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The Predictive Potential of Emotions in Animal-related Concepts

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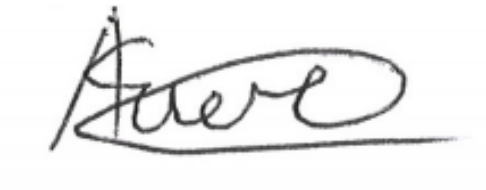
Signature: 

Abstract

Measuring the emotion of valence instead of fear to analyse whether behaviour can be predicted is something that has not yet been researched much in existing studies. Besides the topic of tourist behaviour, also the concepts of perceived existence value and willingness to pay (WTP) are taken into consideration in this research. Three types of valence are analysed: general valence, valence towards animal groups and valence towards specific animal species. To see if there is a relationship between valence and tourist behaviour, participants were asked to fill in an online questionnaire. In total, 266 questionnaires were filled in. To analyze the collected data, factor analysis, linear regressions and correlation tests were used as research methods. Results of this test say that valence is a predictor for tourist behaviour, perceived existence value and willingness to pay. This means that by measuring valence of tourists towards animals, it can be predicted which activities tourists will do during their holiday. Besides this, by measuring valence towards animals, it can be predicted whether the respondent wants specific species to survive and how much money the respondent wants to spend to make this happen.

Keywords: tourist behaviour, existence value, Willingness to Pay (WTP), emotions

Preface

The topic of this Bachelor Thesis was chosen from a pre-existing list of topics. However, the reason to choose this specific topic was because it was in line with my interest in animals and biodiversity. I wrote this Bachelor Thesis to graduate from the BSc of Tourism at the University of Wageningen. This thesis will give the reader an insight in the behaviour of something we've all been at least once, a tourist. Is it possible to predict the behaviour of tourists? This thesis will focus specifically at interest in animal-related tourism, which means that only activities with animals involved will be researched.

During the process of writing this thesis, I've learned a lot of things. First of all, not to give up. Even though it feels like you will be stuck at this point forever, there is always a way to get further. There were good days and bad days, but overall I've written this thesis with much enthusiasm. Writing this thesis has made me feel more independent and more self-confident.

One of the problems I've faced was to collect enough completed questionnaires. With a questionnaire which was a bit long, it was hard to find enough people that were willing to respond to all the questions. However, thanks to many people who were willing to share my questionnaire by email and social media, I'm very happy with the result. Due to this large number of respondents, it was possible to do some good analyses in SPSS. Because of this, this research could diversify itself by measuring the emotion of valence instead of fear. This is something that is still missing in the existing studies and that is why the results of this research can be a contribution to research about tourist behaviour to fill in this gap.

This thesis would never have been written without the help of my supervisor Dr. Ir. Maarten Jacobs. His help has been a great contribution to this thesis. He has helped me working with SPSS and gave me a lot of new ideas. Also, I want to thank everyone who took the time to fill in my questionnaire, without them it would never have been possible. Finally, I want to thank my family and friends for supporting me.

I hope you will enjoy reading my thesis!

Aster van der Wal
June, 2014

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1. Introduction

Tourism is one of the world's largest business enterprises. There are working tens of millions of employees and it has hundreds of millions of customers. It is suggested that 700 million international trips are undertaken every year, and domestic tourism may well be an order of magnitude larger than that. Nowadays, most people in industrialized countries take every chance to get away from the everyday routine. Going away can be in the form of shorter trips during the weekends or by longer trips during the holidays. Voluntarily, people form long lines of cars and coaches or get themselves transported in a bus, airplane or train to their holiday destination. When they arrive at the holiday destination people queue up in front of restaurants, beaches or sights that can't be missed. People feel like they have to travel because they do no longer feel happy at the place they live or work. To be able to carry on, they feel the need to escape from the burdens from the everyday work, home and leisure life. They feel that their life is the same every day. These feelings can lead to stress, physical and mental exhaustion and boredom. In order to forget these feelings, people want to find what they miss or have lost in the everyday life. By doing this, they feel independent, free and take home new memories (Krippendorf, 1987).

Animals play a huge role in our lives. They are used as pets, for transportation, to eat or for science. Nowadays, for most of the people, the vision of nature on this planet is seen mostly on television, and this has become the standard for many people to 'experience' it. This is why animals can also play an important role during holidays (Holopainen, 2012). Many activities of tourists during their holiday involve animals. Whale watching holidays, bird watching holidays, but also visiting zoos and swimming with dolphins are examples of holiday activities that involve animals. Within the tourism business, many different species of animals have to be dealt with and tourists have different types of encounters with them. Animals can be seen in captivity, as entertainers, in the wild, part of an activity, or to transport tourists. Even though most people never want to return to a life without the modern conveniences, many of them are willing to spend their time and money for at least a temporary return to nature, and visiting the world's last remaining wild areas to enjoy wildlife tourism. To conserve this wildlife, money for animal conservation is needed. How much money people want to spend for animal conservation depends on many economic and cultural factors.

Every individual tourist has specific feelings towards different species of animals. These feelings are part of people's emotions. To define emotions is hard, but everyone agrees that emotion is an ancient and basic mental capacity that is important for other mental processes (Jacobs, Vaske & Roemer, 2012). We experience

emotions for a specific reason and emotions are important to make us able to fully respond to the world we are currently living in. Emotions are as important as any other needs we have, like psychical needs. When we would ignore our emotions, this can eventually cause us harm. It is possible, for example, that you feel fear against spiders but that you feel very pleasant around monkeys. This study will address emotions of tourists towards wildlife to see whether it can predict specific behaviour, something that is still missing in the existing studies. This study will try to fill that gap.

In this Bachelor Thesis, the focus is on exploring the relationship between emotions and tourist behaviour, perceived existence value and willingness to pay. With the help of quantitative research through questionnaires, I will contribute to existing literature about emotions and behaviour. The first step will be a literature review where I will discuss themes and concepts that appear to be relevant within academic literature on emotions and wildlife. This step will also include an investigation of studies that have already been conducted on these concepts. The literature review will be followed by a methodology section where I will explain how this research has been carried out and a section that presents the results and the analysis. Then there will be a discussion and finally a conclusion will be drawn.

2. Literature review

There are many theories proposed to explain emotions and especially the emotion of fear. Even though a wide variety of these theories are covered in the existing literature, this research will focus on three themes, which are: interest in animal-related tourism, perceived existence value of specific animal species and willingness to pay (WTP) for animal conservation. This research will focus on the relationship between emotions and these three themes. Focussing on these themes, it will be possible to see whether emotions can have a predictive value towards these concepts.

2.1 Animal-related tourism

The past recent years, tourism has become one of the most important industries worldwide and the number of people going on a holiday is increasing. In addition, the frequency of taking trips is increasing and vacationers tend to take more than one holiday per year (UNWTO, 2008). A research done by Visit Scotland (2003) states that between 1997 and 2002, the number of visitors using the services of wildlife guides had grown with 70% and an attitude questionnaire which has been done in 2001 revealed that 36% of Scotland's tourists claimed that watching wildlife is an activity they undertake during their holiday. Animal-related tourism is defined as "*tourism based on encounters with non-domesticated (non-human) animals that can occur in either the animals' natural environment or in captivity*" (Higginbottom, 2004, p. 2). Within tourism, the increase of importance of animals can be linked with changing wants in humans' tourism desires, the changing relationship between animal and humans and the fact that animal rights become more and more important (Carr, 2010). Most people, especially in the West, live relatively isolated from nature and wild animals (with the exception of a small number of domesticated species). This is one of the reasons why the demand to see and gaze upon them has grown significantly over the past 20 years and will continue to grow (Roe *et al*., 1997). Besides this, participating in animal-related tourism gives tourists an unique opportunity to get in contact with nature in a way that can be life-changing. This is one of the reasons why it has become very popular over the past few years (Ballantyne, Packer & Sutherland, 2011). Another reason which makes animal-related tourism popular is that the increasing urbanisation and mechanisation have caused that many people do not feel connected with nature anymore (Forestell, 1993). Besides that, animal-related tourism destinations become easier to go to, through the development of better infrastructure, which also contributes to the growing popularity. According to Freeman and Kreuter (1994), the desire to see sea mammals and primates can be explained by the fact that

with these animals tourists can empathise with animal behaviour or attributes. Tourists can connect with the curiosity, the want to play, the social habits and the desire to interact with humans of these animals.

Many authors (Barstow, 1986; Woods, 2000) have done research about the appeal that specific animal species have on tourists. It seems that some species are definitely more attractive to tourists than other species. According to Kellert (1989) for example, large mammals are mostly preferred over small mammals and large birds over small birds to watch. Besides this, there are also species that have some sort of 'charisma', such as pandas, baby monkeys and koalas. These animals are popular because of their approachability. For tourists, there are many opportunities to see or touch these animals. On the other side there are species which have negative appeal. This is mostly associated with negative behaviour such as scavenging and perceived dangerousness. Woods' (2000) study states that species that are the least popular are those that are the 'least like humans, are wild, unpredictable, dangerous and are not safe-human orientated' (2000: 33). The sightings of tourists of animals that can be potentially dangerous such as tigers, sharks and wolves can also provide them an opportunity for adventure and to make memories that will stay with them their whole life (Curtin, 2008).

Animals can be important for tourists in many ways. Tourists can search for them in the wild, they can be captured so that tourists can look at them in captivity, or they can be used as a way to transport the tourists. Animals can be important in many forms of tourism. From watching 'the big five' on safaris to watch animals in zoos and aquaria. From watching birds in the sky, to fishing in the deep sea and scuba diving. Being transported on horse, elephant or yak rides and from watching giant whales to shark cage diving. Another role, animals can play is for food. This can be in many forms such as the local cheese to the tuna sushi in a restaurant in China. Some studies (Davis et al., 1997; Orams, 2002) have indicated that what people call the 'best' experiences mostly involve some type of encounter with animals. This can be seen especially in the marine wildlife sector where gaining enjoyment from seeing marine animals was enough. Now tourists want to be in the water with them, swimming alongside them, feeding them or even physically making contact with them.

According to Higginbottom (2004), there are four different forms of wildlife tourism: wildlife-watching tourism, captive-wildlife tourism, hunting tourism and fishing tourism. With these four forms of tourism it is possible to explore the relationship between emotions and tourist behaviour. These forms have been distinguished because each form is associated with somewhat distinct types of

suppliers, organisational networks, environmental impacts, host community issues, stakeholders, markets and bodies of literature. Tourists who are involved in one of the four forms are likely to have different objectives and motives in relation to wildlife tourism.

Animals can play a role in tourism in many various ways. They can be the main purpose of the holiday like the activities mentioned above. Another possibility is that they play an unintentional role and are only involved in the experience by coincidence (Higginbottom, 2004). Even though the encounter is by coincidence, the animals can still play a huge role because of the experience of seeing or interacting with these animals. This is because people feel emotions towards animals during the encounter (Holopainen, 2012). Emotions and the importance of emotions will be explained in the next section.

2.2 Importance of emotions in behaviour and other mental processes

To define emotions is hard, but everyone agrees that emotion is an ancient and basic mental capacity that is important for other mental processes (Jacobs, Vaske & Roemer, 2012). Already a long time ago, the importance of emotions have been accepted. According to Mowrer (1960) "*emotions play an important role in changes in behaviour or performance*". Ekman (1992) developed one of the more recent and most accepted theories. He argued that we have six basic emotions being anger, fear, sadness, enjoyment, disgust, and surprise. We experience emotions for a reason and emotions are necessary in order to fully respond to the world we are living in. Emotions are just as important as any other needs we have like psychical needs. When we would ignore our emotions, this will eventually cause us harm. Emotions can also be seen as a kind of "warning system". Because of emotions we have a sense of what is happening in the world around us. Emotions that we feel can be the most reliable indicator of how things are going in our lives. That is the reason why emotions not only cause the feelings we feel inside, but they also make us behave in the way we do. This is why it is important to understand emotions. If you don't understand the emotions people feel, it is hard to understand the behaviour of these people.

Even though it has been accepted for a long time that emotions are a driving force in human psychology, it has become a research topic only very recently (Lench, Fores & Bench, 2011). Most of the written scientific articles about mental dispositions towards wildlife have not focused on emotions but on cognitions.

According to Hudenko (2012) theories about emotions can be very helpful as frameworks to study the process of decision making in problems between humans

and wildlife. The emotional experience tourists have during animal-related tourism leads to a deeper thought, concern and respect for the specific animal they have seen and also towards the species as a whole (Ballantyne, Packer & Sutherland, 2011).

As explained in this section, emotions are very important. Just for this reason, it is scientifically interesting to research whether emotions towards animals are also important to predict behaviour within animal-related tourism, perceived existence value and WTP.

2.3 Emotions

2.3.1 Approaches to research emotions

A lot of research has been done about emotions. This section will give the reader some background information about different approaches to research emotions. One way to do this is done by Jacobs, Vaske & Roemer (2012), who have listed four approaches to the study of emotion: the evolutionary approach, the James-Lange theory, the cognitive approach, and the cultural approach. These four approaches reflect the wide variety of theories and perspectives that exist on emotions. The evolutionary approach emphasizes that emotions emerged during the evolution of humans in order to survive, and for human well-being. Second, the James-Lange theory says that emotions are the result of physiological responses to environmental stimuli. These responses are processed not centrally but peripherally in the nervous system. Third, the cognitive perspective is primarily concerned with the connections between cognitive processes (e.g., appraisal, judgment, belief, intention, memory) and emotion. The role of emotion has also been important for other cognitive research topics such as in learning, decision making, and memory formation and retrieval (Cornelius, 2000). At last there is the cultural approach. Within this approach, the cultural, learned aspects of emotions are important.

As shown in this section, there are many ways to do research on emotions. Due to this, there is a wide variety of existing literature. The approach of this research will be explained in the next section 'conceptualizing emotions'.

2.3.2 Conceptualizing emotions

To understand emotions, it is important to understand the difference between the discrete and the dimensional perspective of emotions. Both perspectives are a way to classify emotions. The discrete perspective focuses on specific states of emotions, such as fear, happiness, or sadness. The dimensional perspective focuses not on specific states of emotions, but on emotional states which are theorized to consist a limited number of general dimensions. The dimensions that are often used to

research emotions are: valence (liking–disliking dimension) and arousal (activation–deactivation) (Jacobs, Fehres & Campbell, 2012). To measure emotions, the best way would be to measure as many as possible dimensions. However, due to limited time or limiting methodological problems, this is not always possible. The best option is then to use the dimension valence. There are several reasons for this which will be explained later in this section.

Besides deciding which perspective to use, it is important to decide whether to focus on emotional dispositions or emotional states. Emotional states are transient events, which occur at a time On the other hand there are emotional dispositions, which are traits. Traits are always there, even if they are not active, where states can occur at some specific moment in time after which they disappear again. In this research, the focus will be on emotional dispositions instead of emotional states because the general feeling of tourists are of interest, and not how they feel at this moment or some other point. Traits are relatively stable as compared to states (Jacobs, Vaske & Roemer, 2012).

Within the dimension of valence, the range goes from feeling pleasant to unpleasant (Barrett *et al*, 2013). Another dimension that is used is the level of arousal. The level of arousal says how activated someone feels by the sight of an animal. Besides these two dimensions, 'approach versus avoidance tendencies' and 'submissiveness versus dominance' are two other dimensions that are sometimes mentioned (Jacobs, Fehres & Campbell, 2012). Earlier researches found out that valence capture the largest variance of emotional dispositions. This is shown in the research of Jacobs (2014), where can be seen that valence explains the largest portion of variance, more than arousal and seven basic emotions. Within this research, valence explains the largest portion of variance not only in case of the Dutch sample, but also for the Canadian sample. Realizing that valence has a high predictive value all over the world makes it even more appropriate to measure emotions by valence.

2.4 Emotions towards wildlife

Already some research has been done about emotions towards wildlife. Jacobs et al (2014) list five different strands of empirical research into emotions. These five different strands are:

1. Researching fear dimensions by doing a factor analyses with self-reported fear items towards a variety of animals
2. Examining mental processes that are associated with snake and spider phobias
3. Addressing fear towards large carnivores in specific human populations.

4. Addressing the cognitive antecedents of fear towards large carnivores
5. Addressing the relationship between emotions towards wolves and specific cognitions that are relevant to policy and management

Only point one and five are relevant for this study. The ones that are not relevant will not be discussed.

Some studies have identified fear dimensions by doing factor analyses with self-reported fear items towards a variety of animals (Arrindell 2000; Davey 1994; Davey et al. 1998; Tucker and Bond 1997; Ware et al. 1994). Using different animals and context will give different results. By doing a factor analysis, all animals will be placed in categories. These categories are: fear-relevant animals, disgust-relevant animals and fear-irrelevant animals. The categories which are a result of factor analysis are very logical and easily interpretable. If someone is scared of a tiger, he or she is most likely also scared of a lion. One of the results of this study is that if people feel fear towards wolves, they mostly also feel fear towards other large carnivores. If this is the case for fear, it is interesting to research whether this is also the case for other emotions than fear, for example valence. Besides this, it is interesting to see whether factor analysis will also give logical categories for other emotions than fear.

Secondly, there are also studies which have addressed the relationship between emotions towards wolves and specific cognitions that are relevant to policy and management. It is possible to predict the outcomes of wolf recovery by positive or negative feelings towards wolves of people (Slagle et al. 2012). A substantial portion of the variance of acceptability of lethal wolf management can be explained by how people feel towards wolves and ranchers. (Vaske et al. 2013). If emotions can be a predictive value to explain a substantial portion of the variance of acceptability of lethal wolf management, this makes it more likely that emotions towards wildlife can also be a predictive value for the behaviour of tourists. Even though I will not focus on policy and management, it makes this research much more scientifically interesting.

Most studies have addressed fear. Other emotions, however, might be important in context of wildlife (Jacobs, 2007). This section explains that emotions towards wildlife can explain certain cognitions in the context of animals.

2.5 Perceived existence value

Existence value is in its broad sense, the utility that people derive from knowing that particular species of animal will stay in existence and knowing that other and future generations will also be able to enjoy it (Turpie, 2003). The idea that our ecological relationship during the times of the early hominids is still influencing our emotional disposition today is very plausible. Biological/evolutionary factors have a big role in forming our emotional disposition towards animals.

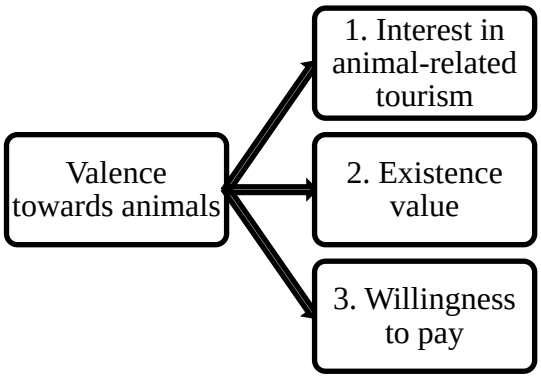
2.6 Willingness to pay

Existence value of animal species is an intangible product. However, it is often realised in the form of donations to conserve biodiversity. Besides this, it can also be elicited in willingness to pay (WTP) (Turpie, 2003). Willingness to pay is the maximum amount of money an individual would be willing to pay. This can be useful in cases where the price of the good is not known, e.g. noise pollution or biodiversity. This method tries to determine the price that people are willing to pay for the good. (Hanemann, 1991). For individual consumers, willingness to pay can vary, depending on their personal evaluation of the value of a product or service.

A wide variety of theories are covered in this literature review. According to Higginbottom (2004), there are four different forms of wildlife tourism: wildlife-watching tourism, captive-wildlife tourism, hunting tourism and fishing tourism. During activities within these forms of tourism, people feel emotions towards animals (Holopainen, 2012) and it seems that some species are definitely more attractive to tourists than other species. Valence is a good option to research emotions because earlier researches found out that valence capture the largest portion of variance of emotional dispositions. Most studies have addressed fear. Other emotions, however, might be important in context of wildlife (Jacobs, 2007). Biological/evolutionary factors have a big role in forming our emotional disposition towards animals. To be sure that particular species of animal will stay in existence it is important that people are willing to pay money for animal conservation. For individual consumers, willingness to pay can vary, depending on their personal evaluation of the value of a product or service, for example animals.

3. Conceptual model and hypotheses

Figure 3.1 Conceptual model



The conceptual model (Figure 3.1) consists of two concepts that have different levels of specificity. The left side of the model which says "valence towards animals" is a mental disposition which shows general behaviour, where the right side which says "interest in animal-related tourism', 'existence value' and 'willingness to pay' are much more specific. This means that it is questioned whether something general can predict specific behaviour and this makes the hypotheses very interesting to research. The results of this research will show whether it is possible to predict specific behaviour with much more general mental dispositions.

Emotions towards animals depend on what animal you use. This means that it is not possible to say anything about a relationship if you only use a few animals. If you use many animals, it is not possible to ask about more than one emotion because this questionnaire would be way too long. Besides this, earlier researches found out that valence captures the largest portion of variance of emotional dispositions, more than any other.

The purpose of this research is to find out whether there is a relationship between valence and 'interest in animal-related tourism', 'existence value' and 'willingness to pay'. Interest in animal-related tourism means how interested tourists are in participating in specific activities which involve animals. These activities are divided in three subcategories: wildlife-watching tourism, captive-wildlife tourism and hunting- & fishing tourism (Higginbottom, 2004) These forms have been distinguished because each form is associated with somewhat distinct types of suppliers, organisational networks, environmental impacts, host community issues, stakeholders, markets and bodies of literature.

Perceived existence value is the value people have towards the continued existence of specific species. These species were chosen based on two criteria. (1) The list should consist of different type of species. It now includes big and small land mammals, birds, sea animals, insects, reptiles and amphibians. (2) This list should include at least three animals from each category found by the Davey et al study (1998). These three categories are: fear relevant, fear-irrelevant and disgust-relevant.
Willingness to pay is the amount of money people are willing to pay for animal conservation.

These relationships are likely to exist because, as stated in chapter 2, in general, emotions are important for mental processes such as decision-making. The study of Jacobs (2014) found out that emotions towards animals can predict specific decisions. That is why it is likely that this will also be the case in this research.

To test whether these relationships exist, three hypotheses will be tested:

1. *The higher the valence towards animals, the higher the interest to participate in animal-related tourism.*
2. *The higher the valence towards animals, the higher the perceived existence value of animals.*
3. *The higher the valence towards animal species, the higher the willingness to pay for animal conservation.*

4. Methodology

A gold standard for measuring emotions does not exist (Scherer, 2005). To find out the best way to test the hypotheses of this research, different ways of conducting research on emotions will be addressed. Emotion measures are divided in four categories: physiological reactions, brain activity, behavioural measures and self-report measures. Methods using physiological reactions, brain activity or behavioural measures are not often used by social scientists and were not seen fit to use for this particular research. The reasons for this are different for every method and will now be explained.

The physiological & brain activity method were not seen fit for this research because the researcher is not able to use brains scan such as EEG and fMRI scans in order to look at brain activity. To carry out these methods, most of the time cooperation with specialists is necessary (Jacobs, 2012b).

Also behavioural measures were not seen as fit for this research. The emotional state of mind can be explained for a large part by body language. Especially facial expressions tell us a lot about the emotions people feel. Researchers can judge a person's facial expression directly in person or at a later time using a video recording of an experiment. Nowadays, we also start to use computer programs to determine a person's emotional state. A well-known and frequently used system is the Facial Action Coding System (FACS) (Ekman et al, 2002). But, facial expressions can project a different emotion than the person is actually experiencing. There is evidence that intensity of the emotion is related to strengths of the muscular contraction (Ekman et al, 1980). This was indicated by Ekman (1977) who conducted an experiment in which Japanese smiled more frequently in the presence of the researcher compared to when the researcher was absent which could be a form of social display. Another reason is that again, the researcher is not able to use the FACS to analyze facial expressions.

Self-report measures were seen as fit for this research. Self-reports are currently the most feasible way to measure valence because the respondents can tell the researcher how pleasant they feel. Besides this, self-report measures are the only option which the researcher is capable to make use of due to limited knowledge about the other methods. Self-report measures are also seen as fit for this research because when you want to test a hypothesis, you need a statistical analysis and to get this you need a quantitative research. You need to show numbers to prove your hypothesis. Also, quantitative research has been proven the best method for finding relationships (Jacobs, 2012b). Besides this, using self-report measures such as

questionnaires makes it possible to collect a large amount of information, from a large number of people in a short period of time and in a relatively cost effective way. Another reason to use questionnaires is because it gives the researcher hard and reliable data which you need for determining behaviour patterns and theory testing (Bryman, 2008).

4.1 Sample

Based on the hypotheses and the chosen method to measure emotional disposition towards different species, this research will use a self-report measurement in the form of questionnaires. People will be asked to fill in a questionnaire, which will contain several closed questions and some open questions (see appendix). To collect the questionnaires, a non-random sample has been used. An online questionnaire was conducted and spread across friends and family with the question to spread the questionnaire themselves too. The link to this questionnaire was also spread using the email system of Wageningen University and distributed on social media websites on pages/groups relevant to the students of Wageningen as a snowball sample. The target group of this study is everyone who is willing to fill in the questionnaire since the researcher is not in control of who fills in the questionnaire anymore. The questionnaire was only conducted in English to have the possibility for a more international sample. However, to make sure that everyone understands it right, also the Dutch names of the animals were added next to the English names. The question 'Are you a student' was added because samples of university students do not necessarily generalize to entire populations.

4.2 Independent variables

With the first question of the questionnaire: "*please indicate for each animal in the list below how pleasant or unpleasant you feel towards it"*, people are asked for their valence towards a list of 58 different animals. Answers were coded on a 7-point scale with "very pleasant" and "very unpleasant" as extreme answers and a neutral point in the middle. This list consists of 58 animals that have also been used by Davey in 1994 (see table 5.1).

Emotional dispositions towards species of animals can be operationalized in two ways: (1) as discrete emotions and (2) as dimensions of emotions. The discrete emotions of joy, fear, surprise, anger, disgust, sadness, and interest were not measured. Several self-report instruments to assess valence and/or arousal have been developed (Jacobs et al. 2012).

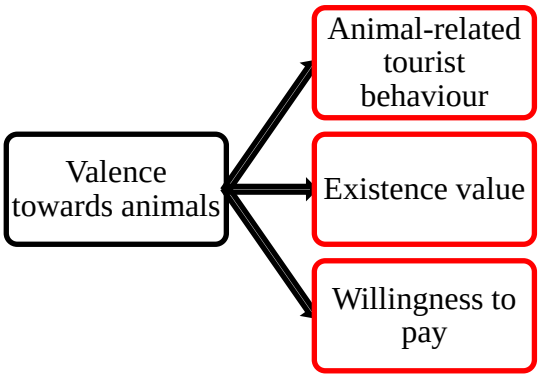
The PAD instrument is the only suitable instrument for this research to measure dimensions of emotions. Even though to measure emotions the best, it is important to include both valence and arousal, and you should have multiple items to assess each dimension (valence/arousal/dominance), for this research, only valence has been used. Earlier researches found out that valence captures the largest portion of variance of emotional dispositions (Barrett *et al*, 2013). In the research of Jacobs (2014), there can be seen that valence explains the largest portion of variance, higher than arousal and seven basic emotions.

In this research, three types of valence will be used. First there is general valence towards animals. This measures how respondents feel towards animals in general. Secondly, respondents will be asked about their valence towards four specific animal groups. Finally, respondents will be asked about their valence towards specific animal species.

4.3 Dependent variables

This research focuses on three different dependent variables.

Figure 4.1 Conceptual model



4.3.1 Interest in animal-related tourism

Interest in animal-related tourism was measured with several activities tourists can choose to do during their holiday. Respondents had to answer the following question: *"To what extent do you find the following forms of tourist activities attractive?"* For analytical purpose, hunting and fishing tourism will be packed together as one form of tourism, which means that three forms of tourism remain (see section 2.1).

- Wildlife-watching tourism
  - Going on a safari
  - Predator bird watching tours
  - Coral reef diving
  - Whale watching tours
  - Shark cage diving
- Captive-wildlife tourism
  - Hiking tours with donkeys
  - Going to the zoo
  - Visiting an aquarium
  - Visiting a wildlife centre
  - Swimming with dolphins
- Hunting & Fishing tourism
  - Fly fishing
  - Hunting for consumption
  - Trophy hunting

- Deep sea fishing

Answers were coded on a 5-point scale with "very attractive" and "not attractive" as extreme answers and a neutral point in the middle.

4.3.2 Perceived existence value

The question to measure perceived existence value is about the importance of the existence of a particular species in the future. Respondents had to answer the following question: *"How important do you consider the continued existence in the future of the animals listed below?"*. For this question respondents had to give their perceived existence value of 17 species.

To measure the perceived existence value of certain animals, the respondents had to rate the importance of the continued existence of animal species shown in table 4.1.

Table 4.1 List of animals, derived from Davey (1994).

Deer	Rat	Wolf	Goldfish
Snake	Camel	Jellyfish	Lion
Whale	Frog	Goose	Wild boar
Donkey	Shark	Cockroach	Eagle
Spider			

Answers were coded on a 5-point scale with "very important" and "not important" as extreme answers and a neutral point in the middle.

4.3.3 Willingness to pay

To measure willingness to pay, respondents had to say how much money they would pay annually for animal conservation by answering the following question: "*How much money would you be prepared to pay annually for animal conservation?"* The respondents could answer this open question with an amount of money of their choice.

4.4 Analyses

Afterwards, a statistical analysis will be done. To analyze the collected data, different research methods are used in SPSS. To start, frequencies tables will be used to check for errors in the dataset. To get familiar with the dataset and to see an overall view of the answers of the respondents, descriptive statistics are shown. Afterwards, to check

whether the number of variables can be reduced to a few factors Exploratory Factor Analysis (EFA) with Varimax rotation will be used checking multiple options. The first analysis will be done with Eigenvalues >1 and a scree plot. Unfortunately, this still gave way too many options. That is why in SPSS, the number of factors will be forced to check for additional grouping possibilities (Explained variance has to be >50%). The results of this method were new logical and interpretable variables. To check whether these variables are reliable, a reliability test is done. Also, the correlation between the importance of the existence of certain animal species and the valence scores of the same animal species will be analyzed using a Pearson's correlation test. These results will provide an answer if the relation is significant (p-value) and also the effect size of the relation (Pearson's r). To describe the dependence of a valence on one (or more) dependent variables, regression is used. Qualitative research methods are not used.

5. Results

In this chapter the results of this research will be shown. In total 266 questionnaires were collected, divided over 20 days.

5.1 Scale analyses

This research contains many variables. To bring down these numbers, scale analyses will be done. Doing this, it is possible to identify responses which can be combined together into a single new index.

5.1.1 Valence towards animals

Because of the large amount of valence variables, it was important to bring down this number and make new composite indices that reflect valence towards animals. Since there was not theoretically informed *a priori* categorization of these variables, exploratory factor analysis was applied to reveal underlying dimensions that could be used to create composite indices. A four factor solution provided a structure that was logically interpretable, as can be seen in table 5.1.

Table 5.1 Exploratory Factor Analysis with VARIMAX rotation on four factors

	Factor (Explained variance)			
	1 (18.15%)	2 (16.47%)	3 (11.82%)	4 (8.51%)
Owl	.52			
Eagle	.65			
Lion	.80			
Bear	.86			
Alligator	.80			
Crocodile	.81			
Tiger	.83			
Wolf	.83			
Shark	.73			
Hippo	.75			
Snake	.63			
Octopus	.51			
Wild boar	.75			
Elephant	.65			
Whale	.64			
Panda	.54		.53	
Fox	.65			
Frog		.48		
Cockroach		.69		

Spider	.64		
Beetle	.70		
Maggot	.68		
Worm	.82		
Leech	.71		
Bat	.60		
Wasp	.62		
Lizard	.53		
Rat	.60		
Slug	.73		
Bee	.47		
Mouse	.55		
Jellyfish	.66		
Moth	.71		
Snail	.69		
Fly	.68		
Hamster		.73	
Budgie		.40	
Cat		.56	
Rabbit		.60	
Squirrel		.64	
Seal		.66	
Dog		.53	
Guinea Pig		.71	
Gerbil		.56	
Goldfish		.42	
Chicken			.72
Duck			.65
Pig			.63
Cow			.81
Sheep		.45	.65
Goat		.41	.63
Camel			.50
Goose			.64
Donkey		.59	.45
Deer			.47

Exploratory factor analysis revealed four underlying dimensions that could be used to create composite indices which all have an Eigenvalue of >1. Some animals (panda, sheep, goat and donkey) were consistent with more than one factor. When animals loaded on multiple factors the highest loading was used to determine the category they fit best.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) test gave a result of .90 and the Bartlett's test of Sphericity was statistically significant with $p < 0.001$. This indicates that the used sample is adequate for this exploratory factor analysis.

A reliability test is done to check whether the new sets of items are related as a group and whether there is a high internal consistency.

Table 5.2 Reliability of new variables

Construct	Item	Alpha if item deleted	Item-total correlation	Alpha
Large Wild				.96
	Owl	.96	.63	
	Eagle	.95	.71	
	Lion	.95	.78	
	Bear	.95	.86	
	Alligator	.95	.81	
	Crocodile	.95	.81	
	Tiger	.95	.81	
	Wolf	.95	.84	
	Shark	.95	.74	
	Hippo	.95	.78	
	Snake	.95	.72	
	Octopus	.96	.58	
	Wild boar	.95	.77	
	Elephant	.96	.66	
	Whale	.96	.67	
	Panda	.96	.58	
	Fox	.95	.74	
Small 'pest' animals				.93
	Frog	.93	.60	
	Cockroach	.93	.60	
	Spider	.93	.62	
	Beetle	.92	.74	
	Maggot	.93	.54	
	Worm	.92	.78	
	Leech	.93	.56	
	Bat	.93	.70	
	Wasp	.93	.59	
	Lizard	.93	.67	
	Rat	.93	.65	

	Slug	.93	.65	
	Bee	.93	.55	
	Mouse	.93	.65	
	Jellyfish	.93	.61	
	Moth	.93	.65	
	Snail	.93	.66	
	Fly	.93	.59	
Companion				.84
	Hamster	.81	.66	
	Budgie	.83	.48	
	Cat	.83	.43	
	Rabbit	.82	.53	
	Squirrel	.82	.56	
	Seal	.82	.59	
	Dog	.83	.41	
	Guinea Pig	.81	.63	
	Gerbil	.81	.60	
	Goldfish	.83	.44	
Farm Animals				.90
	Chicken	.89	.57	
	Duck	.88	.69	
	Pig	.89	.64	
	Cow	.88	.72	
	Sheep	.88	.69	
	Goat	.88	.78	
	Camel	.89	.50	
	Goose	.89	.61	
	Donkey	.88	.67	
	Deer	.89	.56	

In table 5.2, four new indices are shown: Large Wildlife, Small 'pest' animals, Companion animals and Farm animals. Alphas above .65 are generally considered acceptable and suggest that the items can be combined into an additive index (Vaske, 2008). The reliability test shows that these four new indices met the criteria of Vaske (2008) with a Cronbach's alpha higher than 0.65. For every construct the Cronbach's alpha is very high. Deleting any item does not increase the alphas. All item-total correlations are larger than .4. On the basis of these figures, new composite indices for these four groups of animals were calculated as the mean of the underlying items.

The first group 'Large Wildlife' contains all large and wild animals. None of these animals are considered to be pets or animals that people like to surround themselves with. Most of these animals can harm people but since we can often avoid these

predators we find these animals more positive compared to the animals which we cannot avoid easily and harm us indirectly

The second group 'Small ' pest' animals' contains of small animals and most of these animals are relatively harmless to humans directly but are still seen as unpleasant. This could be explained by the fact that these animals often live close to us and can harm us indirectly by spreading disease, by being poisonous or because of their appearance.

The third group 'Companion animals' contains of animals that we like to surround ourselves with. Looking at the animals listed in this category we can see that all of these animals are mammals (excluding the goldfish). All these animals do not eat us, which makes them non harmful to humans. This factor also contains a variety of pets with the most famous ones which are the cat and the dog. Also the rabbit and the guinea pig are fairly common pets. Besides this, all these animals have in common that they are all appreciated for their aesthetic beauty which might give a possible explanation why we feel so positive when thinking about those species.

The fourth group 'Farm animals' consists of animals which are directly or indirectly beneficial to us for example for food or by giving milk or by laying eggs and are mostly used at farms. They are animals we like to keep close to us as pets or as a means to make a living like the cow, chicken, goat, pig, sheep, goose & duck all being farm animals. These farm animals are also important economically while not being dangerous to humans.

Again, another reliability test is done with the overall valence for the four new indices. Doing this, all four indices will all be equally represented.

Table 5.3 Reliability test for the four new indices

Construct	Item	Alpha if item deleted	Item-total correlation	Alpha
Valence				.81
	Large Wild	.76	.42	
	Small 'pest'	.76	.37	
	Companion	.77	.38	
	Farm animals	.73	.48	

Again, alphas above .65 are generally considered acceptable and suggest that the items can be combined into an additive index (Vaske, 2008). The reliability test shows that these four new indices met the criteria of Vaske (2008) with a Cronbach's alpha higher than 0.65. Deleting any item does not increase the alphas. Almost all item-total correlations are larger than .4 except from two who are almost .4. With a Cronbach's alpha of .81, this means that we can use these new indices for further analysis.

5.1.2 Interest in animal-related tourism

The same can be done for the 14 different forms of tourist behaviour, as can be seen in table 5.4. The activities are clustered together by the researcher based on their characteristics and on earlier research (explained in section 2.1). Since there was theoretically informed *a priori* categorization of these variables an Exploratory Factor Analysis was not necessary for these items

Table 5.4 Reliability test for the three indices of animal-related tourism

Construct	Item	Alpha if item deleted	Item-total correlation	Alpha
Hunting and Fishing Tourism				.72
	Trophy hunting	.67	.48	
	Deep sea fishing	.62	.44	
	Fly-Fishing	.69	.44	
	Hunting for consumption	.63	.55	
Captive-Wildlife Tourism				.65
	Hiking tours with donkeys	.67	.14	
	Going to the zoo	.54	.37	
	Visiting a wildlife centre	.50	.41	
	Swimming with dolphins	.64	.11	
	Visiting an aquarium	.60	.28	

Wildlife-Watching Tourism				.67
	Going on a safari	.58	.51	
	Predator bird watching tours	.72	.17	
	Coral reef diving	.56	.55	
	Whale watching tours	.56	.57	
	Shark cage diving	.65	.38	

Table 5.4 shows all the different forms of tourist behaviour used in this research. Three new indices are made: Wildlife-Watching tourism, Captive-Wildlife tourism and Hunting & Fishing tourism.

For the new index of 'Hunting & Fishing tourism', alpha is above .65 and item-total correlation is above .4, which is generally considered acceptable and suggests that the items can be combined into an additive index (Vaske, 2008).

In the new index 'Wildlife-Watching tourism' can be seen that 'predator bird watching tours' score very low on item-total correlation. To make the index more consistent this activity will be removed which means that four activities will be left to form the group of 'Wildlife-Watching tourism'.

In the new index 'Captive-Wildlife tourism' both 'Hiking tours with donkeys' and 'Swimming with dolphins' score very low on item-total correlation. A reason for these low item-total correlations could be that these two activities are very different from the other three. Deleting these two activities will give an alpha of .73 which means that the alpha is now above .65 which is generally considered acceptable and suggest that the items can be combined into an additive index (Vaske, 2008). Besides this, all item-total correlations are now > .4.

For these three new indices, a reliability test can be done, to see whether the new indices are reliable. The results are shown in table 5.5.

Table 5.5 Reliability test for the three new indices

Construct	Item	Alpha if item deleted	Item-total correlation	Alpha
Interest in animal-related tourism				.47
	Wildlife watching	.14	.41	
	Captive wildlife	.48	.23	
	Hunting and fishing	.43	.25	

Alphas above .65 are generally considered acceptable and suggest that the items can be combined into an additive index (Vaske, 2008). The reliability test shows that this new index does not meet the criteria of Vaske (2008) with a Cronbach's alpha of .47. Besides the low alpha, also the item-total correlations do not meet the standard of .4. That is why it is statistically not acceptable to contract these three variables into a new index. For further analysis, the three variables (wildlife-watching, captive-wildlife and hunting&fishing) will be used separately and not together as a new index.

To conclude, new composite indices were calculated, as reliability analyses have justified. These indices will be used for subsequent analyses.

5.2 Descriptive statistics

In this section the main features of the collected data will be described. These descriptive statistics will provide a simple summary about the observations that have been made.

5.2.1 Valence towards animals

In the first question of the survey the valence towards the 58 different animal species is measured. The results are shown in table 5.6. Valence towards animal species is presented in a descending order from high to low.

Table 5.6 Valence towards animal species

Animal	Mean valence	Standard deviation of valence
Dog	6.03	1.37
Cat	5.76	1.58
Rabbit	5.67	1.12
Panda	5.62	1.32
Squirrel	5.61	1.28
Seal	5.48	1.33
Elephant	5.48	1.32
Deer	5.43	1.16
Donkey	5.37	1.29
Turtle	5.27	1.36
Horse	5.26	1.55
Sheep	5.24	1.21
Cow	5.19	1.39
Whale	5.17	1.50
Duck	5.11	1.30
Hamster	5.05	1.31
Goat	5.04	1.36

Fox	5.04	1.45
Owl	5.02	1.43
Lion	4.94	1.70
Guinea Pig	4.93	1.47
Tiger	4.89	1.72
Chicken	4.87	1.38
Camel	4.72	1.31
Bear	4.71	1.62
Eagle	4.66	1.67
Pig	4.65	1.52
Goldfish	4.59	1.28
Wolf	4.57	1.76
Budgie	4.54	1.39
Gerbil	4.34	1.41
Wild Boar	4.25	1.59
Goose	4.23	1.44
Frog	4.09	1.56
Hippo	4.03	1.77
Lizard	3.98	1.68
Mouse	3.68	1.75
Bee	3.57	1.70
Crocodile	3.50	1.78
Alligator	3.47	1.75
Eel	3.38	1.62
Bat	3.37	1.74
Shark	3.23	1.83
Snail	3.23	1.51
Octopus	3.23	1.79
Beetle	3.03	1.53
Snake	2.87	1.74
Moth	2.75	1.46
Fly	2.74	1.27
Rat	2.70	1.68
Slug	2.59	1.33
Spider	2.55	1.55
Worm	2.52	1.40
Jellyfish	2.36	1.45
Wasp	2.17	1.31
Maggot	1.81	1.15
Cockroach	1.77	1.21
Leech	1.64	1.02

Table 5.6 shows the mean valence towards different species of animals of the participants. The higher the mean, the more pleasant people feel around this animal, ranging from 1 to 7, where 7 stands for very pleasant and 1 for not very pleasant. The table is ordered in descending order, which says that the animals with the highest score on valence are on top and the animals that have the lowest score on valence are at the bottom. The standard deviation is a measure of the dispersion from its mean. The more spread out the data, the higher the deviation.

As can be seen in the table, the two most common pets, dogs and cats, have the highest score of all the animals. These are animals that people feel very familiar with and people feel pleasant when surrounded by these animals. Other animals that score high are rabbit, panda, squirrel, seal, elephant, deer and donkey. All these animals are mammals and harmless to humans.
At the bottom of the list we find animals which are considered pests or which are dangerous. Animals like the spider, the fly, jellyfish, wasp and the cockroach. People do not feel pleasant with these animals around them.

5.2.2 Valence towards animal groups and animals in general

Table 5.8 Mean valence towards animal groups

	Mean	Std. Deviation
Companion	5.21	.86
Farm animals	4.98	.96
Large Wildlife	4.39	1.25
Small 'pest' animals	2.80	1.02

Table 5.8 shows the mean valence towards the four different animal groups. The group with the highest valence (5.21) are the companion animals. These animals we feel the most pleasant with. Many of the animals within this group are popular pets. On the second place there are the farm animals (4.98). These animals are useful to humans and cannot harm us. On the third place there is the large wildlife group (4.39). Even though these animals could be harmful to humans, they are still very popular because of their unique status and because they are only living in the wild. Least popular are the small 'pest' animals (2.80). These animals are mostly considered as 'scary' or 'disgusting' because of their appearance and because they are linked with disease and being poisonous.

Besides looking at the mean valence towards different animal groups, it is also interesting to look at the mean valence towards animals in general. Descriptive statistics show a mean valence of 4.34 towards animals in general with a standard deviation of .82. With a range from 1 to 7, this means that animals in general are rated slightly above neutral. On average, this is a light positive result.

5.2.3 Interest in animal-related tourism

Table 5.7 Mean interest in animal-related tourism

	Mean	Std. Deviation
Captive wildlife tourism	3.48	.92
Wildlife watching tourism	3.29	.85
Hunting & Fishing tourism	1.83	.86

Table 5.7 shows the mean valence towards the three different form of animal-related tourism. Answers were coded on a 5-point scale with "very attractive" and "not attractive" as extreme answers and a neutral point in the middle. The activities involved in captive wildlife tourism (3.48) are the most popular. These are activities that can be done with the whole family and are also able to do close at home and are easily accessible. On the second place there is the wildlife watching tourism (3.29). These activities include mostly adventure which makes them popular. This is the chance to see how animals live in the wild. On the last place there is hunting & fishing tourism. If you like these activities you should really have an interest in hunting or fishing. As can be seen by the low mean (1.83) not many respondents have an interest in these activities which makes this form not really popular.

5.2.4 Willingness to pay

Question five of the questionnaire asked the respondents how much money they would be prepared to pay annually for animal conservation. With a mean of €89,16 this is not very high. This could be due to the fact that most of the respondents are students. A standard deviation of €197,44 shows that there is a huge difference in the amount of money people are willing to pay for animal conservation.

5.3 Relationship between valence and the three dependent variables

In this section, there will be tested whether valence can be a predictor for interest in animal-related tourism, perceived existence value and willingness to pay.

5.3.1 Interest in animal-related tourism

These results make it possible to check whether valence towards different animal species can predict tourist behaviour.

The first test will show whether general valence towards animals can be a good measure to predict interest in animal-related tourism. This correlation was tested for all three forms of animal-related tourism using Pearson's Correlation test. For all

three forms of animal-related tourism, the test did not give a statistically significant result. This means that overall valence towards animals does not have a relationship with interest in animal-related tourism.

The second test will show whether valence towards the four animal groups can be a good measure to predict interest in animal-related tourism. The result of this test can be seen in table 5.9.

Table 5.9 Regression models with valence towards animals groups as predictors for interest in animal-related tourism

	Wildlife-Watching tourism		Captive-Wildlife tourism		Hunting & Fishing tourism	
Predictor	β	R^2	β	R^2	β	R^2
		0.07**		0.08**		n.s
Valence towards Large Wild	0.24**		n.s		n.s	
Valence towards Small 'pest'	n.s		-.20*		n.s	
Valence towards Companion	n.s		.27**		n.s	
Valence towards Farm	n.s		n.s		-.25*	

* Significant at $P < .05$
** Significant at $P < .01$

As shown in table 5.9, valence towards animal groups was a statistically significant predictor for two out of three forms of animal-related tourism (wildlife-watching and captive-wildlife tourism). For wildlife-watching tourism, the best predictor is valence towards large wildlife with β = .24. For captive-wildlife tourism, the best predictor is valence towards the group of companion animals with β = .27. For hunting & fishing tourism, the test did not give a statistically significant relationship with valence towards the four animal groups. This means that valence towards the four animal groups is not a good predictor for interest in animal-related tourism.

5.3.2 Perceived existence value

With these results it is possible to check whether valence towards animal species influences our opinion about the continued existence of specific animal species. The selection of these particular animals can be found in section 4.1.

Table 5.10 Correlations between valence and perceived existence value.

Animal	General valence	Valence towards group	Valence towards animal
Deer	.31	.35 (Farm animals)	**.45**
Rat	.45	.46 (Small 'pest' animals)	**.51**
Wolf	**.36**	.33 (Large Wild)	.32
Goldfish	**.27**	.19 (Companion)	.22
Snake	.41	**.47 (Small 'pest' animals)**	.38
Camel	.29	.30 (Farm animals)	**.30**
Jellyfish	.38	.44 (Small 'pest' animals)	**.52**
Lion	.26	.25 (Large Wild)	**.27**
Whale	.32	.26 (Large Wild)	**.37**
Frog	.43	**.46 (Small 'pest' animals)**	.44
Goose	.30	.33 (Farm animals)	**.48**
Wild Boar	.33	.28 (Large Wild)	**.37**
Donkey	.28	.37 (Farm animals)	**.42**
Shark	.36	.41 (Large Wild)	**.41**
Cockroach	.36	**.42 (Small 'pest' animals**	,41
Eagle	**.40**	.37 (Large Wild)	.39
Spider	.41	**.49 (Small 'pest' animals)**	.41
Mean	***.35***	***.36***	***.39***

In table 5.10, the correlation between valence and perceived existence value is shown. In the table there are three different types of valence for each animal: general valence towards animals, valence towards the animal group and valence towards that particular animal.

This correlation was tested per animal using Pearson's Correlation test. The relation between the importance of existence and the valence per animal is always statistically significant with $p < 0.001$, for every animal and all three types of valence. For each type of valence, the mean is added. As can be seen in table 5.10 valence towards a specific animal is the best predictor with a mean of .39. However, the mean of the two other type of valence (general valence and valence towards group) are both very close. According to Cohen (1988) a mean of almost .4 is between medium and large which means that all three types of valence are a good predictor for perceived existence value but valence towards a specific animal will explain the largest portion of variance. However, on average, these three means are really close.

For most of the animals (deer, rat, camel, jellyfish, lion, whale, goose, wild boar, donkey and shark) the valence towards that specific animal, is the best predictor for perceived existence value.

However, for some animals (snake, frog, cockroach and spider) the valence towards the group explains is the best predictor for the perceived existence of each specific specie. Striking is that all these animals belong to the 'small 'pest' animals'

group. This means that if the respondent is asked: "do you like that group of animals" will predict more about the perceived existence value of each animal than if you will ask the respondent for the specific species.

For the other animals (wolf, goldfish and eagle) the valence towards animals in general will be the best predictor for perceived existence of each of these three specific species. This means that something very general explains more than when you would ask the respondent specifically about that animal.

5.3.3 Willingness to pay

The respondents were asked how much money they annually would want to pay for animal conservation. With a mean of € 89,16, it is interesting to measure whether there is a relationship between valence and willingness to pay.

First, it will be tested whether there is a relationship between valence towards animals in general and willingness to pay. This correlation was tested per animal using Pearson's Correlation test. The test gave a positive result with a p of .03 which is < .05 which means that there is a relationship between valence towards animals in general and willingness to pay. This means that the higher the valence towards animals, the more people are willing to pay for animal conservation.

Secondly, it will be tested whether there is a relationship between valence towards the four groups of animals (Large wildlife, Small 'pest' animals, Companion animals and Farm animals) and willingness to pay. To test this relationship a regression is done. The result of this regression was p = 0.23 which is higher than 0.05. An alpha higher than 0.05 means that there is no relationship between valence towards the four groups of animals and willingness to pay. Not only the four groups together do not have a statistically significant relationship with willingness to pay, also the four groups individually have a p higher than .05 (respectively .46, .51, .63, .70).

To conclude, the results in this chapter have shown that there is a statistically significant relationship between valence and willingness to pay. However, to predict willingness to pay, only valence towards animals in general will be a statistically acceptable predictor.

6. Discussion

This research was conducted to discover whether valence can be a predictive value for three variables: interest in animal-related tourism, perceived existence value and willingness to pay.

6.1 Animal related tourist behaviour

Most studies till now have addressed fear. Other emotions, however, might be important in the context of wildlife (Jacobs, 2007). The hypothesis that was tested in this subsection is:

1. *The higher the valence towards a species, the more likely a tourist is to participate in tourism related to that species.*

Valence towards animal groups was a statistically significant predictor for two out of three forms of animal-related tourism (wildlife-watching $p = .005$ and captive-wildlife tourism $p = .003$). For wildlife-watching tourism, the best predictor is valence towards large wildlife with $\beta = .24$. This means that respondents who have the highest valence towards animals in the group of large wildlife are most likely to participate in wildlife-watching tourism. This sounds logical because animals involved in wildlife-watching activities are mostly large wild animals like whales and elephants.

For captive-wildlife tourism, the best predictor is valence towards the group of companion animals with $\beta = .27$ and $p = .002$. This means that respondents who participate in captive-wildlife tourism, mostly likely have the highest valence towards companion animals. This also sounds like a logical result. The activities of captive-wildlife tourism mostly involve animals which are direct or indirectly not harmful to humans like visiting an aquarium.

For hunting & fishing tourism, the test did not give a statistically significant relationship with valence towards one of the four animal groups. This means that valence towards the four animal groups is not a good predictor for interest in animal-related tourism. This result says that feeling pleasant around animals involved in one of the four animal groups cannot predict anything about tourists involved in hunting & fishing activities.

6.2 Perceived existence value

The second hypothesis that was tested is:

2. *The higher the valence towards a species, the higher the perceived existence value towards that species*

The relation between the importance of existence and the valence per animal is always statistically significant with $p < 0.001$, for every animal and all three types of valence. This means that perceived existence value can be predicted by valence. According to Cohen (1988) a mean of almost .4 is between medium and large which means that all three types of valence are a good predictor for perceived existence value but valence towards a specific animal will explain the largest portion of variance. This means that the hypothesis can be considered as true.

Animals which are beneficial to humans because they are a source of food or resources have a high score on valence. Just like the mammals, rodents and pets they are not dangerous to humans either directly or indirectly. The more we benefit from having the species around us the more we feel pleasant about these species and the more a species is harmful to us (direct or indirect) the more negative we feel when those species are around. Woods' (2000) study states that species that are the least popular are those that are 'least like humans, are wild, unpredictable, dangerous and are not safe-human orientated' (2000: 33).

Using the study of Davey (1994), who used the fear dimension instead of valence, it can be shown that using fear or valence gives other results. This means that the animals that score the highest on fear, will not automatically be the animals that also score the lowest on valence. Where the snake, wasp, rat, cockroach and spider made the top five places on the fear score in the study of Davey (1994), the leech, cockroach, maggot, wasp and jellyfish score the lowest on valence. Besides this there are animals that have a low score on fear and a high score on valence (e.g. cat, squirrel & rabbit).

To conclude, the hypothesis can be considered as true. Perceived existence value can be predicted by all three types of valence.

6.3 Willingness to pay

The third hypothesis tested was:

3. *The higher the valence towards animals, the more people are willing to pay for animal conservation.*

The relationship between valence towards the four groups of animals (Large wildlife, Small 'pest' animals, Companion animals and Farm animals) and willingness to pay did not give a statistically significant result. This means that there is no relationship between valence towards each single animal group and willingness to pay. That there is no statistically significant relationship means that you cannot predict how much people want to pay for animal conservation by their emotions towards animals. This can be due to the fact that willingness to pay is also influenced by many other factors like economic of cultural factors.

However, the results in the result section have shown that there is a statistically significant relationship ($p < 0.05$) between valence towards animals in general and willingness to pay. This means that the hypothesis can be considered as true. The statistically significant relationship between valence towards animals in general says that as you know that people like or do not like animals in general, this can say something about their willingness to pay. This sounds obvious, because people who do not like animals anyway, do not want to spend money for animal conservation since this is not of their interest.

So to conclude, also the third hypothesis can be considered as true. The higher the valence towards animals in general, the more people are willing to pay for animal conservation.

6.4 Comparison with existing literature

The results of this research can be confronted with results of earlier research. For many researches about animal related-tourism, a different distinction is used. According to Holopainen (2012), the best way to classify different activities within animal-based tourism is to describe them either as consumptive or non-consumptive. However, in this study, the classification of Higginbottom (2004) is used. The classification of Holopainen (2012) can be doubted because for consumptive does not necessarily mean unsustainable.

Within this research, an existing list of animals was used according to the study of Davey (1994). Using this study of Davey (1994), who used the fear dimension instead of valence, it can be shown that using fear or valence gives other

results. This means that the animals that score the highest on fear, will not automatically be the animals that also score the lowest on valence.

6.5 Limitations

This research knows some limitations. The first limitation is the short amount of time that was available to do this research. Due to this limited amount of time, it was not possible to collect more than 266 questionnaires. To collect as many questionnaires as possible, the researcher used an online website where respondents could fill in the questionnaire online. That is why the target group of this study is everyone who was willing to fill in the questionnaire. Since the researcher is not in control of who fills in the questionnaire anymore, this means that it will give a wrong image of the population and cannot be generalized beyond the sample. With more time and money it would have been possible to have a more random sample.

The second limitation is about the data collection method, which was used. Questionnaires are standardized, thus it is not possible to explain any points in the questions that participants might misinterpret. In addition, the questionnaire used was for some people also a bit long. In this case, respondents may answer superficially.

Another limitation of this research is the used language. Not everyone can understand English very well. In this case, respondents may have answered differently than they would have in their native language.

In addition, the answers that have been given in the questionnaires might be considered untrue. This can be due to several factors. Some participants might feel like they have to give a pleasant answer, or answer in order to look smart or well informed.

6.6 Implications and further research

This study has addressed emotions of tourists towards wildlife to see whether it can predict specific behaviour, something that is still missing in the existing studies. The results of this research can be a contribution to research about tourist behaviour to fill in this gap. Analysis has shown that there is a correlation between valence and tourist behaviour. For example tour operators could use this information to inform tourists about activities. Besides this, analysis has also shown that there is a relationship between valence and perceived existence value and willingness to pay for animal conservation. Companies dealing with animal conservation could use this information to get more money.

This research was meant to be different from earlier research by measuring valence instead of fear. However, to gain more insight in the topic, the researcher recommends that further research must be undertaken. There are some options to propose new research. First, this research was limited on demographics, the respondent were mainly Dutch (>50%) and mainly students. The average age was between 20-30 years old. It would be interesting to do this research again with a more random sample. Doing this, it would be possible to see whether age or nationality also influences our emotional disposition towards animals and our spending behaviour. Secondly, it could be possible to do this research again with other variables. This way, it would be possible to see whether the results are a result of the way of measuring in this research.

7. Conclusion

This research has looked at the predictive value of emotions by testing the following hypotheses:

1. *The higher the valence towards animals, the higher the interest to participate in animal-related tourism.*
2. *The higher the valence towards animals, the higher the perceived existence value of animals.*
3. *The higher the valence towards animal species, the higher the willingness to pay for animal conservation.*

Measuring valence, the range goes from feeling pleasant to unpleasant (Barrett *et al*, 2013). All three hypotheses can be considered as true, which means that valence predicted interest in animal-related tourism, perceived existence value and willingness to pay.

People will always keep the need to travel because they no longer feel happy being just at the place where they live or work. That is why it is important to know more about their behaviour and to do further research.

As explained in the literature review animals play a huge role in our lives. They are used as pets, for transportation, to eat or for science. During holidays, animals can be seen in captivity, as entertainers, in the wild, part of an activity, or to transport tourists. Unfortunately, the continued existence of all of these animals is not obvious. To make sure that no animals will go extinct, money for animal conservation is needed. However, how much money people want to spend for animal conservation depends on many economic and cultural factors. That is one of the reasons why willingness to pay will always be hard to predict. Another reason is that some people think that there should go a lot of money to animal conservation, but because this is a public good, they do not want to pay themselves directly, with the chance that others also don't.

To conclude, emotions of people will always be hard to measure and to define emotions is hard. Besides this, a gold standard for measuring emotions does not exist (Scherer, 2005). However, this research has explored a bit more in this still undiscovered area of research.

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Appendix

By completing this survey on feelings towards animals, you help me graduating. There are no right or wrong answers; it is just about your opinion. The data will be treated anonymously.
Thanks in advance – Aster van der Wal

Question 1. **Please indicate for each animal in the list below how pleasant or unpleasant you find it.**
(please check the box that reflects your opinion best)

	Very unpleasant	Unpleasant	A bit unpleasant	Neither pleasant nor unpleasant	A bit pleasant	Pleasant	Very pleasant	No opinion	I don't know this species
Chicken	□	□	□	□	□	□	□	□	□
Duck	□	□	□	□	□	□	□	□	□
Hamster	□	□	□	□	□	□	□	□	□
Pig	□	□	□	□	□	□	□	□	□
Cow	□	□	□	□	□	□	□	□	□
Budgie	□	□	□	□	□	□	□	□	□
Sheep	□	□	□	□	□	□	□	□	□
Cat	□	□	□	□	□	□	□	□	□
Rabbit	□	□	□	□	□	□	□	□	□
Squirrel	□	□	□	□	□	□	□	□	□
Eel	□	□	□	□	□	□	□	□	□
Seal	□	□	□	□	□	□	□	□	□
Dog	□	□	□	□	□	□	□	□	□
Guinea Pig	□	□	□	□	□	□	□	□	□
Eagle	□	□	□	□	□	□	□	□	□
Goat	□	□	□	□	□	□	□	□	□
Owl	□	□	□	□	□	□	□	□	□
Camel	□	□	□	□	□	□	□	□	□
Gerbil	□	□	□	□	□	□	□	□	□
Frog	□	□	□	□	□	□	□	□	□
Goose	□	□	□	□	□	□	□	□	□

Turtle	□	□	□	□	□	□	□	□	□
Horse	□	□	□	□	□	□	□	□	□
Goldfish	□	□	□	□	□	□	□	□	□
Lion	□	□	□	□	□	□	□	□	□
Bear	□	□	□	□	□	□	□	□	□
Alligator	□	□	□	□	□	□	□	□	□
Crocodile	□	□	□	□	□	□	□	□	□
Tiger	□	□	□	□	□	□	□	□	□
Wolf	□	□	□	□	□	□	□	□	□
Shark	□	□	□	□	□	□	□	□	□
Hippo	□	□	□	□	□	□	□	□	□
Snake	□	□	□	□	□	□	□	□	□
Octopus	□	□	□	□	□	□	□	□	□
Cockroach	□	□	□	□	□	□	□	□	□
Spider	□	□	□	□	□	□	□	□	□
Beetle	□	□	□	□	□	□	□	□	□
Maggot	□	□	□	□	□	□	□	□	□
Worm	□	□	□	□	□	□	□	□	□
Leach	□	□	□	□	□	□	□	□	□
Bat	□	□	□	□	□	□	□	□	□
Wasp	□	□	□	□	□	□	□	□	□
Lizard	□	□	□	□	□	□	□	□	□
Rat	□	□	□	□	□	□	□	□	□
Slug	□	□	□	□	□	□	□	□	□
Bee	□	□	□	□	□	□	□	□	□
Mouse	□	□	□	□	□	□	□	□	□
Jellyfish	□	□	□	□	□	□	□	□	□
Moth	□	□	□	□	□	□	□	□	□
Snail	□	□	□	□	□	□	□	□	□
Fly	□	□	□	□	□	□	□	□	□

Deer	□	□	□	□	□	□	□	□	□
Wild Boar	□	□	□	□	□	□	□	□	□
Elephant	□	□	□	□	□	□	□	□	□
Donkey	□	□	□	□	□	□	□	□	□
Whale	□	□	□	□	□	□	□	□	□
Panda	□	□	□	□	□	□	□	□	□
Fox	□	□	□	□	□	□	□	□	□

Question 2. **How important do you consider the continued existence in the future of the animals listed below?** (for each animal, please check the box that reflects your opinion best)

	Not important	**A little important**	**Moderately important**	**Important**	**Very important**	**No opinion**	**I don't know this species**
Deer	□	□	□	□	□	□	□
Rat	□	□	□	□	□	□	□
Wolf	□	□	□	□	□	□	□
Goldfish	□	□	□	□	□	□	□
Snake	□	□	□	□	□	□	□
Camel	□	□	□	□	□	□	□
Jellyfish	□	□	□	□	□	□	□
Lion	□	□	□	□	□	□	□
Whale	□	□	□	□	□	□	□
Frog	□	□	□	□	□	□	□
Goose	□	□	□	□	□	□	□
Wild Boar	□	□	□	□	□	□	□
Donkey	□	□	□	□	□	□	□
Shark	□	□	□	□	□	□	□
Cockroach	□	□	□	□	□	□	□
Eagle	□	□	□	□	□	□	□
Spider	□	□	□	□	□	□	□

Question 3. **To what extent do you find the following forms of tourist activities attractive?** (for each form of tourism, please check the box that reflects your opinion best)

	Not attractive	A little attractive	Moderately attractive	Attractive	Very attractive	No opinion	I don't know this form of tourism
Going on a safari	□	□	□	□	□	□	□
Trophy hunting	□	□	□	□	□	□	□
Hiking tours with donkeys	□	□	□	□	□	□	□
Predator bird watching tours	□	□	□	□	□	□	□
Fly-fishing	□	□	□	□	□	□	□
Going to the zoo	□	□	□	□	□	□	□
Visiting a wildlife center	□	□	□	□	□	□	□
Swimming with dolphins	□	□	□	□	□	□	□
Hunting for consumption	□	□	□	□	□	□	□
Coral reef diving	□	□	□	□	□	□	□
Whale watching tours	□	□	□	□	□	□	□
Visiting an aquarium	□	□	□	□	□	□	□
Deep sea fishing	□	□	□	□	□	□	□
Shark cage diving	□	□	□	□	□	□	□

Question 4. In general, to what extent do you like or dislike animals? (please check the box that reflects your opinion best)

Dislike very much	Dislike	Dislike a bit	Neither dislike nor like	Like a bit	Like	Like very much
□	□	□	□	□	□	□

Question 5. **What is your sex?** (please check one)

□ Male

□ Female

Question 6. **What is your age?** (please write down your age in years)

……

Question 7. **In which country were you born?** (please write down the country)

……

Question 8. **Are you a student?** (please check one)

□ No

□ Yes

If you would like to be informed about the results of this research please write down your email address below.

……