature. Their behaviour is expected to change when a fee is charged.

#### Changing ecological nature into amusement park nature (Belief 7)

In total four participants expected that ecological valuable nature will change into amusement park nature. Examples of quotes are “*The nature will be focussed on entertainment of the visitors and there will be less focus on the ecological values of nature*”, and “*The experience of nature is not real nature anymore*”. The focus of the natural site becomes attracting visitors. It is thought that the natural site management organisations shift from an ecological view towards the best circumstances for the visitor. Therefore nature is not ecological oriented but is consumption oriented.

#### Create a barrier to visit nature (Belief 8)

Six participants mentioned that a fee will create a barrier to visit nature. Examples of quotes are “*A fee for nature creates a high doorstep for a short walk into nature*”, and “*A barrier is created to recreate in a natural setting*”. A fee is referred to as a barrier for people to visit nature and to recreate in nature.

#### Less visits (Belief 9)

In total nine participants referred to the behavioural outcome less visits to the natural sites when a fee is charged. Examples of quotes are “*I will visit natural sites less often*”, and “*The visitor numbers will probably decrease*”. The behavioural outcome is less visits to the site when a fee is charged.

The nine above mentioned behavioural outcomes are found to be salient for the behaviour of paying for entering nature. The nine behavioural outcomes are the input for operationalizing the behavioural beliefs.

#### **4.1.2 WTP**

As already mentioned in Section 3.2.2 the elicitation study revealed problems for stating a bid level for entering nature. Participants reported this question was vague and that they did not know where they paid for and therefore could not state a bid. In order to solve problems of a too general description of the studied behaviour two descriptions of visits to nature were developed based on the outcome of the elicitation study. Those visits are defined as a *short visit* and on the other hand as *daytrip*. Characteristics of the two defined types of visits are given in Box 3.3 and Box 3.4.

## **4.2 Quantitative results**

This Section will report the results of the quantitative research. First, Section 4.2.1 elaborates on the exclusion of data due to reliability problems. Section 4.2.2 elaborates on the characteristics of the sample. In Section 4.2.3 the mean WTP is reported. This will be followed by providing results from the quantitative analysis. Section 4.2.4 elaborates on the attitude-intention relations. The results of both the direct and indirect measurement of attitude are presented. Section 4.2.5 reports results of the SN-intention relations. The relations of the descriptive SN, injunctive SN and the multiple correlation (injunctive SN and descriptive SN) are reported. Section 4.2.6 continues with reporting the results of the PBC-intention relations. Section 4.2.7 elaborates on the multiple relations of attitudes, SNs, and PBC with intentions to pay for entering nature. Two models of the TPB were tested where the directly measured attitude is replaced by the indirectly measured attitude. The results presented in Section 4.2.4 up to and including Section 4.2.7 contribute to answer the main research question. Two additional Sections are included in this Chapter to make extra notes beside answering the research questions. Therefore Section 4.2.8 reports the indirectly measured attitude-directly measured

attitude relation. And Section 4.2.9 reports the results of the relations of the behavioural beliefs and the intentions. The goal and relevance of the latter two Sections is further discussed in those two Sections.

#### 4.2.1 Excluded data

Intention to pay for entering nature and WTP for entering nature are measured for both a short visit and a daytrip. Due to the low number of positive responses (N=44) to paying for a short visit, the intention to pay and WTP for entering nature for a short visit were excluded from the analyses.

#### 4.2.2 Sample characteristics

In total 246 Dutch respondents completed the questionnaire, of which 168 participated online and 78 onsite. The means of both independent and dependent variables are assumed to be equal for  $p \geq .001$ . Therefore the collected data can be treated as one sample group.

The sex distribution of the sample is 45.9% men and 54.1% women, where two results were missing. Ages ranged from 18 till 81 with a mean of 38.1 year. The sex and age distribution are quite similar to the described distribution of the research population. The education level has a distribution of 0.0% primary school, 16.7% secondary school, 17.1% MBO (middelbaar beroepsonderwijs), 28.5% HBO (hoger beroepsonderwijs) and 27.8% University or higher. The income of the respondents is distributed with 56.6% 0-25.000 euro, 28.5% 25.000-50.000 euro, 9.6% 50.000-75.000 euro, and 5.3% 75.000 euro or more. The distributions of education level and income are far from representative for the research population. The implications of this non-normal distribution for generalizing the results of this study are further discussed in Chapter 6.

#### 4.2.3 WTP

A mean WTP of 4.83 euro (N= 243) was found for entering nature for a daytrip. The range was from a minimum of 0 euro to a maximum of 25 euro. The most frequently reported WTP levels for a daytrip were 0 euro (N= 71), 3 euro (N= 19), 5 euro (N= 65), and 10 euro (N= 32).

#### 4.2.4 Attitude-intention

The relations of both the direct and indirect measured attitude with the three different definitions of intentions are reported in Table 4.3. The results of each relation are reported per intention, in each subheading one relation with intention. In every subheading the relation of both the direct and indirect measured attitude is reported with the behavioural intention.

Table 4.2 Correlations attitude (direct and indirect) with intentions

Independent variable	Intention	Intention daytrip	WTP daytrip
Attitude (direct)	.726**	.451**	.401**
Attitude (indirect)	.384**	.419**	.275**

\*\* significant at  $p < .01$  one-tailed

Note. Values are Pearson correlation coefficients

##### Attitude-intention

Attitudes toward paying for entering nature are positively associated with intention to pay for entering nature (Table 4.3). The more positive someone's attitude towards paying for entering nature, the stronger the intention to pay for entering nature. This positive relation was found for both the directly measured attitude ( $r = .726, p < .01$ ) and the indirectly measured attitude ( $r = .384, p < .01$ ). The direct single item measurement of attitude is a much better predictor of intentions to pay for entering nature than the indirect measurement if attitude which is based on the perceived strength and evaluation of the salient behavioural outcomes.

##### Attitude-intention daytrip

Attitudes toward paying for entering nature are positively associated with intentions to pay for entering nature for a daytrip (Table 4.3). The more positive attitude toward paying for entering nature, the stronger the intention to pay for entering nature for a daytrip is. This positive relation was found for both the directly measured attitude ( $r = .451, p < .01$ ) and the indirectly measured attitude ( $r = .419, p < .01$ ). The direct single item measurement of attitude is a slightly better predictor of intention to pay for entering nature for a daytrip than the indirect multiple item measurement of attitude.

### Direct attitude-WTP daytrip

Attitudes toward paying for entering nature are positively associated with WTP level for entering nature for a daytrip (Table 4.3). The more positive the attitude towards paying for entering nature, the higher the intended fee level to pay for entering nature for a daytrip is. This positive relation was found for both the directly measured attitude ( $r = .401, p < .01$ ) and the indirectly measured attitude ( $r = .275, p < .01$ ). The direct single item measurement of attitude is a much better predictor of the intended fee level to pay for entering nature for a daytrip than the indirect multiple item measurement of attitude.

### 4.2.5 SN-intention

The single and multiple relations of the two SNs (injunctive and descriptive) with the three different definitions of intentions are reported in Table 4.4. The results of each relation are reported per intention. Three subheadings which each report the results of the two individual relations of the two measurements of SN and one multiple-item correlation with the three measured intentions.

Table 4.3 Correlations SNs with intention

Independent variables	Intention	Intention daytrip	WTP daytrip
1. Injunctive SN	.531**	.411**	.309**
2. Descriptive SN	.527**	.446**	.341**
3. Inj SN and Desc SN	.589** (inj .330***, des .325***)	.475*** (inj .221**, des .306***)	.364*** (inj .244**, des .158*)

\* significant at  $p < .05$

\*\* significant at  $p < .01$

\*\*\* significant at  $p < .001$

Note. The reported values are Pearson correlation coefficients, R or  $\beta$ 's.

### SN-intention

SNs toward paying for entering nature are positively associated with the intention to pay for entering nature (Table 4.4). The more positive the SN toward paying for entering nature, the stronger the intention to pay for entering nature. This positive relationship was found for both the injunctive SN ( $r = .531, p < .01$ ) and the descriptive SN ( $r = .527, p < .01$ ). The perceived approval of important others (injunctive SN) toward paying for entering nature is a slightly better predictor of intention to pay for entering nature than the observed or inferred actions of important others (descriptive SN) of paying for entering nature.

Injunctive SN and descriptive SN together are also positively associated with the intention to pay for entering nature ( $R = .589, p < .01$ ). Injunctive SN and descriptive SN together are found to be a better predictor of intention to pay for entering nature than both the individual injunctive SN and descriptive SN.

### SN-intention daytrip

SNs toward paying for entering nature are positively associated with the intention to pay for entering nature for a daytrip (Table 4.4). The more positive the SNs toward paying for entering nature, the stronger the intention to pay for entering nature for a daytrip. This positive relationship was found for both the injunctive SN ( $r = .411, p < .01$ ) and the descriptive SN ( $r = .446, p < .01$ ). The observed or inferred actions of important others (descriptive SN) of paying for entering nature is a better predictor of intention to pay for entering nature than the perceived disapproval of important others (injunctive SN) towards paying for entering nature.

Injunctive SN and descriptive SN together are also positively associated with the intention to pay for entering nature ( $R = .475, p < .001$ ). Injunctive SN and descriptive SN together are found to be a better predictor of intention to pay for entering nature than both the individual injunctive SN and descriptive SN.

### SN-WTP daytrip

SNs toward paying for entering nature are positively associated with the WTP level for entering nature for a daytrip (Table 4.4). The more positive the SNs toward paying for entering nature, the higher the intended fee

level to pay for entering nature for a daytrip. This positive relationship was found for both the injunctive SN ( $r = .309, p < .01$ ) and the descriptive SN ( $r = .341, p < .01$ ). The observed or inferred actions of important others (descriptive SN) of paying for entering nature is a better predictor of intended fee level to pay for entering nature than the perceived disapproval of important others (injunctive SN) towards paying for entering nature.

Injunctive SN and descriptive SN together are also positively associated with the intended fee level to pay for entering nature ( $R = .364, p < .001$ ). Injunctive SN and descriptive SN together are found to be a better predictor of the intended fee level to pay for entering nature than the individual injunctive SN and descriptive SN.

#### 4.2.6 PBC-intention

The relations of PBC with the three different definitions of intentions are reported in Table 4.5. All those relations are discussed separately.

Table 4.4 Correlations PBC with intentions

Independent variable	Intention	Intention daytrip	WTP daytrip
PBC	-0.320 **	-0.134*	-0.115 *

\* significant at  $p < .05$  one tailed

\*\* significant at  $p < .01$  one-tailed

Note. Values are Pearson correlation coefficients

##### PBC-intention

PBC over paying for entering nature is negatively associated with intention to pay for entering nature. The higher the perceived level of control over paying for entering nature, the lower the intention to pay for entering nature ( $r = -0.320, p < .01$ ).

##### PBC-intention daytrip

PBC over paying for entering nature is negatively associated with intention to pay for entering nature for a daytrip. The higher the perceived level of control over paying for entering nature, the lower the intention to pay for entering nature for a daytrip ( $r = -0.134, p < .05$ ).

##### PBC-WTP daytrip

PBC over paying for entering nature is negatively associated with the intended fee level to pay for entering nature for a daytrip. The higher the perceived level of control over paying for entering nature, the lower the intended fee level to pay for entering nature for a daytrip is ( $r = -0.115, p < .05$ ).

#### 4.2.7 Multiple item correlations with intention

In this Section two different models which include different measured independent variables of the TPB are tested. The models always include injunctive SN, descriptive SN and PBC. Model 1 includes also the direct measured attitude. And Model 2 includes also the indirect measured attitude. The first part reports the relations of both Models with the general behavioural intention. In the second part the relations of both Models with the intention to pay for entering nature during a daytrip are presented. The third and final part reports the relations of both Models with the intended level of WTP for entering nature during a daytrip.

Table 4.5 Correlation Model 1 and Model 2 with intentions

Model	Intention	Intention daytrip	WTP daytrip
1.	<b>.771***</b>	<b>.533***</b>	<b>.443***</b>
Direct Att	.571***	.302***	.313***
Inj SN	.135*	.121	.057
Des SN	.158**	.227**	.162*
PBC	-0.062	.046	.033
2.	<b>.658***</b>	<b>.565***</b>	<b>.411***</b>
Indirect Att	.219***	.312***	.183**
Inj SN	.261***	.158*	.110
Des SN	.282***	.261***	.226**
PBC	-0.178**	-0.019	-0.035

\*\* significant at  $p < .01$

Note. Model 1= Direct Att, Inj SN, Des SN and PBC; Model 2= Indirect Att, Inj SN, Des SN and PBC

Values are R or  $\beta$ .

#### Attitude, injunctive SN, descriptive SN, and PBC-intention

Together, attitude, injunctive SN and descriptive SN toward paying for entering nature are positively associated with the intention to pay for entering nature, while PBC negatively is associated with intention to pay for entering nature for a daytrip (Table 4.6). The more positive the attitude, perceived approval of important others (injunctive SN), observed or inferred actions of important others (descriptive SN), and the lower the perceived level of control over paying for entering nature, the higher the intention to pay for entering nature. Those relations were found for both Model 1 ( $R = .771, p < .001$ ) which includes the direct measurement of attitude, and Model 2 ( $R = .658, p < .001$ ) which includes the indirect measurement of attitude. Noteworthy, the perceived level of control over paying for entering nature is excluded in model 1 due to a non-significance contribution, while the perceived level of control over paying for entering nature significantly contributes in Model 2 in predicting the intention to pay for entering nature. The combined effect size of the directly measured attitude, injunctive SN and descriptive SN (Model 1) predict intention to pay for entering nature much better than the combined indirect measured attitude, injunctive SN, descriptive SN, and PBC (Model 2).

#### Attitude, injunctive SN, descriptive SN, and PBC-intention daytrip

Together, attitude, injunctive SN and descriptive SN toward paying for entering nature are positively associated with the intention to pay for entering nature for a daytrip, while the direction of the relationship of PBC with intention to pay for entering nature for a daytrip is unclear (Table 4.6). The more positive attitude, perceived approval of important others (injunctive SN), observed or inferred actions of important others (descriptive SN) toward paying for entering nature, the higher the intention to pay for entering nature for a daytrip. Those positive relationships were found for both model 1 ( $R = .533, p < .001$ ) which includes the direct measurement of attitude, and model 2 ( $R = .565, p < .001$ ) which includes the indirect measurement of attitude. PBC does not contribute in both Models in predicting intention to pay for entering nature for a daytrip, due to the non-significant contribution. Injunctive SN is found to be non-significant in Model 1. The effect size of the indirectly measured attitude, injunctive SN and descriptive SN (Model 2) predict intention to pay for entering nature for a daytrip better than the direct measured attitude and descriptive SN (Model 1).

#### Attitude, injunctive SN, descriptive SN, and PBC-WTP daytrip

Together, attitude and descriptive SN toward paying for entering nature are positively associated with the intended fee level to pay for entering nature for a daytrip (Table 4.6). The more positive attitude and observed or inferred actions of important others toward paying for entering nature (descriptive SN), the higher the intended fee level to pay for entering nature for a daytrip. This positive relationship was found for both model 1 ( $R = .443, p < .001$ ) which includes the direct measure of attitude, and model 2 ( $R = .441, p < .001$ ) which includes the indirect measure of attitude. Due to the non-significant contribution, PBC and injunctive SN have no significant relation in both Models with the intended fee level to pay for entering nature for a daytrip. Noteworthy, the direct measurement of attitude and descriptive SN (Model 1) predict the intended fee level to pay for entering nature for a daytrip better than the indirectly measured attitude and descriptive SN (Model 2).

#### **4.2.8 Indirect attitude-attitude**

Two different operationalizations of attitude are used in this study. According to the literature of the TPB those two concepts of attitude should measure the same thing. The relationship of the indirectly measured attitude and the directly measured attitude shows to what extent those two constructs measure the same. The relation of the indirect attitude and the direct attitude is  $r = .345$  ( $p < .01$  one-tailed). This implies that those two constructs of attitude measure to a large extent different things. The implications of this finding are discussed in Chapter 6.

#### **4.2.9 Beliefs-intention**

This Section will presents which beliefs are strong predictors of the behavioural intentions. Explaining this relation was not one of the main goals of this study. However, the results can be very interesting for both practical use and scientifically. The practical use is identifying how to influence the intentions to pay for

entering nature in the most effective way. If only a few beliefs predict the intention to pay very well, it is very effective to influence those few beliefs in order to create a change in the intention to pay. With this information natural site management organisations can very effectively influence the intention to pay and can increase their revenue. The scientific relevance of knowing how the intentions to pay for entering nature are influenced is by identifying the salient beliefs involved with paying for entering nature. By identifying which beliefs about paying for entering for nature contribute significant in the prediction of the behavioural intentions to pay for entering nature, only those beliefs can be included in future research.

In this Section, the relationships of the nine beliefs toward paying for entering nature with the behavioural intention to pay for entering nature were reported. Continuing with the relationships of the nine beliefs toward paying for entering nature with the behavioural intention to pay for entering nature for a daytrip. Third, the relationships of the nine beliefs toward paying for entering nature with the intended fee level to pay for entering nature for a daytrip are reported.

Table 4.6 Correlations belief 1-9 with intentions

	Intention	Intention daytrip	WTP daytrip
Belief 1-9	<b>.569***</b>	<b>.523***</b>	<b>.447***</b>
<i>Belief 1</i>	.030	-0.082	-0.040
<i>Belief 2</i>	.072	.149*	.143*
<i>Belief 3</i>	-0.033	.041	-0.018
<i>Belief 4</i>	.042	.137*	.127
<i>Belief 5</i>	.127	.056	-0.053
<i>Belief 6</i>	-0.124*	-0.027	-0.068
<i>Belief 7</i>	.047	.200**	.159*
<i>Belief 8</i>	.396***	.284***	.321***
<i>Belief 9</i>	.105	.048	-0.052

\* significant at  $p < .05$  (one-tailed)

\*\* significant at  $p < .01$  (one-tailed)

\*\*\* significant at  $p < .001$  (one-tailed)

Note. Values are R or  $\beta$ .

Belief 1= Good facilities; Belief 2= Create high expectations; Belief 3= Well maintained site; Belief 4= Less vandalism; Belief 5= Attractive site; Belief 6= More visits to other free of charge sites; Belief 7= Changing ecological nature into amusement park nature; Belief 8= Create a barrier to visit nature; Belief 9= Less visits.

#### Belief 1, 2, 3, 4, 5, 6, 7, 8 and 9-intention

Together, *create a barrier to visit nature* (Belief 8) and *more visits to other free of charge natural sites* (Belief 6) when a fee has to be paid when nature wants to be entered are positively associated with the intention to pay for entering nature (Table 4.7). A positive relationship was found for Belief 8 ( $\beta = .396, p < .001$ ), and a negative relationship was found for Belief 6 ( $\beta = -0.124, p < .05$ ) with the intention to pay for entering nature.

The behavioural outcome, *create a barrier to visit nature* (Belief 8) is positively associated with the behavioural intention to pay for entering nature. The more someone expects the creation of a barrier to visit nature when has to paid for entering nature, the higher the intention to pay for entering nature. The behavioural outcome of *more visits to other free of charge natural sites* (Belief 6) is negatively associated with the behavioural intention to pay for entering nature. The more someone expects to visit other free of charge natural sites, the lower the intention to pay for entering nature. Noteworthy, the effect size of Belief 8 was much larger than the effect size of Belief 6. This means that Belief 8 contributes to a much larger extent than Belief 6 in the prediction of intention to pay for entering nature. Beliefs 1 up to and including 5, 7 and 9 are not significant in predicting the intention to pay for entering nature.

#### Belief 1,2,3, 4, 5, 6, 7, 8 and 9-intention daytrip

Together *create high expectations* (Belief 2), *less vandalism* (Belief 4), *changing ecological nature into amusement park nature* (Belief 7), and *create a barrier to visit nature* (Belief 8) when a fee has to be paid when nature wants to be entered are positively associated with the intention to pay for entering nature for a daytrip (Table 4.7). Positive relationships were found for Belief 2 ( $\beta = .149, p < .05$ ), Belief 4 ( $\beta = .137, p < .05$ ), Belief 7 ( $\beta = .200, p < .01$ ) and Belief 8 ( $\beta = .284, p < .001$ ) with the intention to pay for entering nature for a daytrip.

The behavioural outcome of create high expectations (Belief 2) when a fee has to be paid is positively associated with the behavioural intention to pay for entering nature for a daytrip. The higher the expectations of the visit, the higher the intention to pay for entering nature for a daytrip. The behavioural outcome of less vandalism (Belief 4) is positively associated with the behavioural intention to pay for entering nature for a daytrip. The less vandalism, the higher the intention to pay for entering nature for a daytrip. The behavioural outcome of changing ecological nature into amusement park nature (Belief 7) is positively associated with the behavioural intention to pay for entering nature for a daytrip. The more someone expect the change of ecological nature into amusement park nature, the higher the intention to pay for entering nature for a daytrip. The behavioural outcome of create a barrier to visit nature (Belief 8) is positively associated with the behavioural intention to pay for entering nature for a daytrip. The more someone expect the creation of a barrier to visit nature when has to paid for entering nature, the higher the intention to pay for entering nature. Noteworthy, the effect size of Belief 8 was larger than the effect sizes of Belief 2, Belief 4, and Belief 7. This means that Belief 8 contributes to a larger extent in the prediction of intention to pay for entering nature than the other significant beliefs. Belief 1, 3, 5, 6 and 9 are not significant in predicting the intention to pay for entering nature.

#### Belief 1,2,3, 4, 5, 6, 7, 8 and 9-intention daytrip

Together *create high expectations* (Belief 2), *changing ecological nature into amusement park nature* (Belief 7), and *create a barrier to visit nature* (Belief 8) when a fee has to be paid when nature wants to be entered are positively associated with the intended fee level to pay for entering nature for a daytrip (Table 4.7). Positive relationships were found for Belief 2 ( $\beta = .143, p < .05$ ), Belief 7 ( $\beta = .159, p < .05$ ) and Belief 8 ( $\beta = .321, p < .01$ ) with the WTP level for a daytrip.

The behavioural outcome of create high expectations when a fee has to be paid (Belief 2) is positively associated with the behavioural intention to pay a fee for entering nature for a daytrip. The higher the expectations of the visit, the higher the intended fee level to pay for entering nature for a daytrip. The behavioural outcome of changing ecological nature into amusement park nature (Belief 7) is positively associated with the behavioural intention to pay a fee for entering nature for a daytrip. The more someone expects the change of ecological nature into amusement park nature, the higher the intended fee level to pay for entering nature for a daytrip. The behavioural outcome of create a barrier to visit nature (Belief 8) is positively associated with the behavioural intention to pay a fee for entering nature for a daytrip. The more someone expects the creation of a barrier to visit nature when has to paid for entering nature, the higher the intended fee level to pay for entering nature for a daytrip. Beliefs 1, 3 up to and including 6, and 9 are not significant in predicting the intention to pay for entering nature.

In the following Chapter the results which are presented in this Chapter are compared and interpreted, resulting in the research conclusions.

## 5. Conclusion

The main objective of this study was to get a better understanding of how the psychological concepts of the TPB predict to the intention to pay a certain fee level for entering nature. A qualitative research design was applied in order to find behavioural outcomes for the behaviour of paying for entering nature. Further, a quantitative research design was applied to study the relations between the independent variables (directly measure attitude, indirectly measure attitude, injunctive SN, descriptive SN and PBC) and the dependent variables (intention to pay for entering nature, intention to pay for entering nature for a daytrip, and WTP for entering nature for a daytrip). This study contributes to the empirical knowledge of the TPB as theory but also as applied theory in explaining the variance of a fee level for entering nature for a daytrip.

Section 5.1 presents the conclusions of the main research question. Section 5.1.1 elaborates on how to influence the intention to pay for entering nature, Section 5.1.2 elaborates on how to influence the intention to pay for entering nature for a daytrip, and Section 5.1.3 elaborates on how to influence the WTP level for entering nature for a daytrip. This will be followed by Section 5.2 in which the sub research questions are answered.

### 5.1 Main conclusions

Individually all concepts of the TPB contribute significantly in explaining the variance of the general behavioural intention to pay for entering nature, the intention to pay for entering nature for a daytrip and the WTP level for entering nature for a daytrip (with at least  $p < .05$ ). The direction for the attitude-intention and SN-intention relations was found to be positive while a negative direction was found for the PBC-intention relation. The more positive attitudes, the stronger the perceived approval of important others (injunctive SN), and the larger the observed or inferred actions of important others (descriptive SN), the higher the intention to pay is. A high perceived level of control over paying for entering nature, result in low intentions to pay.

#### 5.1.1 Predicting intention to pay for entering nature

Together the direct attitude, injunctive SN and descriptive SN explain 59.4% of the variance of the behavioural intention to pay for entering nature. The direct attitude ( $\beta = .571, p < .001$ ), injunctive SN ( $\beta = .135, p < .05$ ) and descriptive SN ( $\beta = .158, p < .01$ ) are positively associated with the intention to pay for entering nature (Table 4.6).

This means the more positive ones attitude, the more likely it is that one intends to pay. Also the more positive ones perception of approval by important others (injunctive SN), the more likely it is that one intends to pay. And finally also the more positive ones observed or inferred actions of important others (descriptive SN), this will result in the more likely it is that one intends to pay. Ones perceived level of control over paying for entering nature does not significantly contributes in this relation in predicting the intention to pay for entering nature. The direct attitude, injunctive SN and descriptive SN are better in predicting the intention to pay for entering nature than the indirect attitude, injunctive SN, descriptive SN, and PBC (43.4% explained variance). Although both relations are substantial in predicting the intention to pay for entering nature, the first relation explains more of the intention to pay for entering nature.

#### 5.1.2 Predicting intention to pay for entering nature for a daytrip

Together the indirect attitude, injunctive SN and descriptive SN predict 31.9% of the variance of the intention to pay for entering nature for a daytrip. The indirect attitude ( $\beta = .312, p < .001$ ), injunctive SN ( $\beta = .158, p < .05$ ) and descriptive SN ( $\beta = .261, p < .001$ ) are positively associated with the intention to pay for entering nature for a daytrip (Table 4.6). This means the more positive ones indirectly measured attitude, the more likely it is that someone intends to pay for a daytrip. Also the more positive ones perception of approval by important others (injunctive SN), the higher the likelihood that someone intends to pay for a daytrip. And finally also the more positive ones observed or inferred actions of important others (descriptive SN), this will result in the more likely it is that one intends to pay for a daytrip. Ones perceived level of control over paying for entering nature for a daytrip does not significantly contribute in predicting the intention to pay for entering nature for a daytrip. The indirect attitude, injunctive SN and descriptive SN are better in predicting the intention to pay for entering nature for a daytrip than the direct attitude and descriptive SN (28.4% of explained variance). Both

relations are substantial in predicting the intention to pay for entering nature for a daytrip, although the indirect attitude, injunctive SN and descriptive SN explain more of the intention to pay for entering nature.

Including the indirect attitude measured which is the sum of the perceived strength and evaluation of the salient behavioural outcomes instead of the directly measured attitude in the multiple correlation increases the predictive value for the intention to pay for entering nature for a daytrip. However, the direct attitude in the single relation with intention to pay for a daytrip relate stronger than the indirect attitude ( $r = .451$  versus  $r = .419$ , both  $p < .01$ ).

### **5.1.3 Predicting the WTP level for entering nature for a daytrip**

Together the direct attitude and descriptive SN explain 19.6% of the variance of the intended fee level to pay for entering nature for a daytrip. The direct attitude ( $\beta = .313$ ,  $p < .001$ ), and descriptive SN ( $\beta = .162$ ,  $p < .05$ ) are positively associated with the intended fee level to pay for entering nature for a daytrip (Table 4.6). This means the more positive someone's attitude, the more likely it is that one intends to pay a higher fee level. Also the more positive someone's observed or inferred actions of important others (descriptive SN), the more likely it is that one intends to pay a higher fee level. Someone's perception of approval by important others (injunctive SN) and perceived level of control over paying for entering nature does not significantly contribute in this prediction. The direct attitude and descriptive SN are better in predicting the intended WTP level for entering nature than the indirect attitude and the descriptive SN (16.9% explained variance). Both relations are substantial in predicting the intended WTP level to pay for entering nature for a daytrip, although the direct attitude and descriptive SN explain more of the intended WTP level for entering nature.

## **5.2 Sub conclusions**

In Section 5.2.1 research question one is answered. This will be followed by Section 5.2.2 where research question two is answered and Section 5.2.3 where research question three is answered. Each Section follows the same structure. First the conclusions of the relations with the general behavioural intention to pay for entering nature are presented. This will be followed by the conclusions of the relations with the intention to pay for entering nature for a daytrip. The third Section consists of the conclusions of the relations with the WTP for entering nature for a daytrip.

### **5.2.1 Research question one**

Research question one aimed at identifying the extent of the influence of attitude on the different intentions. Both measurements of attitude toward paying for entering nature influence all three intentions positively (Table 4.3). This means the more positive someone's attitude towards paying for entering nature, the higher someone's intentions. The direct attitude is found to be the best predictor in all three predictions of intention. Direct attitude explains respectively 52.7%, 20.3% and 16.1% of the intention to pay, the intention to pay for a daytrip and the intended fee level to pay for a daytrip. The effect size of the direct attitude on the intentions is substantially larger than the effect size of the indirect attitude.

### **5.2.2 Research question two**

Research question two aimed at identifying the extent of the influence of the injunctive and descriptive measurement of SN on the different intentions. Both measurements of SN toward paying for entering nature influence all three intentions positively (Table 4.4). The injunctive SN and descriptive SN together have a larger influence than the individual concepts have on the three different intentions. This means the more positive one's perception of approval by important others and the more positive observed or inferred actions of important others, the higher someone's intentions. Respectively together injunctive SN and descriptive SN explain 34.7%, 22.6% and 13.2% of the intention to pay, the intention to pay for a daytrip, and the intended fee level to pay for a daytrip. The effect size of the combination of one's perception of approval by important others (injunctive SN) and the observed or inferred actions of important others (descriptive SN) is larger than the individual effect size of one of those concepts in predicting the three intentions.

### **5.2.3 Research question three**

Research question three aimed at identifying the extent of the influence of PBC on the different intentions. PBC over paying for entering nature influence all three intentions negatively (Table 4.4).

The higher ones perceived level of control, the lower the lower someone's intention. PBC explains respectively 9.6%, 1.8% and 1.3% of the intention to pay for entering nature, the intention to pay for entering nature during a daytrip and the intended WTP level for entering nature during a daytrip. The effect size of the level of perceived control on the intentions is small to very small.

### 5.3 Additional conclusions

No research question was included which aimed at identifying the extent of the influence of individual behavioural beliefs on the different intentions. Those results are for both practical and scientifically matter interesting. Therefore this Section presents the conclusions of the relations of the individual behavioural beliefs with the three defined intentions. Each Section follows the same structure. First the conclusions of the relations with the general behavioural intention to pay for entering nature are presented. This will be followed by the conclusions of the relations with the intention to pay for entering nature for a daytrip. The third Section consists of the conclusions of the relations with the WTP for entering nature for a daytrip.

#### 5.3.1 Beliefs-intention

Together Belief 6 and 8 predict 32.4% of the intention to pay for entering nature (Table 4.7). The other 7 Beliefs (*good facilities, create high expectations, well maintained site, less vandalism, attractive site, changing ecological nature into amusement park nature, and less visits*) were found to be not significant in predicting the intention to pay.

Visiting other free of charge natural sites (Belief 6) is negatively associated with the intention to pay for entering nature ( $\beta = -0.124, p < .05$ ). This means the stronger someone's behavioural outcome of more visits to other free of charge natural sites when a fee is charged, the lower someone intends to pay for entering nature. Barriers to visit nature (Belief 8) are positively associated with the intention to pay ( $\beta = .396, p < .001$ ). This means the stronger ones behavioural outcome of a barrier which is created to visit nature when a fee is charged, the higher the intention of someone to pay for entering nature.

Employing measurements for influencing the intention to pay are most effective by a change in Belief 6 and 8 due to the large effect size of those Beliefs of 32.4% on this intention. For an increase in the intention to pay for entering nature, the perception of creating barriers must be increased and/or the perception of visiting other free of charge sites must be decreased.

#### 5.3.2 Beliefs-intention daytrip

Together Belief 2, 4, 7 and 8 predict 27.4% of the intention to pay for entering nature for a daytrip. The other 5 Beliefs (*good facilities, well maintained site, attractive site, more visits to other free of charge sites, and less visits*) were found to be not significant in predicting the intention to pay for entering nature for a daytrip.

High expectations of a visit to nature (Belief 2) are positively associated with the intention for a daytrip ( $\beta = .149, p < .05$ ). This means the higher the expectations of the visit, the higher the intention of someone to pay for entering nature for a daytrip. A low level of vandalism (Belief 4) is positively associated with the intention to pay for entering nature for a daytrip ( $\beta = .137, p < .05$ ). This means the lesser vandalism, the more someone intends to pay for entering nature for a daytrip. A change of ecological nature into amusement park nature (Belief 7) is positively associated with the intention to pay for entering nature for a daytrip ( $\beta = .200, p < .01$ ). The more someone expects the change of ecological nature into amusement park nature when a fee has to be paid, the more someone intends to pay for entering nature for a daytrip. Barriers to visit nature (Belief 8) are positively associated with the intention to pay for entering nature for a daytrip ( $\beta = .284, p < .001$ ). The more someone expects the creation of a barrier to visit nature when has to paid for entering nature, the higher the intention to pay for entering nature for a daytrip.

Employing measurements for influencing the intention to pay for entering nature for a daytrip are most effective by a change in Belief 2, 4, 7 and 8 due to the large effect size of those Beliefs of 27.4% on this intention. For an increase in the intention to pay for entering nature for a daytrip one or more of the following behavioural outcomes must be increased: the expectations of the visit, the perceived level of vandalism, the perceived change of ecological nature into amusement park nature and the perception of creating barriers.

### 5.3.3 Beliefs-WTP daytrip

Together Belief 2, 7 and 8 predict 20.0% of the intended fee level to pay for entering nature for a daytrip. The other 6 Beliefs (*good facilities, well maintained site, less vandalism, attractive site, more visits to other free of charge sites, and less visits*) were found to be not significant in predicting the intention to pay for entering nature for a daytrip.

High expectations of a visit to nature (Belief 2) are positively associated with the intended fee level ( $\beta = .143, p < .05$ ). This means the higher the expectations of a visit, the higher the intended fee level to pay for entering nature for a daytrip. A change of ecological nature into amusement park nature (Belief 7) is positively associated with the intended fee level ( $\beta = .159, p < .05$ ). This means the more someone expects the change of ecological nature into amusement park nature, the higher the intended fee level to pay for entering nature for a daytrip. Barriers to visit nature (Belief 8) are positively associated with the intended fee level ( $\beta = .321, p < .001$ ). The more someone expects the creation of a barrier to visit nature when a fee has to be paid for entering nature, the higher the intended fee level to pay for entering nature for a daytrip.

Employing measurements for influencing the intention to pay for entering nature for a daytrip are most effective by a change in Belief 2, 7 and 8 due to the effect size of those Beliefs of 20.0% on the intention. For an increase in the intended WTP for entering nature for a daytrip one or more of the following perceptions of behavioural outcomes must be increased: the expectations of the visit, the perceived change of ecological nature into amusement park nature, and the perception of creating barriers.

Chapter 6 discusses the conclusions in relation with findings in the literature. The limitations of this study and applied methodology are also discussed and recommendations for future research are made.

## 6. Discussion

In this Chapter the research findings will be placed into context. Section 6.1 elaborates on the explanatory power of the TPB in explaining the variance of the WTP levels for nature. Section 6.2 compares the results of this study to results of other studies which applied the TPB to explain behavioural intentions. This will be followed by Section 6.3 which elaborates on the applied methodology. In Section 6.4 elaborates on the influence of factors such as education level and past experiences which could influence the WTP level and the implications to the presented results.

### 6.1 TPB applied to explain WTP for entering nature

This study found that attitudes (directly and indirectly measured) toward paying for entering nature are positively associated with intention to pay for entering nature. This finding is similar to the findings of Bernath & Roschewitz (2008) and Pouta & Rekola (2001), who also report positive associations of attitude towards paying for nature with the WTP.

Furthermore, this study found that both measurements of SN, injunctive and descriptive, towards paying for entering nature are positively associated with intention to pay for entering nature. Where Bernath & Roschewitz (2008) report a similar positive association of SN with WTP, Pouta & Rekola (2001) report no effect for the SN-WTP relation. An additional note has to be made for both studies: Pouta & Rekola (2001) included only questions to measure the injunctive SN. Bernath & Roschewitz (2008) included both the injunctive and the descriptive SN, however, the descriptive SN was not part of the analyses. The results of this study show that the role of descriptive SN is often larger and always contributes significant in predicting intention (Table 4.6). The role of injunctive SN is often smaller and not significant in predicting intention. Future research concerned with explaining the WTP or intention to pay for nature with the TPB, should include both a descriptive and injunctive measurement of SN to improve the explanatory power of the TPB.

It was also found that PBC over paying for entering nature is negatively associated with intention to pay for entering nature. This finding is contrary to the findings of Pouta & Rekola (2001), who found a positive relation

between PBC and WTP, and Bernath & Roschewitz (2008), who found no effect for the PBC-WTP relation. The role of PBC in the multiple correlations of predicting intention was found to be very small and very often not significant (Table 4.6). Those results seem to support the conclusion of Bernath & Roschewitz (2008) of a non-significant role of PBC in predicting the WTP. The positive PBC-WTP relation, found by Pouta & Rekola (2001) is contrary to the results of this study. Future research in explaining the WTP for entering nature should include a control concept in order to deal with possible control difficulties. A non-significant role of PBC in predicting intention is not a problem due to the exclusion of PBC when the behaviour is found to be volitional.

## 6.2 TPB

Explaining 59.4% of the variance of a behavioural intention by applying the concepts of the TPB is a large percentage (Vaske, 2008). The explained variance of 32.0% of the intention to pay for entering nature for a daytrip is smaller but still substantial. The explained variance of 19.6% of the WTP for a daytrip is again smaller but still substantial. A percentage of 59.4% is more explained variance than the founded mean explained variance in the literature. Armitage & Conner (2001) report a mean explained variance of 40.0% of the behavioural intention and Ajzen (1991) report a mean explained variance of 50.4% of intention.

The reported increasingly smaller explained variance for a more specified behavioural intention is remarkable (from 59.4% (intention to pay), to 32.0% (intention to pay for a daytrip), to 19.6% (WTP for a daytrip). As explained in Chapter 2, behaviour is defined in action, target, context and time elements. Those elements can vary from general to very specific. According to the principle of compatibility the concepts of the TPB all need to refer for all elements to the same level of specificity. The independent variables (indirect attitude, direct attitude, injunctive SN, descriptive SN and PBC) are measured toward the behaviour of paying for entering nature. For the independent variable intention to pay for entering nature no problems occur according the principle of compatibility. However, the other two dependent variables, intention to pay for daytrip and intended fee level to pay for a daytrip, are more specific. Possible due to problems with the principle of compatibility the explained variance of the latter two dependent variables is lower. Future research should check if the independent variables measure the same level of specificity of the elements of the dependent variable.

Attitudes can be summarized as the sum of the strength of the cognitive dimension multiplied with the evaluative dimension of beliefs about the behaviour. Based on this knowledge a (close to) perfect correlation of  $r = 1.00$  would be expected for the indirect measured attitude-direct attitude relation. However, only  $r = .345$  ( $p < .01$ ) was found for this relation. The direct attitude and the indirect attitude measure to a large extent different things. Clear reasons for this finding are absent but they may lie in the used methodology or in the theoretical assumption of how attitudes arise from behavioural beliefs. Solutions for improving this relation may possibly lie in the operationalization of the indirect attitude, which is further discussed in Section 6.3.

SN is suggested to be measured with an injunctive and a descriptive item, which should improve the prediction of intention (Armitage & Conner, 2001). This study supports this suggestion. Compared to injunctive SN the descriptive SN has a larger predictive value for the intention to pay for entering nature for a daytrip and the intended WTP level for entering nature for a daytrip. The suggestion of Armitage & Conner (2001) to include a descriptive dimension to improve the measurement of SN is partly supported with those findings.

## 6.3 Methodology

The large unexplained variance of the indirect attitude-direct attitude relation lies possibly in the operationalization of the indirect attitude. Possibly due the low number of participants in the elicitation study ( $N = 20$ ) less salient beliefs about paying for entering nature were found. It might be that salient beliefs were not found. For future research a large number of respondents for the elicitation study is suggested to improve the indirect attitude-direct attitude relation. The explanatory power is larger when this relation is larger due to the information the behavioural beliefs possess.

The online data collection is done via a distributed questionnaire which was sent to familiar people of the author of this study. Via snowball effect the questionnaire was distributed over a larger proportion of the population. Online 168 responses were collected and onsite another 78 completed questionnaires were handed in. The online data collection possibly biased the results in such a way that people who do not have access to internet cannot participate and the sample is not representative. The onsite data collection possibly biased the results because the data is collected on a parking lot in a national park. The onsite respondents have therefore in common that they all visit nature as recreational activity, while the research population does not necessarily all have visited nature. Nature visiting respondents can be over represented in the sample wherefore the results are not representative for the described research population (described in Section 3.3). For practical reasons future studies should identify users and non-users of nature for recreational activities.

## 6.4 Additional factors influencing WTP

Beliefs reflect the information people have about performing a behaviour. This information is developed via observation, interaction, learned observation and information (Fishbein & Ajzen, 1975). Education level, age and past experience can possibly explain for a part the level of information people possess and therefore also explain for a part the intended level of WTP.

The education level and the income level of the respondents can cause problems for generalizing the results of this study. The education level is very high and the income level of the respondents is rather low compared to the education level and income level of the research population. Due to time limitations the effects of the high education level and of the low income level are not tested. Previous research suggests that a high education level correlates with a higher WTP (Reynisdottir *et al.*, 2008; Bowker *et al.*, 1999 in Reynisdottir *et al.*, 2008). The results of the WTP in this study are therefore maybe higher than the WTP of the research population. Contrary to this, previous research on the income level and WTP relation suggest a low income level relates with a low WTP level (Huhtala & Pouta, 2008; Reynisdottir *et al.*, 2008; Bowker *et al.*, 1999 in Reynisdottir *et al.*, 2008). The results of the WTP are therefore possibly lower than the WTP of the research population.

Experiences during past behaviour can influence beliefs (Fishbein & Ajzen, 1975 in Mitchell & Carson, 1989) and therefore past behaviour is possible an important explanatory factor for differences in the WTP for entering nature. A moderator of PBC is the level of familiarity (Ajzen, 1991). Past experiences can increase the level of familiarity and therefore influence PBC and the relations PBC has with the behavioural intentions. Due to time limitations the effects of past experiences of visiting nature and paying for entering nature on the intention to pay and WTP for entering nature are not tested. This could be something that could be studied in future research.

The frequency of visiting nature has a possible relation with the level of WTP (Reynisdottir *et al.*, 2008; Ker & Manfredro, 1991; Kim & Crompton, 2002). The exact relation between the amount of visits and the level of WTP remains unclear, as Ker & Manfredro (1991) found a positive relation while Reynisdottir *et al.* (2008) and Kim & Crompton (2002) found a negative relation. Due to time limitations the effect of the frequency of visiting nature on the intention to pay and WTP to pay for entering nature are not tested. In future studies the effect of frequency of visitation to natural sites on the intention to pay for entering nature can be further explored.

Explanatory knowledge of how the TPB and the individual concepts of the TPB influence the intention to pay for entering nature, the intention to pay for entering nature for a daytrip and the intended WTP level for entering nature for a daytrip is extended. Although the discussed limitations of this study, the increased understanding of the relations contributes to an increased scientific knowledge of the TPB as model of explaining and predicting behavioural intentions and the TPB as applied model to explain the intention to pay for entering nature. Practical knowledge is increased by identifying the salient attitudes, behavioural beliefs and behavioural outcomes and their relations with the intention to pay for entering nature.

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## Appendix A Quantitative questionnaire

# RECREATIE IN DE NATUUR

Mijn naam is Johan Kuipers en ik ben bezig met mijn afstudeeronderzoek voor mijn Master Leisure, Tourism & Environment aan de Wageningen Universiteit. Met het beantwoorden van de vragen helpt u mij om mijn scriptie succesvol af te kunnen ronden. Het kost u ongeveer 5-10 minuten en u maakt kans op een boekenbon van 10 euro.

Het onderwerp van het onderzoek is recreëren in de natuur. De overheid is flink aan het bezuinigen op hun uitgaven, waardoor natuurorganisaties die de natuur beheren in geldnood komen. Dit onderzoek richt zich op de voordelen en nadelen die mensen ervaren bij het betalen voor toegang tot natuur. Natuur wordt omschreven als een natuurlijke locatie waar men heen gaat om te genieten van de natuurlijke kwaliteiten van de locatie. Er kunnen tal van recreatie activiteiten worden beoefend, zoals bijvoorbeeld wandelen, fietsen, mountainbiken, hardlopen, vogels kijken en picknicken. Maar het is belangrijk dat tijdens het bezoek de natuurlijke omgeving centraal staat.

Lees elke vraag goed door en beantwoord deze zoals u erover denkt. De antwoorden worden anoniem verwerkt. Er zijn geen goede of foute antwoorden, ik ben enkel geïnteresseerd in hoe u persoonlijk over bepaalde zaken denkt.

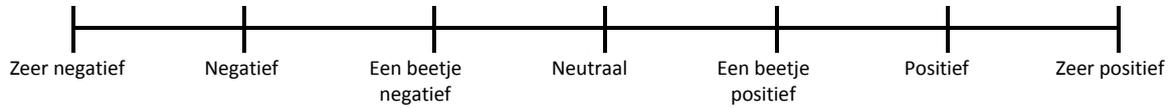
Als u alle vragen heeft beantwoord is er een mogelijkheid aan het eind van dit onderzoek om uw emailadres in te vullen en mee te dingen naar een boekenbon van 10 euro.

Alvast heel erg bedankt voor uw deelname.

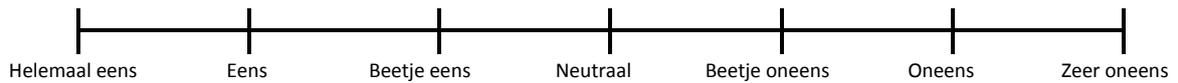
Johan Kuipers

A. Geef aan hoe u denkt over de volgende stellingen (*omcirkel uw antwoord*).

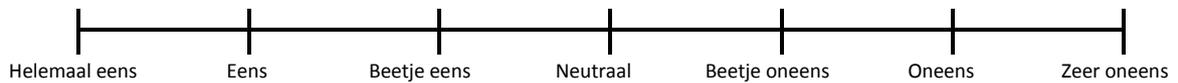
1. In hoeverre staat u positief dan wel negatief tegenover betalen voor toegang tot natuur?



2. Ik zou best willen betalen voor toegang tot natuur.

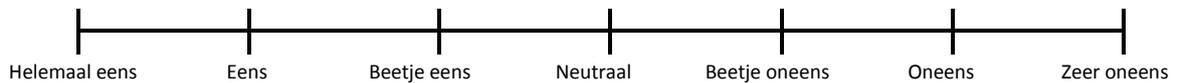


3. Ik beslis zelf of ik betaal voor toegang tot natuur.

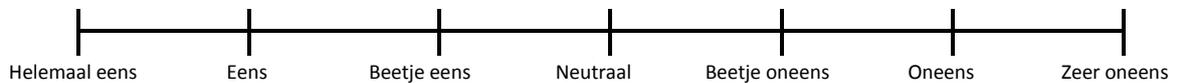


Er zijn wellicht individuen of groepen in ons leven die erg belangrijk voor ons zijn, deze mensen noemen we *voor jou belangrijke mensen*.

4. De meeste voor mij belangrijke mensen denken dat ik zou moeten betalen voor toegang tot natuur.

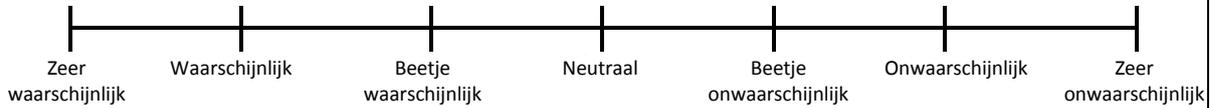


5. De meeste voor mij belangrijke mensen zouden bereid zijn te betalen voor toegang tot natuur.

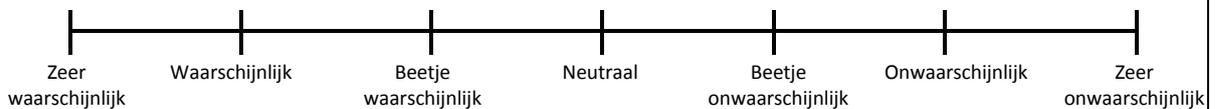


B. Geef aan in hoeverre u de onderstaande stellingen waarschijnlijk dan wel onwaarschijnlijk acht (omcirkel uw antwoord)

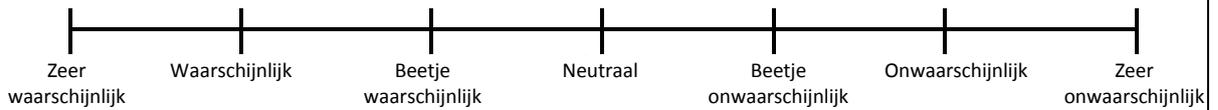
1. Als ik betaal voor toegang tot natuur dan resulteert dat in goede faciliteiten op de locatie (bijvoorbeeld: toilette, parkeerplaatsen, informatie, fiets en wandelpaden en routes)



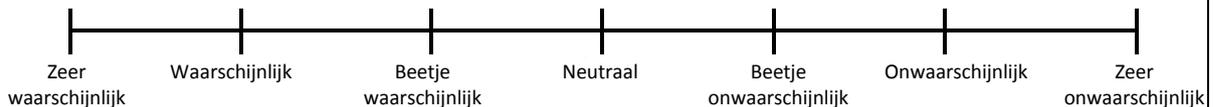
2. Als ik betaal voor toegang tot natuur dan resulteert dat erin dat ik met hoge verwachtingen naar de locatie toega.



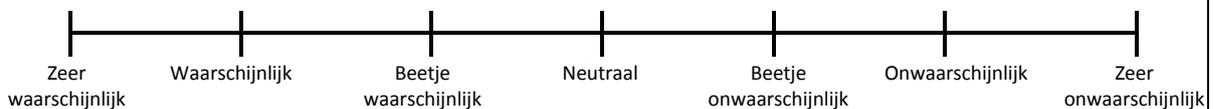
3. Als ik betaal voor toegang tot natuur dan resulteert dat in een goed onderhouden locatie.



4. Als ik betaal voor toegang tot natuur dan resulteert dat in een locatie met weinig vandalisme.

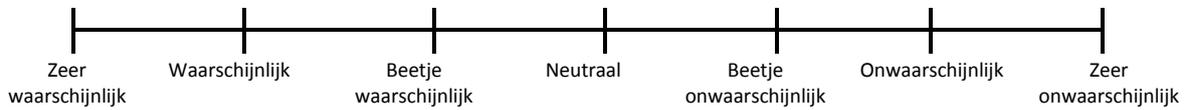


5. Als ik betaal voor toegang tot natuur dan resulteert dat in een aantrekkelijke locatie.

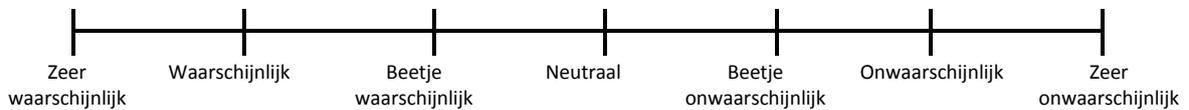


C. Geef aan in hoeverre u de onderstaande stellingen waarschijnlijk dan wel onwaarschijnlijk acht (omcirkel uw antwoord)

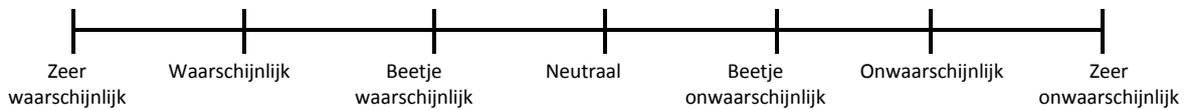
1. Als ik moet betalen voor toegang tot natuur dan resulteert dat in meer bezoeken aan andere locaties die wel gratis zijn.



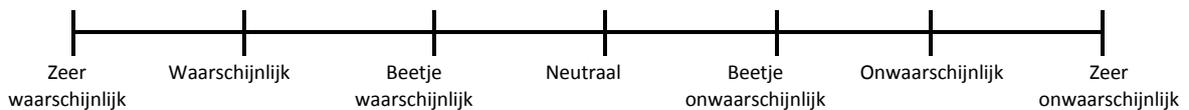
2. Als ik betaal voor toegang tot natuur dan resulteert dat in minder wilde natuur en meer in pretpark natuur.



3. Als ik moet betalen voor toegang tot natuur dan resulteert dat in een hogere drempel om natuur te bezoeken.

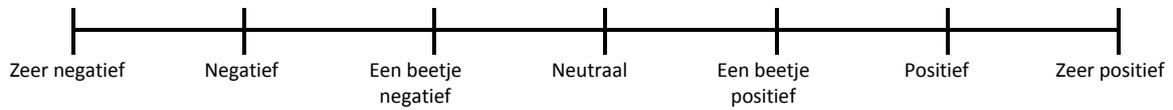


4. Als ik moet betalen voor toegang tot natuur dan resulteert dat in minder bezoeken aan natuur.

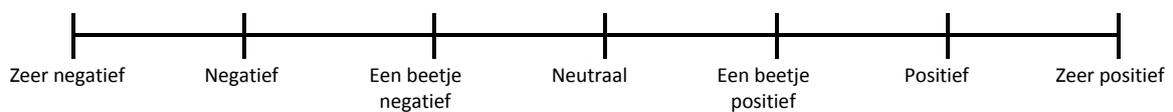


D. Geef aan in hoeverre u de volgende uitkomsten positief dan wel negatief acht voor u zelf  
(omcirkel uw antwoord)

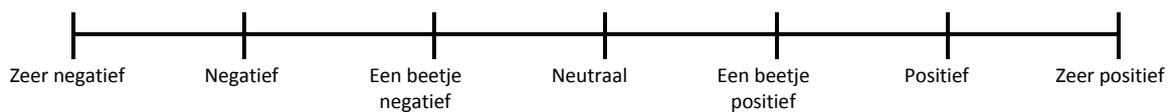
1. Goede faciliteiten bij natuur zijn voor mij...



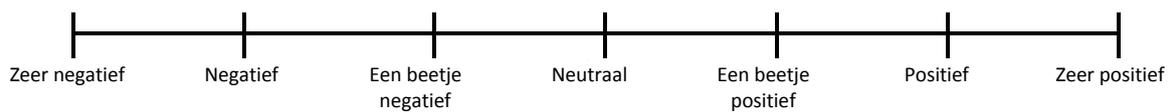
2. Met hoge verwachtingen naar natuur gaan is voor mij...



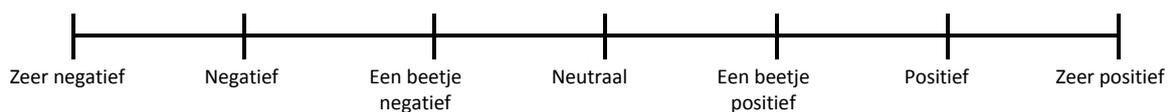
3. Goed onderhouden natuur is voor mij...



4. Minder vandalisme in natuur is voor mij...

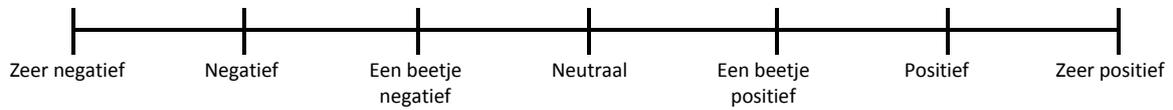


5. Aantrekkelijke natuur is voor mij...

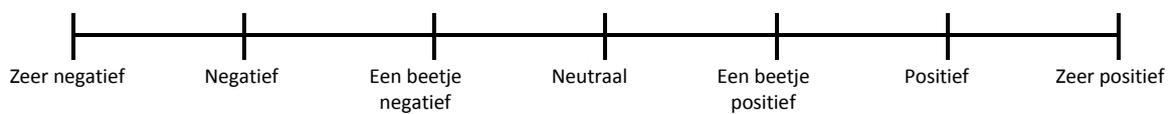


E. Geef aan in hoeverre u de volgende uitkomsten positief dan wel negatief acht voor u zelf.  
(omcirkel uw antwoord)

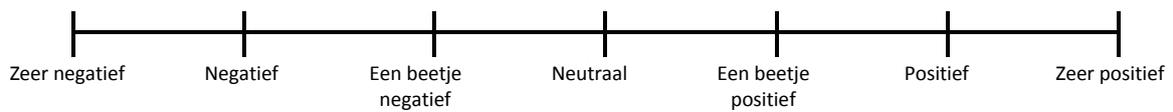
1. Het bezoeken van andere gratis natuur locaties is voor mij...



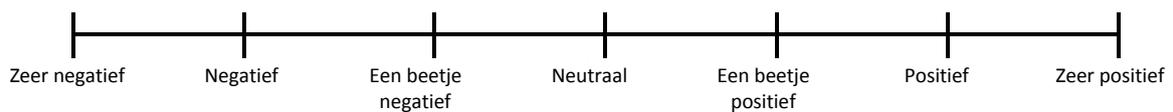
2. Meer pretpark natuur in plaats van wilde natuur is voor mij...



3. Een hogere drempel om natuur te bezoeken is voor mij...



4. Minder bezoeken aan natuur is voor mij...



## F. Kort bezoek aan de natuur

Lees onderstaande definitie van een *kort bezoek* aan natuur.

### Kort bezoek

Korte bezoekjes aan de natuur zijn vaak bezoeken die vlak bij huis worden gedaan, zoals bijvoorbeeld een korte wandeling of een rondje fietsen vanuit huis. Dit kan in een bos, weiland, veengebied of op een strand zijn maar ook in andere natuurtypen. De locatie hoeft niet perse klein te zijn voor een kort bezoek maar korte bezoeken worden gedefinieerd als korter dan 1.5 uur. Verder is het belangrijk dat de reden om de plek te bezoeken de natuurlijke omgeving is.

1. Zou u willen betalen voor toegang tot natuur voor een kort bezoek?

Ja (ga naar A)

Nee (sla A over)

A. Wat is het maximum bedrag dat u zou willen betalen voor toegang tot natuur bij een kort bezoek?

\_\_\_ euro per kort bezoek.

## G. Dag bezoek aan de natuur

Lees onderstaande definitie van een *dag bezoek* aan natuur.

### Dag bezoek

Dag bezoeken aan natuur zijn bezoeken die een groot gedeelte van de dag of de hele dag duren. De locatie kan dichtbij huis zijn maar is vaak verder weg waardoor bijvoorbeeld een auto of fiets noodzakelijk zijn om de locatie te bereiken. De natuur kan bestaan uit bos, weiland, veengebied en/of strand maar ook andere natuurtypen zijn mogelijk maar de gebieden hebben vaak als kenmerk dat ze vrij groot zijn. Wandelen, hiken, zwemmen, picknicken en fietsen zijn voorbeelden van activiteiten die tijdens een dag bezoek gedaan kunnen worden. Verder is het belangrijk dat de reden om de plek te bezoeken de natuurlijke omgeving is.

1. Zou u willen betalen voor toegang tot natuur voor een dag bezoek?

Ja (ga naar B)

Nee (sla B over)

B. Wat is het maximum bedrag dat u zou willen betalen voor toegang tot natuur bij een dag bezoek?

\_\_\_ euro per dag bezoek.

## H. Gedrag in het verleden

1. Hoe vaak heeft u een bezoek gebracht aan de natuur in het afgelopen jaar?

\_\_\_\_\_ bezoeken in het afgelopen jaar.

2. Heeft u ooit het Nationale Park de Hoge Veluwe bezocht?

Ja

Nee

Geen idee

3. Heeft u ooit betaald voor toegang tot natuur in Nederland.

Ja

Nee

Geen idee

4. Heeft u ooit betaald voor toegang tot natuur in het buitenland?

Ja

Nee

Geen idee

## I. Demografische gegevens

1. In welk land woont u?

\_\_\_\_\_

2. Geslacht:

Man

Vrouw

3. Wat is uw hoogst afgeronde opleiding?

Basisschool

Middelbare school

MBO

HBO

Universiteit (of hoger)

4. Wat is uw jaarlijkse bruto inkomen?

0-25.000 euro

25.000- 50.000 euro

50.000- 75.000 euro

75.000 euro or more

5. Leeftijd: \_\_\_\_ jaar

6. Emailadres indien uw kans wil maken op de boekenbon van 10 euro

\_\_\_\_\_