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Nature-based experiences' influence on tourists' self-awareness of environmental impact

A case study of Serengeti National Park and Ngorongoro Conservation Area, Tanzania

Master's thesis in Natural Resources Management
Supervisor: Haakon Lein, Stig Halvard Jørgensen
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Abstract

The remaining protected ecosystems in the world are under great pressure from human exploitation. At the same time, nature-based tourism is the fastest growing segment of the tourism industry. In this way, nature-based tourism has the potential to play an important role in connecting people and nature, a connection that can be important for the future of these areas. Nature-based tourism however, also has the potential to increase human pressure on these areas in an unsustainable way. Because of the difference between these potential scenarios, it becomes important to understand the relationship between tourists and nature. This study contextualizes this relationship by framing it within a management context of protected areas. The objective is to investigate whether tourism experiences affects tourist's perception of their own environmental impact related to nature-based tourism in protected areas. This will also be used in a discussion of its potential implications for the future management of these protected areas. A quantitative approach was chosen for the study, and a tourist survey, using questionnaires, was used to collect the data. This was done in two of the protected areas in Tanzania, Serengeti National Park and Ngorongoro Conservation Area. These are both world class icons for nature-based tourism and conservation, and attracts tourists from all over the world. The study identified five dimensions of the tourism experience that are affecting the way tourists are perceiving their experience. These experiences were also argued to influence the tourists understanding of their own environmental impact on the protected areas. Differences in a tourist's environmental beliefs (measured as level of ecocentrism), were found to be especially important for creating differences between the tourists' perception of their experience. The implications of the results are discussed in the context of management of protected areas and has a focus on the relationship between tourism and conservation.

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Halvor Carstensen Føyn
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Acronyms and abbreviations

UNWTO – The World Tourism Organization

UN – United Nations

NCAA – Ngorongoro Conservation Area Authority

TANAPA – Tanzania National Park Association

WDPA – The World Database on Protected Areas

IUCN – The International Union for Conservation of Nature

UNEP – The United Nations Environmental Programme

PA – Protected Area

SNP – Serengeti National Park

NCA – Ngorongoro Conservation Area

1 Introduction

The global tourism industry is growing fast and nature-based tourism is one of the fastest growing sectors. Because of this growth, it is believed to be able to generate substantial economic resources, both for conservation efforts and local development. This is especially important in today's context, where protected areas (PAs) to a large extent need to provide economic justification for their existence (Balmford et al., 2009). This view of tourism as a contributor to conservation efforts also explains the strong link between nature-based tourism and PAs (The World Tourism Organization, 2019b).

Nature-based tourism can be beneficial to the natural environment and ecological condition in PAs. This is based on how tourism could contribute to conservation by creating an economic incentive to create the PA, and by contributing to the financial operation of it (Gill, 2015). In this regard, Moyle, Weiler, and Croy (2013) argue how the quality of the natural environment is essential to nature-based tourism. The relationship between the tourism industry and the environment however, is complex. Activities linked to the tourism industry, for instance the building of infrastructure and visitor facilities could affect the environment. These activities could potentially lead to negative impacts, which in the end, could lead to a gradual degradation of the environment on which they depend. Deng, Qiang, Walker, and Zhang (2003) argue how nature-based tourism eventually will lead to some level of disturbance or damage of the environment, based on the nature of tourism as a user of the natural resources in the PA. In this way, they argue how overuse and associated tourism development are one of the main threats to the ecological condition in the PAs. They also argue how this can affect the quality of the visitor experience. Deng et al. (2003) argues how little research has been done on how tourists understand their own impact on the environment in this context.

The remaining protected ecosystems in the world are under great pressure from human exploitation. This is also the case for the Serengeti-Mara ecosystem in northern Tanzania and southern Kenya. On the Tanzanian side, the ecosystem encompasses Serengeti National Park (SNP) and Ngorongoro Conservation Area (NCA), as well as several game reserves. The field work of this study was conducted in SNP and NCA. These PAs are outstanding examples of preserved biodiversity and nature that has existed for millennia. For decades, tourism has also existed here and attracts tourists from all over the world (Sinclair & Dobson, 2015, p. 1). In 2010, management officials working with the PAs in Tanzania made a list of priorities for

future research. The goal was to highlight management concerns in the PAs based on previous and present research. Visitor satisfaction and attitudes was one of the topics that was classified as most important, and was introduced to enhance the quality of experiences for visitors. Another important topic was an assessment of the visitor capacity in the PAs. It was based on experienced over-use in the Mara reserve, Kenya, which had had negative effects on both wildlife and tourist experiences. Another important topic mentioned was the impact of tourism facilities on the PAs' resource values over time. Together, these priorities are based on a growing number of tourists and the need for informed tourist management decisions for the future (Sinclair, Dobson, Metzger, Fryxell, & Mduma, 2015, p. 805).

Purpose of study

This study attempts to increase the understanding of the relationship between tourists and nature. A relationship, that as mentioned above, could influence the future management strategies of the PAs, linking the tourism industry and conservation. The research question is: *Whether the tourism experience affect the tourist's understanding of their own environmental impact related to nature-based tourism.* This will also be used in a discussion of its potential implications for the future management of PAs. To achieve this, the study will investigate the following objectives:

- Research objective 1. Explore which dimensions of the experience that influence the tourist's understanding of their own environmental impact on the protected areas.
- Research objective 2. Explore how variation in tourists' socio-demographic characteristics, familiarity with place and environmental beliefs create differences between the tourists' perception of these dimensions.

Rationale

Existing research on the impact of tourism tend to have either a focus on tourist's satisfaction rates with destinations, or host communities' perception of impacts from tourism. Environmental impacts related to tourism are also studied, but commonly from the numerical perspective of natural sciences. This study provides a new perspective on this topic by looking at whether the experience is affecting the tourists own understanding of their environmental impact related to the nature-based tourism in PAs. This perspective, from a viewpoint of social sciences, is believed to add new information, information that can contribute to a more holistic view on future management of PAs.

2 Background

In this chapter, the different sections will create a backdrop for the study. Each section will contribute to creating a context for which the later chapters of the study will be understood. The first section will present the study area and its development from past to present. Then, a brief overview of global tourism trends, with a special focus on nature-based tourism will be presented. In the end, the concept of conservation and the most common strategies will be presented. Hopefully, this chapter can contribute to an increased understanding of the relationship between the tourism industry and conservation, a relationship that is important for understanding the complex management situation in the study area.

2.1 Study area

The Serengeti-Mara ecosystem is located in the northern part of Tanzania and southern parts of Kenya. It encompasses many different categories of PAs, but this study will focus on the Serengeti National Park (SNP) and the Ngorongoro Conservation Area (NCA). The location of the PAs can be seen in figure 1 below.

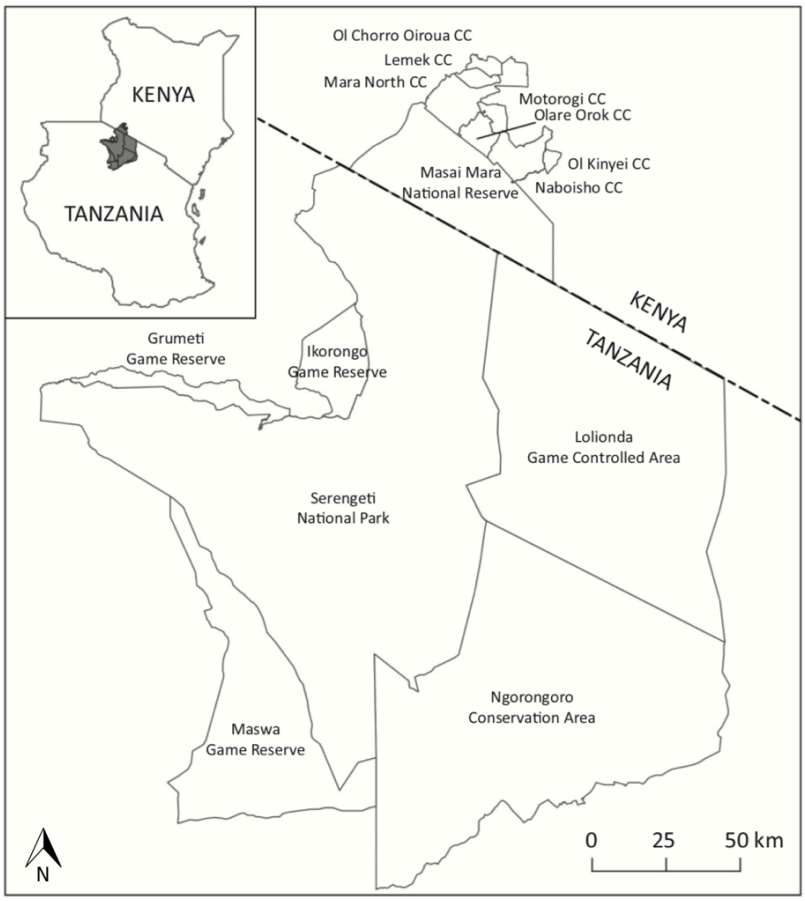

Figure 1. Map of Serengeti National Park, Ngorongoro Conservation Area and adjacent protected areas. Adapted from (Witt, Kiambi, Beale, & Van Wilgen, 2017, p. 2).

Tanzania

In 2015, tourism was the most important contributor for generating foreign exchange in Tanzania. The nature-based tourism is the most important tourism sector and is pulling international visitors from all over the world. Tanzania's iconic African nature and multitude of different PAs are the centre of this tourism industry and even includes PAs with a world heritage status. Because of the role tourism has in improving the economy, tourism is also believed to be an ideal driver of growth and poverty reduction (Tanzania National Bureau of Statistics & Bank of Tanzania, 2017). Tourism number of international visitors to Tanzania has also been continually increasing over the last decades. In the year 2000, the number of international visitors was 501,669 (Ministry of Natural Resources and Tourism: Tourism Division, 2009, p. 5). In 2015, the number of international arrivals had increased to 1,137,182 (Tanzania National Bureau of Statistics & Bank of Tanzania, 2017, p. 5).

Serengeti National Park

The SNP (14763km^2) is governed by Tanzania National Park Association (TANAPA) and is the cornerstone of the Serengeti-Mara ecosystem. The SNP is defined by "the great migration", a migration containing over one million wildebeest, zebra and antelope. This also makes it a biologically important conservation area on a global scale (Sinclair, Dobson, Mduma, & Metzger, 2015, p. 12). These properties have also made the area a famous tourist site and continues to generate revenue that is an important contributor to the funding of other PAs in Tanzania, and the Tanzanian economy (Sinclair & Dobson, 2015, p. 1). The SNP has changed significantly over the years. Before the 1920s it was an uncontrolled area were international tourists would go on hunting trips, shooting large numbers of animals in a single trip. In 1929 however, the government declared the area a closed reserve. This meant much in paper but it took time before it had any physical effect in terms of monitoring and actual limiting actions. At that time, the reserve then covered many of the various PAs that exist today. The modern SNP however was established in 1950 (Sinclair, Dobson, Mduma, et al., 2015, p. 22). One challenge with borders of today's SNP is that they were based on inadequate information about the wildebeest migration. The migration pattern fluctuates somewhat and goes through parts of the NCA as well. In practice, this means that the future success of the migration is dependent on coherent management efforts between both SNP and NCA. Increasing human settlement along the park borders are also a challenge. This causes political pressure to allow human development and potentially necessary changes in the boundaries to achieve this (Sinclair, Dobson, Mduma, et al., 2015, p. 27). Inside the park,

tourism development and tourist numbers has increased over the years. From 2006/2007 to 2011/2012, the visitor numbers in SNP increased from 272,035 to 330,412 (World Bank Group, 2015, p. 37). Finding recent sources for continuous visitor numbers are difficult, but one newspaper article reported visitor numbers in SNP to have been 351,597 in 2016/2017 (Ubwani, 2018a). Fluctuation in numbers over the years can be seen however, and Kaltenborn, Nyahongo, and Kideghesho (2011) point out how political, social and economic changes in Tanzania or on a global scale can cause such fluctuations. As examples, they point to the impact of terrorist attacks like 9.11, political instability in neighbouring countries like Kenya and the economic crisis of 2007/2008. What the reported visitor numbers indicate however, is a general increase in visitor numbers over time.

Ngorongoro Conservation area

The NCA (8288km^2) is located south-east of the SNP and is governed by the Ngorongoro Conservation Area Authority (NCAA) (Sinclair, Dobson, Mduma, et al., 2015, p. 12). The NCA is known to be one of the best wildlife sanctuaries in the world and attracts a lot of tourism because of this status. One of the reasons for this status is because it has one of the largest concentrations of wildlife in Africa. The spectacular Ngorongoro crater also creates the perfect stage for experiencing this high density of mammalian predators, together with iconic species such as elephant, hippopotamus, black rhino and other large ungulates (Galvin, Boone, McCabe, Magennis, & Beeton, 2015, p. 500). What make the NCA different from the other PAs in Tanzania is its special management situation as a conservation area. NCA is a multiple-use area, which means that multiple goals exist at the same time. Some of these goals are the conservation of wildlife, sustainable human livelihoods, Masaii culture, and tourism. These aspects have been part of shaping the NCA to what it is today but continue to be the foundation of the challenges the NCA is facing at the same time. This includes human population changes and associated land use changes (Galvin et al., 2015, p. 483). The concern is caused by the potential increase of stress on the ecosystem this increase in local people could lead to. At the same time however, tourism development and tourist numbers has also increased. The largest growth in residents has been in the village were NCAA personnel lives (Galvin et al., 2015, p. 501). From the year 2000 to 2005, visitor numbers in the PA increased from 139,565 to 234,452 (Nyahongo et al., 2007). Allegedly, a management plan from 1996 reported that the Ngorongoro crater in NCA was approaching a saturation point where a further increase in visitors could cause degradation of both wildlife and the environment. As seen above, the numbers continued to grow towards the year 2007. Congestion of tourist

vehicles linked to the rising tourist numbers also became a bigger challenge at that point and has continued to be a challenge in the NCA (Nyahongo et al., 2007). As for SNP, finding recent continuous visitor numbers for the NCA was also difficult. A newspaper article however, reported the visitor numbers for the NCA to have increased from 567,983 in 2015 to 601,448 in 2017 (Ubwani, 2018b). This indicate that the NCA has had an increase in visitor numbers in the same way as the SNP. The difference is that the increase in visitor numbers for the NCA has been much larger.

2.2 Tourism

The World Tourism Organization (UNWTO) is one of the specialized agencies of the United Nations. Their main objective is to promote responsible, sustainable and universally accessible tourism. As the leading international organization in tourism, they also promote tourism as a driver of inclusive development, economic growth and environmental sustainability (The World Tourism Organization, 2019a). They also address the challenge of developing tourism in a way that ensures sustainable practices in relation to use of natural resources, socio-cultural impact and the pressure on infrastructure, such as mobility and congestion management (World Tourism Organization, 2018b).

According to the World Tourism Organization (UNWTO), there were 1,326 million international tourists in 2017. Together, these arrivals generated a total of 1,340 billion US$ (World Tourism Organization, 2018a). This makes Tourism the third biggest export category in the world after chemicals and fuels. In many developing countries however, it is the biggest export category. On a global scale, the tourism industry comprises 7% of the worlds exports, 10% of the worlds GDP (direct, indirect and induced) and creates 1/10 jobs (World Tourism Organization, 2018a). International tourism has also been growing faster than the predicted 3.8% during the period from 2010 to 2020, a prediction made by the UNWTO in their Tourism Towards 2030 long-term forecast. In 2017 international tourism grew by 7% and this growth is expected to have continued in 2018 (World Tourism Organization, 2018a).

The management of the tourism sector in terms of adequately seeing both visitors and residents in local places has always been part of tourism management. The buzzword *overtourism* however, has emerged from the ever increasing number of tourists that has been rapidly growing over the last few decades (World Tourism Organization, 2018b). In the end,

it is a consequence of a rise in negative attitudes within the local populations towards tourism. This is based on their perception of overcrowding and multiple other nuisances attributed to the presence of tourism. This has also resulted in protests in some cities in southern Europe (Seraphin, Sheeran, & Pilato, 2018), and caused the term 'overtourism' to spread through media (World Tourism Organization, 2018b). UNWTO has no official definition of the term but presents this definition in their report on 'overtourism':

"the impact of tourism on a destination, or parts thereof, that excessively influences perceived quality of life of citizens and/or quality of visitor's experiences in a negative way" (World Tourism Organization, 2018b).

In this way, it is understood as the opposite of their view on responsible tourism which is about how tourism should be used to improve places, both for living and visiting. This is also why the UNWTO advocate for a strong relationship and collaboration between the tourism sector and local communities. In this way, it is believed that one can achieve management that respects the capacities of a destination based on its specificities. This also introduces the concept of *tourism carrying capacity* which UNWTO defines as:

"the maximum number of people that may visit a tourism destination at the same time, without causing destruction of the physical, economic and sociocultural environment and an unacceptable decrease in the quality of visitors' satisfaction" (World Tourism Organization, 2018b).

If one wants to achieve a comprehensive vision of the impacts from tourism however, UNWTO also highlights the importance of being able to define and set the right mechanisms for monitoring the management of this carrying capacity and what they call 'the limits of acceptable change' (World Tourism Organization, 2018b).

As mentioned above, the focus on 'overtourism' has mostly been concentrated on cities, and especially on cities in southern parts of Europe. In news articles and other media however, there is an increase in cases on 'overtourism' related to nature-based tourism as well. One example of this is the increased pressure on iconic attractions in natural environments such as Machu Picchu, Peru's ancient Inca city. In Thailand, the government have closed down the Maya Bay, known from the movie 'The Beach' because of tourisms impact on the ecosystem.

On Iceland, there has been an average of 25% growth in tourism numbers every year since 2010. This has put Iceland's main attraction, the natural environment, under pressure (Street, 2018).

2.3 Nature-based tourism

For nature-based tourism, the natural environment is very important for attracting visitors. This also mean that the quality of the natural environment at the destination is crucial. For many African national parks, the management has to a large degree been influenced by an idealized image of what these areas should look like. Scenic landscapes, full of wildlife, is usually the important part of such images (Kaltenborn et al., 2011). There are however many ways of conducting nature-based tourism. Since the early 1990s, UNWTO has been especially involved in, and fronted what is known as ecotourism. Ecotourism is part of their framework of sustainable tourism and is understood as nature-based tourism that meets certain criteria (The World Tourism Organization, 2019b). The International Ecosystem Society (TIES) has defined the concept of ecotourism as:

"Responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education". Education is meant to be inclusive of both staff and guests (The International Ecotourism Society, 2019).

The difference between ecotourism and "regular" nature-based tourism is debatable. This debate however, will not be addressed in this study. In this study, ecotourism will rather be seen as part of the multitude of different approaches that all make up the general concept of nature-based tourism. Nature-based tourism is thus seen as all types of travel with the main purpose of experiencing nature and/or wildlife.

In a study by Balmford et al. (2009), 280 PAs across 20 countries were checked for changes in visitation numbers. A growth in visitation numbers was found for 15 out of the 20 countries. Their study also found a negative association with visits to PAs and per capita income, a trend that was also matched by foreign arrivals and changes in GDP. An explanation for the negative link between visitation growth and wealth could not be found based on the existing data material. Some suggestion was made however. One suggestion is that formal PAs in wealthier countries has become less attractive to nature enthusiast because

of increasingly crowded conditions. Would-be visitors might therefore have switched to less public areas where visitors do not get counted. Another explanation could be that nature-focused people move from domestic destinations to foreign destination as they become wealthier. In this way, alternative destinations in developing countries becomes less costly and more accessible. So, while some wealthier countries show a small decline in nature-based tourism, most developing countries experience an increase in visitation numbers to their PAs, either matching global tourism trends, or even exceeding them.

Balmford et al. (2009) point out how nature-based tourism provides an economic incentive for conservation of natural areas. Good management practices can then lead to a quality profile, which again influence future visitation numbers. This increase in visitation numbers are no guarantee for an increase in reinvested revenues in conservation however. In the same way, it does not automatically lead to an increase in management focus and monitoring of tourism impacts. In addition to these concerns, international nature-based tourism is facing other challenges too. On a large scale, one of these are the accompanied CO_2 emissions, linked first of all to air travel. Another, is tourisms vulnerability to changes in the political, physical or economic situation at the local or global level. On a smaller scale, disturbance to wildlife and local people becomes important. This also includes the distribution of revenues to local communities. What this list of concerns indicate, is that nature-based tourism is dependent on effective planning and management, and local participation to be able to be sustainable. To the extent that these criteria can be met however, it has the potential to contribute to both conservation and sustainable development.

2.4 Conservation

Because of their similarities, the meaning of conservation and preservation are sometimes used interchangeably. A clarification and differentiation of the two is therefore seen as useful before continuing the chapter. Preservation is about maintaining or restoring something to its current or past state, for some foreseeable future. Conservation is about protecting resources with a purpose of it having some future use (Attfield, 2015, p. 147). Attfield (2015) also argue however, that in practical use, their purposes often blur together. In the case of conservation of biodiversity for instance, preservation of the landscape might be the best conservation strategy for biodiversity. In this way, conservation of wildlife often comes hand in hand with the preservation of the natural environment in general. As a critique to the rigidness of

preservation, Attfield (2015) argues how the dynamic nature of biological processes makes it futile to try to preserve a phase of a continuous natural sequence for the foreseeable future. PAs however, is the most common strategy for preservation and conservation today. In this strategy, humans are excluded to varying degrees and are often called 'the fortress model'.

African national parks are often managed based on idealized images of what the natural environment "should" look like. This has caused the protected areas to be established in areas where the scenic quality is high, and where wildlife is abundant. Tourism might have been crucial for achieving the legitimacy for establishing these protected areas, but its impact on local people has sometimes caused them to be controversial. Political and economic reasons, rather than ecological conservation reasons might also have been an important incentive for setting aside more land for conservation purposes. This is based on the contribution of tourism to national budgets in East African countries (Kaltenborn et al., 2011). Okello and Yerian (2009) also explain how these incentives make it important to pursue nature-based tourism with care. This is because it depends on the natural environment itself, and that an over-exploitation of these areas could lead to a degradation of the foundation for what make it possible to use in the first place.

The World Database on PAs (WDPA), show that approximately 15% of global terrestrial areas were classified as PAs in 2017 (ProtectedPlanet, 2019). There is also signs that indicate that the trend of increase in terrestrial PAs are levelling off. One suggested reason for this is that the easiest areas to protect have already been protected. These areas could have been less useful for human use in terms of resource extraction, farming, grazing or been regions were relatively few people lived (Kareiva & Marvier, 2011, p. 132). Mascia et al. (2014) show how there has been a growing number of nations that reduce or alter the size of their PAs. They call this PADDD, which is an abbreviation for Protected Area Downgrading, Downsizing and Degazettment. They also point out that pressure from locals that feel undercompensated for the loss of land, together with government interests in resource extraction are the most important causes. Issues with data-quality and the dynamic nature of physical changes on the ground make mapping of PAs challenging too. (Lewis et al., 2017) explains this by showing how the continual growth narrative and the counter-narrative about removal of PAs both show signs of being over simplistic. The former because the latest growth of PAs was almost entirely based on growth of marine PAs. The latter because some of the areas that were removed got re-established again. In the end, it comes down to how the quality of PAs are

valued. If places under little human pressure gets protected, while heavily pressured and important conservation areas go unprotected, then global statistics may present a hollow victory (Kareiva & Marvier, 2011, p. 138). Either way, PAs in tropical countries have proven to be beneficial for protecting landscapes and the biota (animals and plants) under conditions of under-funding and extensive land-use pressure. Monitoring and enforcement, together with sufficient funding and active science-based management are seen as some of the most important factors that could increase the success of the PAs in the future (Bruner, Gullison, Rice, & Da Fonseca, 2001; Kareiva & Marvier, 2011).

This chapter has created a backdrop for which the remaining chapters will be understood. First it gave an overview of the study areas. Then, the present state of international tourism with a special focus on nature-based tourism was presented. In the end, the concept of conservation was presented to better understand the relationship between the study areas as PAs and tourism.

3 Theoretical framework

In a literature review of tourists' perception about tourism impacts, Gill (2015) show how tourism literature to date, has had a lacking focus on the tourists' own perception of their impact related to tourism. The focus on the impacts of tourism has usually been part of the development of the concept of sustainable tourism, as a contrast to mass tourism. This includes cultural tourism, heritage tourism, and for the case of nature-based tourism, ecotourism. These believed to be more sustainable types of tourism also introduced a focus on how tourists' behaviours affect economic, social and environmental impacts at the destination. This however, was mostly investigated through a view on the destinations residents' perceptions of these impacts. This view is believed to have contributed to the lack of focus on the visitors' understanding of their own impact on the destinations. From the existing literature, Gill (2015) also points out how some theoretical approaches and influencing aspects have been frequently used to investigate the residents' perception of the impacts from tourism. Some of these are; tourist motivations, destination image, perceptions, familiarity with the place, authenticity, and socio-demographic characteristics. Below these will be presented in depth in an attempt to use them in the context of how an experience can influence the tourists' perception of their environmental impact related to the nature-based tourism in PAs. To better be able to understand what it is in the tourism experience that affect tourist's understanding of their own environmental impact, the direction of the study will now turn to theory that investigate influencing factors of the perception of experiences. To achieve this, the chapter will present a theoretical framework, containing different relevant perspectives.

3.1 The environmental impact of tourism

(Cohen & Cohen, 2012) address how the environmental impact of tourism is part of the sustainable tourism concept. This concept developed from the discourse of sustainable development and is challenging the neoliberal economic growth model that drives global tourism. The research that is done on sustainable tourism has had a focus on the ethical aspects of the society-environment relationship. The acknowledgement of this relationship has also caused a focus on what has become known as ethical consumption. Ecotourism and other concepts was developed as an allegedly more environmentally friendly alternative to mass tourism. Despite this, the question of improvement of the relationship between the natural environment and tourism is both debatable and contentious. The perhaps biggest

challenge, which both relates to climate change and the management of global destinations as common pool resources, is the transport sector's impact. The mitigation and adaptation of the air travel industry is especially important in this regard, and addresses the relationship with consumer behaviour in tourism. In relation to the negative aspects of tourism however, there are also some challenges with management of these impacts. This is linked to the fact that measurements of negative impacts happen after they have already occurred. This also creates a reactively approach to the management and results in mitigation efforts, rather than pre-active management (Moyle et al., 2013). This management situation can be linked to what is called 'extinction debt' in conservation sciences. In this theory, there is a temporal disconnect between the time a natural environment is experiencing degradation, and the loss of biodiversity that will happen eventually. Such a time-difference between the cause and effect makes management challenging (Kareiva & Marvier, 2011, p. 282). The continual growth in global tourism presented above, show the importance and urgency of good management strategies for tourism. In the case of nature-based tourism, this leads to an increase of pressure on previously less disturbed places of the world. It also introduces questions about the potentially paradoxical nature of this type of tourism. The more attractive a destination seems because of its biodiversity, landscapes or culture, the more likely it is that visitor numbers will rise. This could then potentially degrade the destination, which in turn might degrade the quality of the experience as well (Hillery, Nancarrow, Griffin, & Syme, 2001, p. 854).

A study by Hillery et al. (2001), addresses a tendency where tourists have a limited perception of long-term environmental wear, but are more sensitive to direct impacts such as litter etc. They also say however, that research show a slight tendency for tourists to have developed an increased awareness of long-term environmental impacts over the last few decades. Kaltenborn et al. (2011) point out that visitors in tourism studies often report that they are satisfied with the current conditions. They also seem to perceive their own environmental impact from their tourism activity to be small. What they seem to be concerned about however, are negative changes linked to rising tourist numbers in the future. In their study in SNP, they argue that the visitors not necessarily are aware of the impacts from tourism and the long-term changes it causes to the PAs. As an explanation, they point to the fact that visitors only spend a short time in the PAs and that they mostly see large open environments with limited impacts when they are there. They also point to how the tourists experiences in SNP is kept away from the reality of rural Tanzania to some extent. As examples, they point out that the access roads to the park avoid going through local communities and that poaching

is something almost never encountered by tourists. In a study of the northern circuit of protected areas in Tanzania, Okello and Yerian (2009) point out how guides and drivers are deciding most of the tourists daily activity. This includes the safari experience with game drives, but also other logistics such as driving routes. They therefore argue that the tour company is very important for the trip quality and image creation. They also conclude that collaboration between the tour companies and the management authorities is important for the future tourism satisfaction and conservation.

When recognizing that these nature-based tourism destinations have potential limits for tourism, it introduces the concept of carrying capacity. Physical, ecological, economic, and perceptual carrying capacities are all examples of more specific types of this concept (Hillery et al., 2001, p. 854). To better understand the relationship between tourists and the destination, the concept of carrying capacity and the development of the research field will be presented.

3.1.1 Carrying capacity

The concept of carrying capacity was originally linked to wildlife management and the question of human population growth and resource use. Later, it was introduced to recreation research. In early research, and still influencing the present, there was suggested that it should be split into biophysical and social carrying capacity. The biophysical branch of the concept was linked to the original approach that had a numerical way of understanding carrying capacity. The social carrying capacity however, was argued to vary, and to depend on what the visitors sought during a visit to the destination. It also led to the conclusion that the average visitor does not exist, and that different visitors will have different perceptions of what the conditions should be (McCool & Lime, 2001, p. 378). Understanding social carrying capacity as influenced by visitor's expectations for a destination also led to a new argument. If it was the socially determined objective behind establishing an area that determined the carrying capacity, this meant that there could not be one specific carrying capacity for an area, but rather a multitude of possible carrying capacities (McCool & Lime, 2001, p. 376). What this does however, is question the use of capacity in management. Because, if there are several different objectives, leading to several different capacities, then how could science play a role in this process? This led to the realisation that management through a choice of objective is a social, not a numerically based process. And if it is a social process, determining how much change is an acceptable amount is a based on social judgement. The

decision will in this way be informed by science, but be a product of political and ethical discourses (McCool & Lime, 2001, p. 377). This can guide management to a point where a decision can be made about how much change is acceptable. It will increase the understanding of the linkages and relationships that exist. It will also increase the understanding of the outcomes from choosing different alternatives. What it does not do however, is give an answer to the question of how many visitors are too many? Part of the problem with this question can be explained by the non-linear relationship between amount of use and impact. In this way, little use is causing disproportionately large impacts. When one have higher levels of impact however, increased use levels cause disproportionately small increases in impacts (McCool & Lime, 2001, p. 378). Stankey and McCool (1984) argued that the question of how many is too many did not capture the actual question. They argued that it should rather be a question of acceptable change from natural conditions, given the determined objectives for the area.

In existing research, there is still a focus on trying to identify both physical and social numerical carrying capacities for tourism destinations, or even nations (Brown, Turner, Hameed, & Bateman, 1997; Saveriades, 2000; Simón, Narangajavana, & Marqués, 2004). It is argued however, that these numerical carrying capacities will fail to mitigate impacts. This is based on the assumption that tourism behaviour, tourism development practices, and other variables create conditions that are to dynamic for the static Malthusian-inspired numerical carrying capacity models (McCool & Lime, 2001, p. 380). Wagar (1974) argued that whether impacts are seen as damage or not, are based on the objectives that are set for the purpose of an area. Whether impact is understood as damage therefore depends on management objectives, judgements made by experts and the values held by the public. Based on these arguments, changing management strategies or tourist behaviour may reduce impact (potential damage) more effectively than limiting use based on numbers. Research also show that concentrating use in small areas leads to less impact and it also makes management more efficient (McCool & Lime, 2001, p. 380). It is also important to remember that any amount of use will result in some amount of change in the existing biophysical or social conditions. Those changes might be minimal and unmeasurable at the time, it is however impossible for it not to have a present or future impact at some level. To have a numeric approach to carrying capacity therefore becomes unrealistic because it is based on the premise that human-environmental systems are stable. Without such a premise, one specific number making up the carrying capacity could hardly be developed. These systems however, are not static. They

are highly dynamic, and as explained earlier, even non-linear. The carrying capacity will therefore be dependent on changing environmental and social changes that occur, creating multiple carrying capacities that needs to be estimated (McCool & Lime, 2001, p. 383). Tourism should therefore rather be understood as a series of trade-offs between different interests over time (McCool & Lime, 2001, p. 381). Instead of the question of how many, the focus should be on what the desirable and acceptable conditions for the area or tourism destination should be. When this is decided, the question of which management strategies that can lead to these results can be discussed (McCool & Lime, 2001, p. 383).

There are many different examples of such planning frameworks. Limits of Acceptable Change (LAC) and Visitor Impact Management (VIM) are just two examples. What is common for these frameworks however, are that they first agree on overall goals, and then on the means to achieve them. Scientific knowledge is also often mixed with local knowledge throughout the management process, a trait that often increases public legitimacy. This makes them decision-making frameworks, rather than scientific theories. These management strategies also let managers evaluate results during the monitoring process, which again let them use the results as feedback to the management system itself. This makes it a continues management strategy that better cope with the dynamic nature of tourism (McCool & Lime, 2001, p. 385). There is however some critique to these planning frameworks. R. W. Butler (1996) argues that frameworks such as LAC is particularly bad for areas or destinations that depend on natural characteristics for appealing to visitors. This is based on the assumption that a gradual change in the natural quality could lead to a gradual change in the management objectives. This could then lead to a change in the profile of visitors, resulting in an incremental change towards visitors that are more tolerant to the impacts of use.

This section about tourism carrying capacity has introduced different ways of understanding the environmental impacts of tourism. The next section will look further into how individuals' nature views and environmental beliefs potentially could affect this understanding.

3.2 What is nature? Nature views and Environmental beliefs

Because of the encompassing global human impact, Sinclair and Dobson (2015, p. 5) argues that PAs are not, and in a modern context not intend to be, pristine wilderness landscapes.

Historically, this may have been the prevailing thought, but today, this is not the concept. Today, the purpose is more related to the future robustness of human ecosystems.

How one perceives a landscape however, is dependent on a multitude of factors. Because a landscape can be perceived, it means that those who engage in or experience the landscape is part of creating an understanding of the landscape themselves. Because of the subjectivity of this understanding, the values of a landscape can hardly be intrinsic. This is based on the assumption that values tend to be either objective or subjective to a lesser or greater degree. In this way, the values do not exist for themselves, but are expressed through those that are part of a cultural context. This cultural context can include gender, age, social structure, experience, profession, activity etc. This also show why individuals and groups, based on their different cultural context, recognize different values in the landscape. This also means that different ideals and beliefs get projected onto the surroundings, creating landscape trough a cultural context of time and place. This perceived landscape is then interpreted again trough social and cultural filters, looping the process (A. Butler, 2016). Introducing the concept of time has also been important for addressing one of the challenges with landscape perceptions and associated management. Landscape character assessments has had the tendency to define landscapes in the present and ascribed them with "essential" characteristics, making them something to protect. This can lead to restrictions of future change, or wanted "restoration" to a past state. Introducing the concept of time shows the paradoxical nature of these thoughts by highlighting the nature of landscapes as products of long-term, complex patterns of change. Patterns, which are caused by the ever-evolving relationship between nature and society (Olwig, Dalglish, Fairclough, & Herring, 2016).

Castree (2001) show that there are several approaches to seeing the society-nature relations in the field of geography. This field has become more and more specialized and divides into two branches, the social and physical geography. One of the approaches to seeing society-nature relations is arguing for more disciplinary coherence and is called the 'people and environment' approach. This can be seen in relation to a wish for geography to regain its distinctiveness as a bridge between the natural and social sciences. This approach has become increasingly popular in the context of the present global environmental problems. This approach works towards an anatomization (focus on smaller quantifiable parts) of the society-nature challenges and is the most dominant approach.

Castree (2001) also argues however, that not everybody is in favour of this approach. Other approaches are called 'ecocentric' and 'social', and are associated with 'critical geography'. Both approaches find the 'people and environment' too technocratic in the way that it rarely discusses the underlying socioeconomic processes that influence todays nature. They therefore want an approach which are both broader and deeper. The 'ecocentric' approach has a nature-first mentality and argues for a need to "get back to nature". They argue that this could be achieved through a critique and restructuring of today's production and consumption systems. The critical approach sees nature as inescapably social. The arguments behind this approach is that different societies, based on specific and dominant social interests, defines, delimits and physically reconstitutes nature. This is argued to intertwine the social and natural in a way that makes separation impossible, both in thought and practice.

3.2.1 What is nature?

So, what is nature? It is a broad and complex concept that can be more elusive than first believed. Castree (2001) divides the concept into three distinct definitions. The first definition is the 'external nature'. This is based on the familiar assumption that nature is different from society, and therefore external. This separation is often associated with the dualism that guides our thoughts about topics such as the rural-urban and wilderness-civilization. This have also led to the thoughts that societies are "destroying" nature, and that it therefore needs to be protected in various zones, reserves or areas. The second definition is the 'intrinsic nature'. Here nature is seen as having an inherent quality that is fixed and unchanging. It is defined by certain essential qualities or attributes which make it a rigid concept that is hard to influence. This definition is usually seen in context with external nature but have also been used to describe human nature in the past. The third definition is the 'universal nature'. This definition sees nature as something that encompasses everything and therefore act as a contradiction to the idea about an 'external nature'. In this definition, humans are also included in nature under the argument that we are also part of the global ecological system. Even though these definitions are different, they are also overlapping in some cases. In the end, it is important to acknowledge that these definitions exist concurrently in the global context they are part of.

Social nature

It has been argued that the idea of nature as either external, intrinsic or universal could be seen as a social constructions themselves. This even led to the statement that "the one thing

that is not "natural" is nature … [it]self". To understand the social character of nature however, one needs to see how the natural and social intertwine through both thought and practice. To do this, critical geographers divide social nature in three ways (Castree, 2001). Castree (2001) is presenting these as 'knowing nature', 'engaging nature' and 'remaking nature'. 'Knowing nature' claims that knowledge about nature will be biased because it is presented by a knower or knowers. This also mean that there is no objective knowledge of nature, it is rather many socially constructed knowledges. This means that different individuals or groups will create different discourses of the same nature/s to make sense of it. Which discourse that ends up being the "truth" therefore relies more on social struggles trough power in politics. If these discourses end up becoming integrated enough in both public and expert thinking, they may end up appearing natural themselves. 'Engaging nature' is about how knowledge is not alone in being the social dimension of nature. 'Engaging nature' is about the practical side of social nature and highlights the way societies, past and present, have always interacted with nature in a physical manner. This could seem like a disentanglement of society and nature from a viewpoint of critical geography. What it is however, is an argument about how physical constraints and opportunities presented by nature can only be defined relative to societies relations and capacities. This means that a part of nature will have different implications and physical attributes for societies, depending on the specific use by those societies. In this way, physical nature is not fixed, it depends on social practices. 'Remaking nature' is going further than to say that the physical interaction between societies and nature blur their boundaries. 'Remaking nature' is about how societies physically reconstitute nature, whether it is intentionally or unintentionally. Here, nature is seen in a material way, and as becoming internal to social processes. Industrial capitalism is one of these processes and is argued to 'produce nature' through the interests of profitability. Genetically modified organisms manufactured for food production is an example of such production of nature.

One of the critiques to the social-nature perspective is that it presents nature as nothing more than a social construction. If this is the case, it is argued that it cannot be known objectively. This leads to the conclusion that nature is whatever one wants it to be. Also, if nature is no longer seen as something stable and external to humans, how can arguments be made about the "right" social or ecological behaviour. To counter this, actor-network theory is used to show that societies cannot construct nature freely. It is argued that it is multiple actor-networks of social and natural entities that is joined at multiple geographical scales. This

leads to an understanding where societies are part of nature and nature are part of societies. This blurs the process of construction to the point where it becomes unclear who or what is performing the constructing. In the end, it becomes a question of what kind of nature, or natures, one wants for what kind of future (Castree, 2001)?

3.2.2 Environmental beliefs

The concept of environmental attitudes comes from the field of environmental psychology and is described by the degree to whether people tend to evaluate the natural environment with favour or disfavour (Hawcroft & Milfont, 2010, p. 143)

Tourists environmental beliefs is influencing their general view on nature, a view that influences their perception of what an ideal environment should be in a specific place. This relationship between landscape preferences and environmental value orientations is affected by the individuals´ lean towards anthropocentric (human-centered) or ecocentric (nature-centered) values (Kaltenborn & Bjerke, 2002). In this way, tourists' environmental beliefs act as a measure of landscape preferences, not only to environmental aspects, but social and cultural aspects too. In the end, this could also influence their attitudes towards conservation (Kaltenborn et al., 2011, p. 135). However, a desire to see wildlife and a concern for the environment is not necessarily related. Based on the assumption that there are diverse views and attitudes in a tourist population, it is interesting to look at potential factors influencing these underlying beliefs (Kaltenborn et al., 2011, p. 134). The New Environmental Paradigm (NEP) scale is widely used as a measure in this regard (Dunlap, 2008).

The NEP-scale was made to be a way of measuring environmental concern, values and attitudes. In later years, it is increasingly understood as a measure of environmental beliefs and has become the most widely used measure, used in hundreds of studies, all over the world (Dunlap, 2008, p. 10). The NEP-scale was first published in 1978 . Since then, it has gone through some revisions. From the original 12 items in 1978, to a shortened often called the 6-item NEP-scale in 1989, to the complete and final 15 item version published in 2000 (Dunlap, 2008, p. 8). This newest version of 15 items consists of positive and negative statements about the relationship between human beings and the environment. Using a scale based measuring system, this is supposed to measure an individual's ecological worldview (from low to high) (Dunlap, 2008, p. 9). A critique to the NEP-scale approach however, is a lack of consistency when applied to research. The two most common inconsistencies are the number

of questions used and the number of points chosen on the Likert scale. Through weighted regression analysis, these differences in number of questions and scale length have also been proven to have a significant effect on the overall NEP-scale scores (Hawcroft & Milfont, 2010, p. 143).

Dunlap, Van Liere, Mertig, and Jones (2000) show how there has been found relationships between the support for the NEP-scale approach and individuals age and level of education in most studies. The relationship with age has usually been negatively correlated. This means that younger people in general are more positive towards the NEP-scale than older people. The relationship with people's level of education has usually been positive. This means that individuals with a higher level of education, generally have been more positive towards the NEP-scale than lower educated individuals. A study by Kaltenborn et al. (2011), found that an individual's level of ecocentrism had an effect on individuals attitudes concerning management of national parks. Higher levels of ecocentrism led to a stronger interest in experiencing local culture, nature and wilderness. Individuals expressing higher levels of ecocentrism were also more likely to support management strategies with a focus on controlling tourism activities, access and impacts. Results from a study by Xu and Fox (2014) strengthens these findings. They found that individuals with an anthropocentric nature view prioritise tourism development and use of natural resources in favour of the environment. Individuals with an ecocentric nature view however, will prioritise the environment in favour of tourism development. This was based on their support for conservation measures and sustainable tourism in a national park. In this way, the study also concludes that individual's attitudes towards sustainable tourism are influenced by their nature views. They also address however, that individuals that choose to visit a national park in the first place, might hold a certain nature view that might not be present in the rest of the population.

3.3 Destination image

The growth in global tourism over the last decades has caused more and more areas to be developed for tourism. A general increase in leisure time, higher levels of disposable income, and larger and more efficient transportation networks have made multiple new destinations more available. This expansion of tourism destination choices is making marketing more complex and increasingly important. One of the most significant of these challenges are the need for an effective destination positioning strategy. The general strategy to achieve this is to

differentiate favourably from competition, or to position the destination positively in the mind of the consumer. This is often done by creating a distinctive and appealing perception, or what is often called 'image' in marketing, of the destination (Echtner & Ritchie, 1991). Destination image is also proven to have an impact on tourist behaviour, especially regarding the travel decision process. This is seen when destinations with a strong positive destination image has been more likely to be chosen in favour of destinations with a less favourable image. This has caused destination image to play an important role in different models that are used for travel decision making today (Echtner & Ritchie, 1991). As presented above, the destination image is important for the understanding of both travel behaviour and for the design of effective tourism marketing strategies. Another important concept however, is the satisfaction with the experience at the destination. There are many definitions of this concept in existing research however. Chon (1990, p. 4) argues that the most common definition amongst researchers is a view where satisfaction with the experience at the destination is understood as:

"An individual traveller's satisfaction and dissatisfaction with the travel experience is a function of a comparison between his accumulated image of and his actual experience at the destination".

In the case of image formation and measurement, it tends to vary between different fields of research. In the field of phycology, imagery has been defined as a way individuals process and store multisensory information to their memory. This depends on a holistic way of representing information and is often described as mental picturing. The holistic approach however, addresses the fact that there are more aspects to mental picturing than just sight. Examples of these other aspects are senses such as smell, sound, taste and touch (Echtner & Ritchie, 1991). The psychological aspects that influence the destination image will be presented later in this section. Another approach to the concept is that of behavioural geography. In this field of research, it is related to associated impressions such as knowledge, values, emotions and beliefs (Jenkins, 1999). Both of these definitions have a focus on the individual. From a marketing perspective however, there is an acknowledgement of images held by members of particular groups. The image is therefore not something that can only be held by one individual, but shared between individuals. This is especially important in the marketing context because it allows segmentation of markets and associated marketing strategies. This also means that the image concept for marketing purposes includes all

objective knowledge, prejudice, impressions, imaginations, and emotional thoughts individuals or groups could have of a destination (Jenkins, 1999).

3.3.1 The formation of a destination image

The formation of a destination image is believed to be influenced by the distance to from the individual travellers' origin to the destination. It is also believed to be more realistic, the closer the destination is to the individuals home (Gill, 2015; Hunt, 1975). The formation of image can also be seen as a mental construct that develops based on some of the impressions from the whole amount of information. For the case of destination image, this information has many sources. There is promotional literature such as travel brochures, travel books or posters, the opinions and recommendations from family or friends, and more general media streams such as news, magazines, TV, books and movies. In addition, an image will also be affected by visiting the destination first hand (Echtner & Ritchie, 1991). There has been developed various ways of trying to put information and mental construct into systems.

One theory was to order them into consumer factors and supply factors (Stabler, 1988, p. 142). Figure 2 show these consumer factors and supply factors suggested by Stabler.

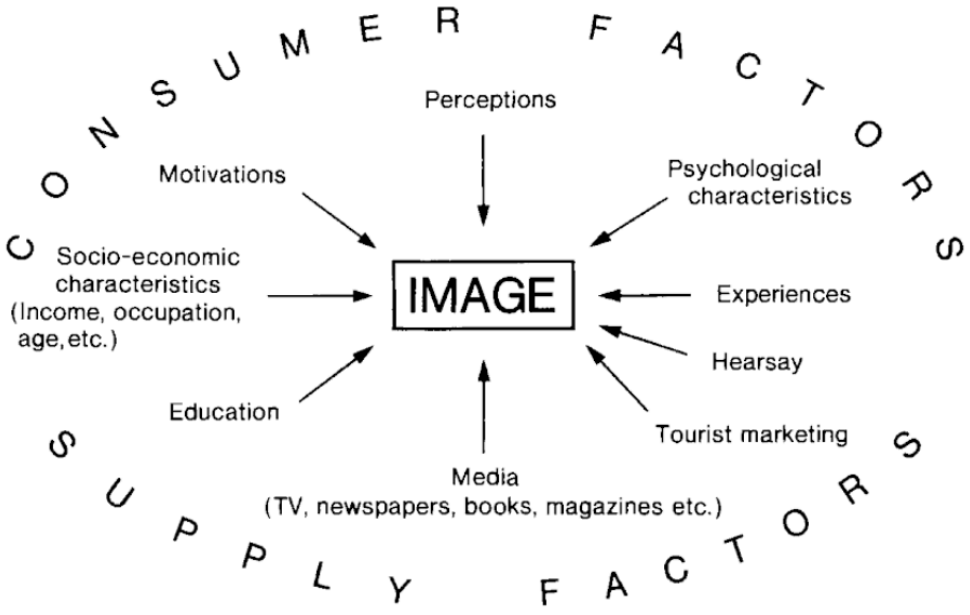

Figure 2. Factors influencing the formation of consumers' tourist image (Stabler, 1988).

Another theory was the seven-stage theory. It was presented by (Gunn, 1988), and involved the idea of a constant development and modification of images. These seven stages could again be simplified into three main blocks. The first block was made up of what was called organic non-tourist information. This included documentaries, books, the word of friends and other non-directed information assimilated over time. This organic formation also correspond roughly to the consumer factors presented by Stabler (Jenkins, 1999). The next block was called induced information and included travel brochures, travel agents, commercials and other direct advertisement information derived from conscious efforts to promote, advertise and develop an image. This induced information also correspond roughly to the supply factors presented by Stabler (Jenkins, 1999). The third block was called modified induced images and was a result of the experiences at the destination. The seventh stage located in block three addressed how experiences at the destination was going to influence an individual's destination image. Because this also becomes part of an individual's organic information, it starts the process over again and shows the circular nature of the constant development and modification of images. The conclusion of this theory was that individuals, whether one decided to be non-visitor, visitor or post visitor, would be at different stages in the model and therefore hold different images of the destination (Gunn, 1988). Research has also confirmed this theory by seeing that images held by post visitors has a tendency to be more differentiated, complex and realistic (Echtner & Ritchie, 1991; Jenkins, 1999).

There are however some contrary findings to the research mentioned above. In one study, first time visitors and repeat visitors where asked if they expected traditional resorts at their destination. The two resorts were both advertised as traditional but were constructed recently. Both type of visitors were expecting a traditional resort, which indicate that marketing and the public image of a destination could be more persuasive than personal experience. It was also found that destination images can fade or revert over time, especially if the individual has been visiting similar destinations (Phelps, 1986). Another study looked at tourist's perceptions of the Great Barrier Reef after their visit. They were asked to choose one picture out of seven that best matched their personal image of the destination. Interestingly, the majority of people choice an aerial photo of the reef instead of a close-up picture of activities such as snorkelling or diving. This also indicates that advertisement and the common public image can be more important than the experience had by the tourists themselves (Jenkins, 1999). When actually measuring the attributes that make up the image held by the tourists, Jenkins (1999) divides the rating process into two parts. The first part is the rating of an

attribute at a destination for a specific construct. An example of such a construct could be to rate the scenic beauty and is called ‘evaluative perception’. The second part is the rating of how important this construct is for the individual and is called the ‘construct preference’. When combining the two, the researcher can better understand the image held by the individual tourist. It also allows the researcher to understand the importance of certain aspects that are especially important to an individual or group of tourists. When obtaining this knowledge, the researcher also has a better foundation to see changes in destination image over time.

One of the biggest challenges with research on destination image however, is the holistic nature of the subject. As presented above, researchers are often compelled to study some attributes or particular aspects singularly. (Echtner & Ritchie, 1991) argue that this is caused by researcher’s strong preference for structured methods. They argue that destination image should be understood as a combination of both attribute-based components and holistic components. They also argue that most of the attribute components can be directly observed or measured. Such attributes could be scenery, attractions, etc. and they call these functional characteristics. The more intangible attributes are called psychological characteristics and consist of attributes such as atmosphere, friendliness, safety, etc. This leads to their conceptual framework where destination image consists of both the tangible aspects seen as functional characteristics, and the more intangible aspects seen as psychological characteristics. They also present one final argument which is presented in figure 3.

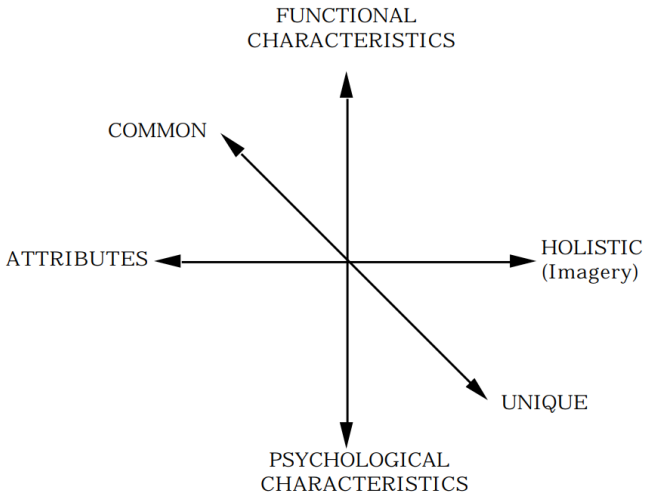

*Figure 3. The components of destination image (Echtner & Ritchie, 1991). *This figure should be envisaged in three dimensions.*

Their final argument is that one should look past the information from the attributes that are common to most destinations. This allow a focus on the third dimension to their framework, a focus on the features that make a particular destination unique.

3.3.2 Perception

Regardless of the measurement level of the destination image, it involves the perception of individuals or groups. Understanding the concept of perception in relation to tourist experiences therefore becomes important. Larsen (2007) explain how this concept cold be understood based on thoughts from the discipline of psychology. In psychology, perception is usually understood as a mental process where organization and interpretation of sensory input is selectively attended to. Simply told, it is about understanding what our senses tell us. The meaning is then created from a combination of external stimulus from the environment and the internal psychological processes. The interpretation of the stimuli registered by the senses is influenced by a combination of previously gathered knowledge. The perception is then constructed based on earlier experiences, competence and expectations. Perception then becomes a combination of information gathered in a stimulus situation, and the processes and mental structures an individual creates to make processing of the information possible. This process will also be influenced by emotions and motivations held by the individual. Personal values, opinions, worldviews and attitudes will also differ between the individuals. Together, these differences create a multitude of potential perceptions. This also show that tourist experiences are conceptualized through memory and cognitive processes.

Fredrickson (2000) have investigated the 'peak-and-end' effect of affective experiences. What he found was that the evaluation of past experiences is evaluated only from a few selected moments. These moments are the peak and end moments of the experience. The peak experience is understood as the most affective moment of the experience. The end experience is understood as the affect experienced last in the experience. It was also indicated that the evaluation of an experience and decisions about the future could be predicted by the average of these two moments. An interesting consequence of this is that the duration of the experiences becomes of little importance. (Fredrickson, 2000) suggests that the peak and end experiences are most important because they add subjective meaning that contributes to individuals understanding of her/him self in relation to the surroundings. This also contributes to an understanding were the positioning effect of recency does not explain the entire end-effect. This subjective meaning may also explain why tourists, when having peak experiences,

tend to label and recall these as just that. The remembered experience has also been proven to be the best predictor for whether an individual wish to repeat a trip or not (Larsen, 2007).

For the case of tourist memories, they are often a recall of experiences that has been created through constructive or reconstructive processes within individuals (Larsen, 2007).
Based on the way tourists understand themselves in relation to a destination, it introduces other aspects of the psychology of tourism experiences too. Jackson, White, and Schmierer (1996) found that there is a difference between how tourists see positive and negative outcomes of tourist experiences. They discovered a tendency were tourists tended to ascribe positive outcomes of an experience to inner dispositions in themselves. Negative outcomes on the other hand, were seen as caused by the situation itself. They argue that this show the importance of the tourist itself, both for the understanding of the tourism setting and for the factors influencing tourist perceptions.

3.4 Authenticity

According to the Cambridge Dictionary, authenticity is "the quality of being real or true" (Cambridge University Press, 2019). This definition, and perhaps the original understanding of the concept of 'authenticity' originate from museums. In this context, the focus is on whether materials are what they appear, or are claimed to be. In the case of art, this could be whether a painting originates from a certain artist (Cohen, 1988; Hede, Garma, Josiassen, & Thyne, 2014; Wang, 1999). (Hede et al., 2014) continues to use the museum setting to explain authenticity further. In this museum experience they divide the different aspects of authenticity into what they call first, second and, third person. The first person is the museum and is seen as an expository agent which creates discourses. In this context, the authenticity is understood as the extent to which the museum manages to develop and share its presented knowledge in a way that seems truthful and open to the visitors. The second person is the museum visitor. This introduces the notion of the self and is related to consumer behaviour as seen in marketing. This refers to a self-authentication process where the level of involvement with a product affects the consumers standard and expectations for authenticity. The third person is the museum materials. They are believed to assist the first person (museum) in narrating the story that is interpreted by the second person (visitor). This interpretation of an objects authenticity is believed to have a connection with facts and knowledge, which is based on the definition of authenticity presented above.

Jones (2010) however, argue that this is a too materialistic perspective. Authenticity is not inherent in the object but should rather be seen as a quality that is socially constructed. It therefore varies according to who the observer is, and in what context it is observed. In the field of sociology, tourism research has involved the concept of authenticity in relation to experience. MacCannell (1973) was one of the first to address this topic and had a focus on the perceived authenticity of social and cultural interactions at a tourist destination. The question he asked is whether visitors was seeing the local's real life or not. In his study, he used the terms front and back regions to describe different levels of authenticity in the interactions with the locals. The front region was seen as something false and constructed for the visitors. The back region on the other hand, was seen as real and the truth. This differentiation was based on his assumption that tourist settings can be staged to simulate authentic local life for visitors. Because it can be hard to tell if this is the case or not, knowledge was believed to be important for assisting visitors in assessing the authenticity of their experience. This is also the reason why there are not only a front and a back region in his theory, but a continuum of stages from front to back. Cohen (1979) further develops the ideas presented by MacCannel, and introduces four types of tourism situations in relation to authenticity. These can be seen in figure 4 below.

		Tourist's Impression of Scene	
		Real	**Staged**
Nature of Scene	**Real**	(1) Authentic	(3) Denial of Authenticity (Staging Suspicion)
	Staged	(2) Staged Authenticity (Covert Tourist Space)	(4) Contrived (Overt Tourist Space)

Figure 4. Types of touristic situations (Cohen, 1979).

The authentic tourist situation occurs when the situation is "objectively real", and perceived to be so by the tourist. The staged authenticity occurs in the tourist situation when the scene is staged by managers, and tourists are not aware of this. The denial of authenticity in the tourist

situation occurs when the scene is "objectively real" but the tourist doubts its authenticity regardless. The contrived tourist situation occurs when managers admittedly stages a scene and tourists are aware of the staging. Because of the complexity of understanding the authenticity in a tourist situation, the correct perception cannot be guaranteed. At the same time, Pearce and Moscardo (1986) argue that both the perception of, and preference for authenticity is important for the tourists' satisfaction with the experience. In this way, an experience known to be staged can be fully satisfactory if the preference for authenticity is low. Cohen (1988) exemplifies this by pointing out how mass tourism succeeds, not by being a big deception, but because tourists often hold a different view of authenticity than intellectuals and experts. In literature about authenticity of experience, the focus is largely, almost only, on cultural, social and historical tourist experiences. Lau (2010) however, introduces the concept of authenticity of experience to the nature-tourism context. He argues that natural scenery ("wild nature") constitutes objective authenticity even when it cannot be contrasted by simulated counterparts, such as zoos etc. This is argued to be because most tourists see natural scenery, not as contrasted by simulations, but contrasted with man-made urban environments. He also argues that this understanding can only be used in the context of members of the modern society. A tribe member from an isolated tribe would most certainly perceive it differently based on different preconditions.

Later research has classified these definitions of authenticity and further developed a new perspective on experience authenticity. Wang (1999) classifies MacCannel's presented understanding of authenticity as 'objective authenticity'. As presented, this definition sees an experience as authentic if it is perceived that way by the tourist. As with the museum definition mentioned above, there is absolute and objective criteria used for the measurement. Cohen's definition of authenticity is classified as 'constructive authenticity'. This is based on the way an authentic experience is believed to be a result of social construction. This definition could therefore be argued to be relative, contextually determined and potentially constructed. Authenticity then depends on beliefs, point of view, stereotypical images and expectations, rather than objective measurable criteria. The third classification is defined by Wang and is called existential authenticity. Here, authenticity is believed to be part of the intersubjective (personal) feelings that are activated through the process of tourist activities. The argument is that tourists can feel a more self-expressed and authentic self during tourist activities, than in their daily life. In this way, the existential authenticity can be a source of authenticity in tourist experiences in a different way than the two other definitions.

Cohen and Cohen (2012) addresses the tendency of contemporary sociology and philosophy to adapt a broader multidisciplinary theoretical re-orientation towards the current discourses of authenticity of experiences. One of the reasons for this redirection is argued to be the missing 'originality' in an increasingly globalized world. Another reason is the replacement of authenticity with a wish for fun and enjoyment by tourists. As a reaction, radical performativity is one of the broader theories that has been developed. In radical performativity, the performative actions of tourists, not the social constructions, are believed to create the reality of the destination. In this way, the approach denies an independent social construct to tourist settings. It is argued that these destinations should rather be seen as dynamic products of the tourists' performative acts. This concept also denies an individual's personal identity to be something stable. Individuals are rather believed to be able to hold multiple shifting selves. Anderson (2012) reinforces these thoughts in relation to 'place' in the field of geography, where 'place' is proposed to be more than a connection of parts. It is proposed to be a process of converging parts, blurring together at a specific moment in time.

As can be seen in this section about authenticity, the concept keeps being developed, and even turns into new understandings. Advertisement for tourism destinations however, keep using language such as 'pristine' and 'untouched' when describing destinations. The word authenticity itself is also used to promote the tourist experience that could be had. This shows the potential still existing importance of many types of authenticity in contemporary tourist experiences (Lau, 2010).

Above, the theoretical framework of the study has been presented. First, the environmental impact of tourism and the related concept of carrying capacity was presented. This was done in an attempt to investigate potential limits to tourism and how they relate to the tourist's own perception of such limits. This section argued how the concept of carrying capacity could be understood in different ways, mainly from a numerical and objective point of view, or from a social and subjective point of view. To get a deeper understanding of the perceptions of the individual tourist, the social and subjective point of view were pursued further. In this way, the chapter continued with a presentation of different nature views, and later, its relationship with the tourists' environmental beliefs. The New Environmental Paradigm was presented as a strategy to explain the differences between tourists' environmental beliefs. It acts as a measure of their level of ecocentrism (nature centered view), and can be used to divide

individuals into groups showing different levels of ecocentrism. To get a better understanding of the multitude of other influencing aspects that affect how tourists perceive the experience at the destination, and perhaps their understanding of their impact on it, the concept of destination image was introduced. This perception of the destination image further led to the presentation of the concept of authenticity. As for the concepts of carrying capacity and nature views, authenticity also showed a divide between an objective and subjective side. This chapter has shown that a tourist's perception of their experience related to nature-based tourism is a complex topic. The different sections however have attempted to investigate potential aspects of it that could increase the understanding of its connection to the tourists' understanding of their own environmental impact. The next chapter will focus on the method that has been used to investigate that topic further.

4 Method

This chapter will present the methodological approach chosen in this study. This includes a thorough review of the different strategies that has been pursued, and rationalities for the choices that has been made. First, the choice of method, sampling strategy, questionnaire design and the practical considerations will be presented. Then, the different parts of the data analyses will be presented, in addition to the validity and reliability of the data. In the end, ethical considerations and limitations will be presented.

4.1 Method justification and sampling

The choice of using a quantitative approach was based on a wish to achieve a study design that could be built upon by future research. The use of a questionnaire to collect the data was believed to contribute to this objective by adding a repeatable structure to the study. In addition, it allowed aspects of previous studies done in the same area to be included. The purpose behind this was to create a continuation of results that could be used to look for changes from past to present, but also to set the stage for a future continuation of similar research. Potentially, this could lead to an increase in knowledge about the relationship between management and long-term changes that could be beneficial for future management.

4.1.1 Sampling area

This study was conducted around mid-September to mid-October in both SNP and NCA. The original idea was to fill in the questionnaires with tourists while the drivers were checking them out of the PAs. This however turned out to be impossible because they spent too little time at the gates to be able to finish the questionnaire. The tourists were therefore accessed at three lodges (Ngorongoro Serena Safari Lodge, Ngorongoro Wildlife Lodge and Ngorongoro Rhino Lodge) located on the crater rim in NCA, and at the Seronera Visitor Center in SNP. At the three lodges in NCA, the tourists were available in the common areas before dinner. Because they often stayed out late for their safari, this resulted in a small window of opportunity in the afternoon. The amount of time with access to the tourists were about the same at Seronera visitor centre in SNP. This was during lunch ours when the different safari companies brought their tourists there to eat lunch.

4.1.2 Sample strategy and characteristics

Probabilistic samples are often preferred because they are the best way of getting samples that give accurate results which can be generalized to a population (Antonius, 2012, p. 157). Some-times, getting a probabilistic sample is not possible because it would be too costly in terms of time or money. In such cases, a non-probabilistic sample strategy can be used, even though the results will not be as reliable (Antonius, 2012, p. 161). Because of the changes that had to be made to the sampling strategy based on the issues mentioned above, a non-probabilistic convenience sample was used in this study. This means that the sample was not chosen by random using certain criteria, but rather out of convenience at a place in time. This can cause the results to be more biased in the way that they are less representative of the population. This is based on the fact that the individuals that chose to use the lounge at the lodges, or had safari companies that used the visitor centre as a lunch spot, were the only available tourists. The results however, can be very informative regarding the range of opinions in the population (Antonius, 2012, p. 164). Because the lodges and visitor centre were relatively small, it was possible to ask approximately all the tourists that were available. The only limitation to this was that the minimum age that was chosen to be 18 years old. This was based on the assumption that some of the questions were fairly difficult. Based on the fact that other studies in the PAs has found the mean age of visitors to be quite high, it should not create to large of a bias (Kaltenborn et al., 2011; Okello & Yerian, 2009). Because the purpose was to get the broadest possible spectre of opinions, no upper age limit was set for participants.

4.2 The questionnaire

Below, reasons for the choice of questions will be presented. Practical considerations to the conducting of the questionnaire will also be presented.

4.2.1 Questions

In the survey, the questions addressing descriptive characteristics, such as socio-demographic data and the familiarity with the place, are retrieved and modified from two previous studies in the area. These studies are done by Kaltenborn et al. (2011) and Okello and Yerian (2009). This is also the case for the two categories ‘reasons for visiting the protected area’, and ‘your experience in the protected area’. The question-category that is measuring tourists ‘environmental views’ are retrieved from the study done by Kaltenborn et al. (2011). The

question-category of ‘conservation questions’, that also include aspects of authenticity, is constructed by the author and is inspired by existing literature that arguably show signs of being relevant. This construction is based on a lack of questions that suited the purpose of this study, which could be linked to the study’s exploratory nature. The questions were grouped together in an effort to make it easier for the tourists to relate to the specific questions. Questions, which purpose were related for later analysis, were however split to some extent, both within the section and between sections. This was done in an attempt to obscure the purpose of later interpretation from the tourists, which were believed to potentially lead to led answers.

4.2.2 Practical considerations

The plan was to use electronic tablets instead of paper-based questionnaires. This was argued to be a more efficient and a less costly alternative (Leisher, 2014, p. 269). The free and open-source software Open Data Kit was used to create the electronic questionnaire and could be used for collecting and managing the data. It was also chosen because it had the opportunity to collect data offline, for it later to be uploaded to the database when reconnected with an internet connection. This was especially important because the areas where the questionnaires would be filled out would be without an internet connection. A small pilot study was done and resulted in some minor changes to the formulation and words to increase clarification. The decision to use tablets however, had to be discarded because of practical reasons. Because the available time with the tourists turned out to be so limited, and because they all were available at the same time, paper-based questionnaires had to be implemented. The limited number of tablets (3) was simply not efficient enough to reach all the tourists that were available. The paper-based questionnaires however turned out to be very efficient because they could be dealt out to every potential and accepting tourist at the same time. This also let people answer at their own pace because the paper did not have to be turned in immediately. In a lodge or lunch setting, this seemed to be desirable, especially by the older segment of the sample. The tablets were therefore used by the researcher to store a backup of the data in a safe way by entering it manually throughout the field study instead. To have the data electronically was also beneficial when the data had to be transferred for the analyses. The analyses was done using the software IBM SPSS (version 25.

4.3 Data analysis

In this study, both descriptive and inferential statistics was used in an attempt to answer the research questions, and in that way, get a better understanding of the main objective.

4.3.1 Descriptive statistics

Descriptive statistics is used to summarize the data in a way that highlights the most important features (Antonius, 2012, p. 11). The data material was first transferred from the Open Data Kit software to the analytical software IBM SPPS. It was then organized and cleaned by checking the system missing values and establishing user missing values. Then, frequency and distribution analyses were done to get an overview of the data.

4.3.2 Inferential statistics

The aim of Inferential statistics is to generalize a sample to a population and to investigate how precise this generalization is (Antonius, 2012, p. 12). Statistical tests should also rely upon certain assumptions for the variables used. If these assumptions are not met, it may lead to serious biases and the results may be less trustworthy. Therefore, it is essential to have knowledge and an understanding of how and when assumptions could be violated when doing data analysis (Osborne & Waters, 2002).

Compare means

In relation to research question 3, compare means were used to look at differences within groups of gender, age and education for the tourist's environmental views (level of ecocentrism). In relation to research question 2, it was later used to look at differences within groups of genders, age, education, environmental beliefs (level of ecocentrism), times visited the PAs and days spent in the PAs, for the different factors. To do this, Independent Samples t-Tests and One-Way ANOVA tests were done. Independent Samples t-Tests is used to see whether there exist significant differences between an independent variable with two subgroups and a dependent variable (Antonius, 2012, p. 323). For independent variables categorized into three subgroups, One-Way ANOVA tests are used to determine whether there are statistically significant differences between them (Antonius, 2012, p. 317).

factor analysis

In relation to research question 1, a factor analysis was done with certain settings in SPSS, and certain assumptions. Both the settings and assumption are important for the validity of the results and will be presented in this section.

First, the determinant was checked to see whether the collinearity was too high. The criteria is that it should be more than 0.0001 to avoid computational difficulties (Morgan, Leech, Gloeckner, & Barrett, 2012, p. 124). Then, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy value was checked. The KMO test is a measure of whether or not there are enough items that are predicted by each factor. It should be greater than .7 and is considered inadequate if it is smaller than .5 (Morgan et al., 2012, p. 124). Then, the Bartlett's Test of Sphericity was checked. If it is significant, it shows that the variables correlate highly enough to prove a reasonable basis for a factor analysis. The criteria is that it should be lower than the maximum wanted value of 0.05 (Morgan et al., 2012, p. 124). Then an online parallel analysis was done to see which of the components with an Initial Eigenvalue greater than 1 that should be kept (The Chinese University of Hong Kong, 2017). The factor analysis then continued with a fixed number of factors, rotation set to varimax, excluded cases pairwise and with supressed small coefficients with absolute values below .4. The varimax rotation makes the factors easier to interpret and as much as possible, make sure that different items are explained by different underlying factors (Morgan et al., 2012, p. 124). In reality, each item has some loading from every factor. To make the analysis "cleaner" however, a criterion is set to exclude factor loadings lower than a certain number. There is no standard for this number but it is usually set between .3 and .5, where .4 and above is considered high (Morgan et al., 2012, p. 125). 0.4 is used in this study to achieve what is considered to be high loading. Finally, the reliability of the factors was tested using Cronbach's alpha. This measure ranges from 0 to 1, where 1 is showing the highest internal consistency. This measure tell how related certain questions are as a group (Tavakol & Dennick, 2011). A Cronbach's alpha of .7 is usually set as an acceptable reliability coefficient (Gliem & Gliem, 2003; Santos, 1999; Tavakol & Dennick, 2011). A Cronbach's alpha greater than .6 can be seen as questionable (Gliem & Gliem, 2003) but such values are nevertheless used in some literature (Santos, 1999).

Regression

For the regression analysis, there are many assumptions that needs to be checked. This study has checked the normal distribution, outliers, linearity, independence of observations, collinearity, reliability of measurement, homoscedasticity and interrelation effects.

A normal distribution is important in regression because violations to this assumption can affect relationships and significance tests (Osborne & Waters, 2002). Osborne and Waters (2002) present visual inspection of the histograms as a possible method for checking the normal distribution. This method was also chosen in this study. The outliers can also be identified by a visual inspection. Removing these outliers can then reduce the chance of both type I and type II error, which could improve accuracy of the estimates. It is nevertheless not always desirable to remove the outliers. This is because it can make the interpretation of the results more complicated (Osborne & Waters, 2002). Another assumption is about the linear relationship between the independent and dependent variable. The regression can only estimate the relationship between the independent and dependent variables accurately if their relationship is linear. If not, the regression analysis will under-estimate their relationship (Osborne & Waters, 2002). The best way of checking this is to look at the residual plots that can be made in SPSS. In these same residual plots, it is possible to check the assumption about homoscedasticity. Homoscedasticity is a means of whether the variance of errors is the same throughout all the levels of the independent variable. This means that the variance of the residuals could be observed in the same residual plot and should be relatively evenly distributed around 0 (Osborne & Waters, 2002). The assumption about independence of observation should be fulfilled by a good design of the study (Osborne & Waters, 2002). It could however be tested by checking the Durban-Watson test for autocorrelation. It will always have a value somewhere between 0 and 4, were values closer to zero indicates positive autocorrelation, and values closer to 4 indicates negative autocorrelation. A value close to 2 is desirable, and indicates little autocorrelation (Chatterjee & Simonoff, 2013, p. 86). Another assumption is about the collinearity. In a multiple regression, there will be multiple predictors. This introduces the importance of checking that these predictors are correlated. This could be checked by looking at tolerance and variance inflation factors (VIFs) in the analysis. The tolerance should be greater than .1 and the VIF should be lower than 10 (Yakubu, 2009, p. 61). Another assumption is about the reliability of the measurement. It addresses the importance of having reliable variables to the extent that the measurements of relationships cause an accurate model of the relationships at the population level. Reliability

estimates in this regard is based on the same criteria of Cronabach's alpha as with the factor analysis mentioned above (Osborne & Waters, 2002). Interrelation effects were also investigated but was not pursued further because of unclear and confusing results.

4.4 Validity and reliability

In order to measure a concept in a scientific way, both validity and reliability is important. Validity is about whether the variable measures what it is supposed to measure, while reliability is about the consistency and replicability of a measure. Consistency means that one should get similar results if the same method is applied to similar circumstances. Replicability means that other researchers should get roughly the same results if they repeat the measure on similar but different circumstances (Antonius, 2012, p. 22).

A sample size above 200 is recommended to increase the reliability (Streiner & Kottner, 2014, p. 1973). This study therefore had a goal of getting a sample size over 200. Because of limitations related to time and practical feasibility however, this ended up not being achieved. The sample size for this study ended up falling just short of this recommendations by having 187 participants. Because of the convenience sampling technique, there could also be a limitation linked to the fact that responses could come from people in the same safari vehicle. Potential similarities in experiences could therefore lead to more biased results. It is however possible to argue that these people, sharing the "same" experience, could experience it differently due to individual differences. It is also important to consider whether set answer categories could impact the answers received in a questionnaire and whether it could lead to some degree of random answers. Different levels of exposure to PAs could also affect the answers because it gives the participants different reference frames. It is also possible that the distance the tourists have travelled, and the fact that they have chosen to spend their holiday and a considerable amount of money to be here, could have an effect on their answers as well.

As mentioned above, known or previously tested questions was used in some sections of the questionnaire to increase the validity of the study. The same is true for the NEP-scale questions, which were used to measure environmental beliefs (level of ecocentrism). They were also chosen because they have been a long-time standard in this regard (Dunlap, 2008). They were also chosen however, for their proven applicability in similar research (Kaltenborn & Bjerke, 2002; Kaltenborn et al., 2011). To use validated questions to a large degree was

also done because it could be beneficial for the potential comparability between past and future studies of similar topics in the area. That could also be beneficial for the validity of the findings in this study. What it is that affects tourist's perception of their own impact is however a little studied field in tourism research. Questions in the conservation questions' section is therefore inspired from studies that show similarities to this study, but which did not study the exact same thing. The degree of validity for the operationalization of questions is therefore a limitation because there could be, and most likely are aspects of the concept that is not investigated, or could be investigated in another way, in this study. This is however an exploratory study that could contribute to future studies by investigating some of the potential aspects that influence the concept.

4.4.1 Negated questions

There were two questions of negation in the questionnaire to examine the validity of the answers. It is reasonable to argue that question 24 and 30 show a satisfactory consistency in the inverted pattern even though they show small differences. Question 20 and 27 however, show consistency to a certain extent, but not to the same degree as question 24 and 30. A possible reason for this could be the lack of clarity in the formulation of question 20 and 27. Retrospectively, it is possible to argue that question 27 (There are not too many tourists in the PAs) is difficult to answer because answering "Strongly disagree" or "Disagree" to this question will lead to a double negative connotation. It is also possible to argue that it is a challenging question because it indirectly says something about themselves. That could make it harder to either strongly disagree, or strongly agree to the question.

4.4.2 Missing values

If one wants to make inferences from a sample to the population, and the margins of error to be reasonable, the sample size must be large enough (Antonius, 2012, p. 183). In this study, 187 questionnaires were collected and is the total sample size. During the process of cleaning the data for analysis, both system missing values and user missing values were determined. The number of system missing values was quite stable for the questionnaire in general. Some questions however showed signs of having fewer respondents and can be seen in figure 11 in Appendix B. These system missing values can be caused by a multitude of different reasons. Some of the most common reasons are that the respondent found a question sensitive, provocative, confusing or challenging, together with simply overlooking one, or forgetting to

turn a page (Finch, 2010). In this study, the lower responses to question 55, 56 and 57 could be caused by a combination of confusion and the fact that you were not to answer question 55 and 57 if they did not apply to you. Because question 58 had such a high response rate, forgetting to turn the page is not very likely. Question 19 and 29 also showed signs of having fewer responses. It is difficult to find a specific reason for this and a combination of the reasons presented above could be causing it.

4.5 Ethical considerations

Ethical considerations are important in all research to protect participants. Four important principles in this regard are informed consent, confidentiality, absence of relationship of authority and freedom to withdraw at any time (Antonius, 2012, p. 43). In this study, the participants were presented information about the purpose of the research and what their role as participants would be. Their confidentiality was protected by the lack of questions asking about sensitive topics or personal information. All participants were also informed about how participating were completely voluntary, and that they had the freedom to withdraw at any time.

4.6 Limitations

In relation to the sampling strategy, some limitations have already been presented earlier in this chapter. Another limitation however, is the proportionally underrepresented segment of both Asian tourists and older German tourists. This is based on observations from the field and the fact that they chose not to participate in the survey. The most important reason for this is expected to be the language barrier between the researcher and the Asian and older German tourists. This lack of ability to communicate, and the fact that the questionnaire was only in English excluded these tourists from participating. If the tourists had participated based on the percentage of nationalities visiting the PAs, the Asian segment would be expected to be the second, or third highest after American tourists. It would also have boosted the percentage of German visitors to be even higher.

As explained by Larsen (2007), the tourist perception is a product of a psychological process that combines outside stimulus from a situation, with individual mental processes. This outside stimulus can be the natural environment observed through a tourism experience. The individual mental processes are among other things, influenced by the tourists existing

knowledge and their appurtenant expectations. This makes it possible to argue that both time and place could have a large impact on tourist's perceptions. This highlight the potential effect that seasonal changes and specific events in the PAs can have on the outside stimulus observed through the tourism experience. Because of the importance of time and place for the results, it shows how the degree of transferability of the results could differ in the same PAs during the year. It also shows that the findings not necessarily are transferable to other destinations.

This chapter has presented the different methodological strategies and their accompanying rationalities that is used in the study. A quantitative approach was chosen and carried out through the use of a questionnaire to gather data. The survey was conducted in SNP and NCA, at the visitor-center and lodges respectively. A change in sampling strategy, due to the practical feasibility of the study, lead to convenience sampling. Also, due to the practical feasibility, paper-based questionnaires were used instead of the intended tablets. The data was then entered into the Open Data Kit software on the tablets and transferred to the statistical software program IBM SPSS for analysis. The validity and reliability was tested by looking at missing values, negated questions, and descriptive criteria. After cleaning the data, descriptive and inferential analyses were done. The descriptive analysis was done to create an overview of the tourist's characteristics and to get a better understanding of the tourists' perception of their experience in the protected areas. The inferential statistics looked further into the research objectives. In the next chapter, the analyses and results will be presented in depth.

5 Results

This chapter will present the results from the various analyses done as part of this study. The first section will present the socio-demographic characteristics of the tourists. This includes their gender, nationality, age and level of education. Their potential familiarity with the destination and environmental beliefs will also be presented in this section. The second section will present tourists motivation for travelling to the protected areas, their perceived experience there, and their attitude towards conservation. The third section will present the results from the analyses done to answer the research objectives. A factor analysis was done to investigate the potential dimensions of the experience that influence the tourists' understanding of their environmental impact related to nature-based tourism. A regression analysis was then done to investigate which predictors that might influence the variance in the different dimensions (factors). These predictors were a combination of the tourists' socio-demographic characteristics, familiarity with place, environmental beliefs (level of ecocentrism), and the dimensions (factors) themselves. To investigate how variations in the tourists' socio-demographic characteristics, familiarity with place, and environmental beliefs (level of ecocentrism) could create differences between the tourists' perception of these dimensions (factors), Independent Samples t-Tests and One-Way ANOVA tests were done in relation to the dimensions (factors) that was found. Because of the apparent importance of the tourists' environmental beliefs, Independent Samples t-Tests and One-Way ANOVAs were also done for the socio-demographic characteristics in relation to environmental beliefs to get a deeper understanding of these relationships.

5.1 Section 1: Socio-demographic variables, familiarity with place, and environmental beliefs

The purpose of this section is to give a better understanding of the socio-demographic background of the tourists. This understanding will be important for the comparison of different tourist groups in the later analyses.

5.1.1 Socio-demographic characteristics

Nationality

The sample contains 23 countries and is mainly comprised of visitors from North America and Europe. The countries from North America constitutes respectively USA (35.3%) and Canada (3.2%). The countries from Europe with the highest representation is: Germany

(13.4%), Spain (8.6%), Switzerland (5.3%), UK (4.3%), Netherlands (3.2%), Italy (3.2%) and France (3.2%). Two other countries with noticeable representation are Israel (3.2%), and Australia (3.2%). The remaining 13.9% of the sample came from 12 different countries across Europe, South America, Asia, Africa and Oceania.

Gender

The gender distribution of the sample is quite evenly distributed and consists of 47.1% males and 52.9% females. For later analysis, they are divided into two groups (male and female) to look at the influence of gender.

Age

The age distribution of the sample ranged from 21 to 85 years old. The mean age was 44 and had a Std. Deviation of 16.462. The distribution can be seen in figure 5 below.

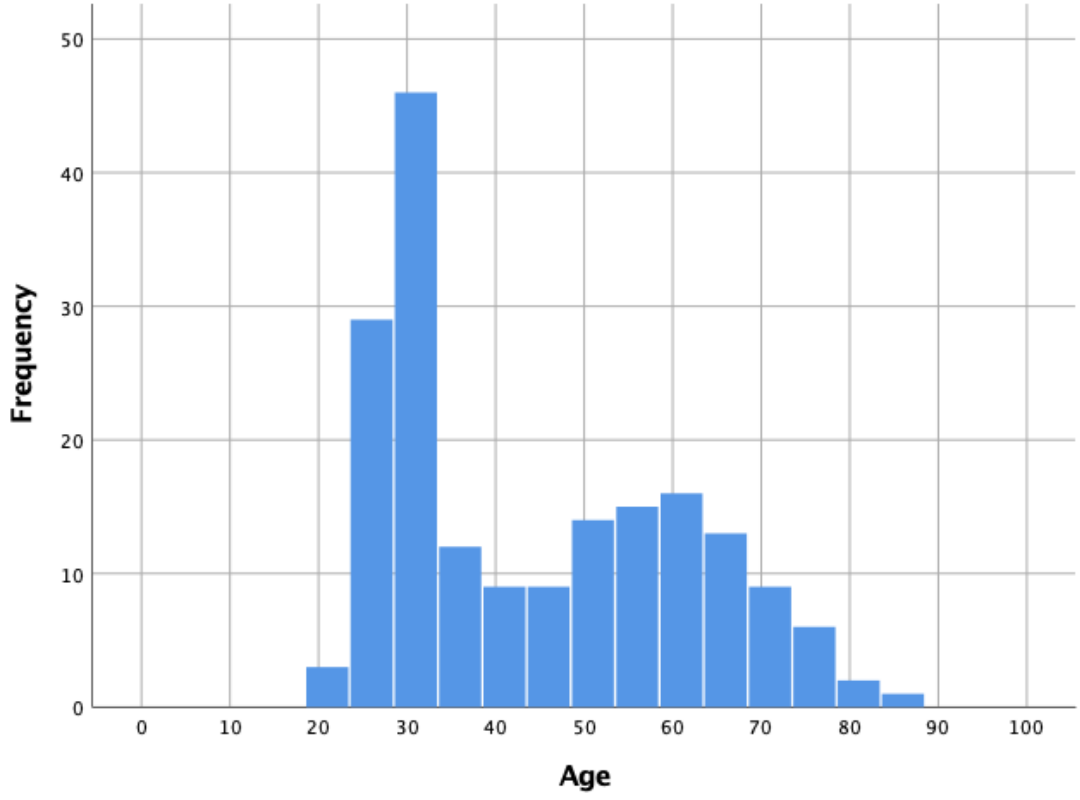

Figure 5. Age distribution. N = 184.

For later analysis, the age variable was grouped into three groups based on a combination of visible natural breaks and logic groups that reflect how age groups are perceived in society.

Group 1 consists of tourists that are 35 years old or younger (47.3%). Group 2 consists of tourists that lies within the interval of 36 to 60 years old (31%). Group 3 consists of tourists that are 61 years old or older (21.7%).

Education

The sample represents a well-educated segment of the population and as many as 87.4% have completed a college or university level education. The full distribution of educational level can be seen in figure 6 below.

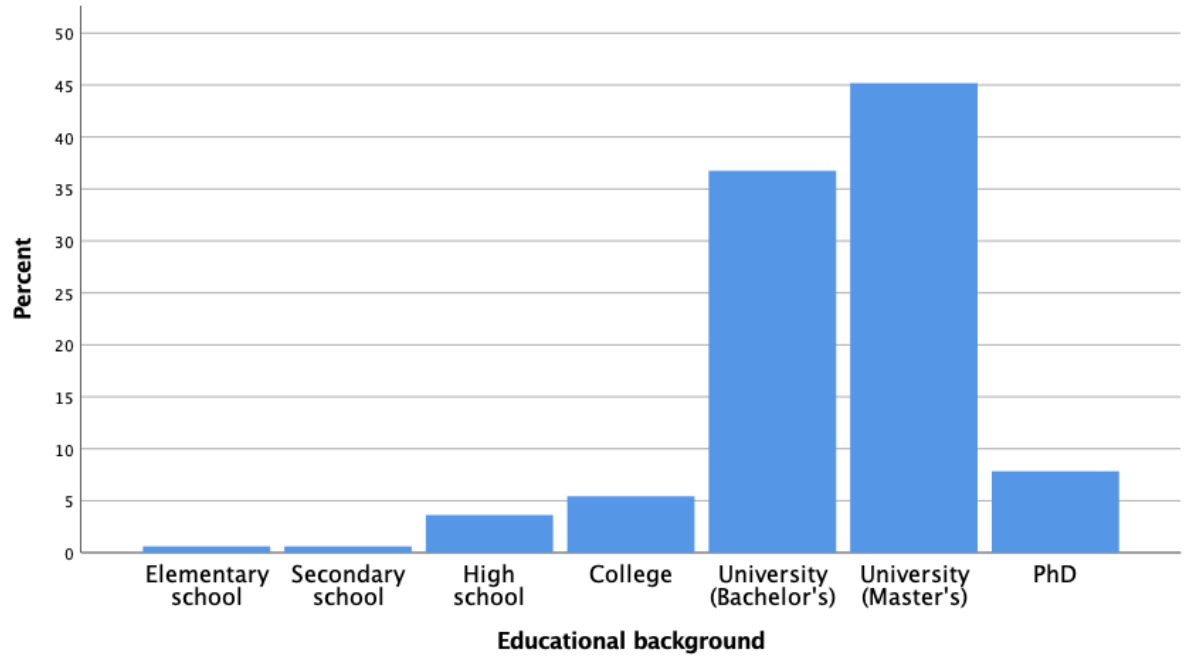

Figure 6. Educational background. N = 166.

The tourists were divided into two groups of educational level for later analysis. Because of the high number of well-educated tourists, a line of lower or higher education had to be drawn at an unnatural high level. This resulted in groups where the highest educated tourists (group 1) consist of individuals with a university degree of Master's or PhD (48.9%). The lower educated group (group 2) consists of individuals with a university degree of Bachelor's, College degree or lower (51.1%).

5.1.2 Familiarity with place

The tourist's familiarity with the PAs was studied as a combination of the number of times they had visited them and the number of days they had spent there. In this way, the two aspects could potentially give information on tourists experienced-based knowledge of the PAs. The distribution of the number of times the tourists had visited the PAs is presented in figure 7 below.

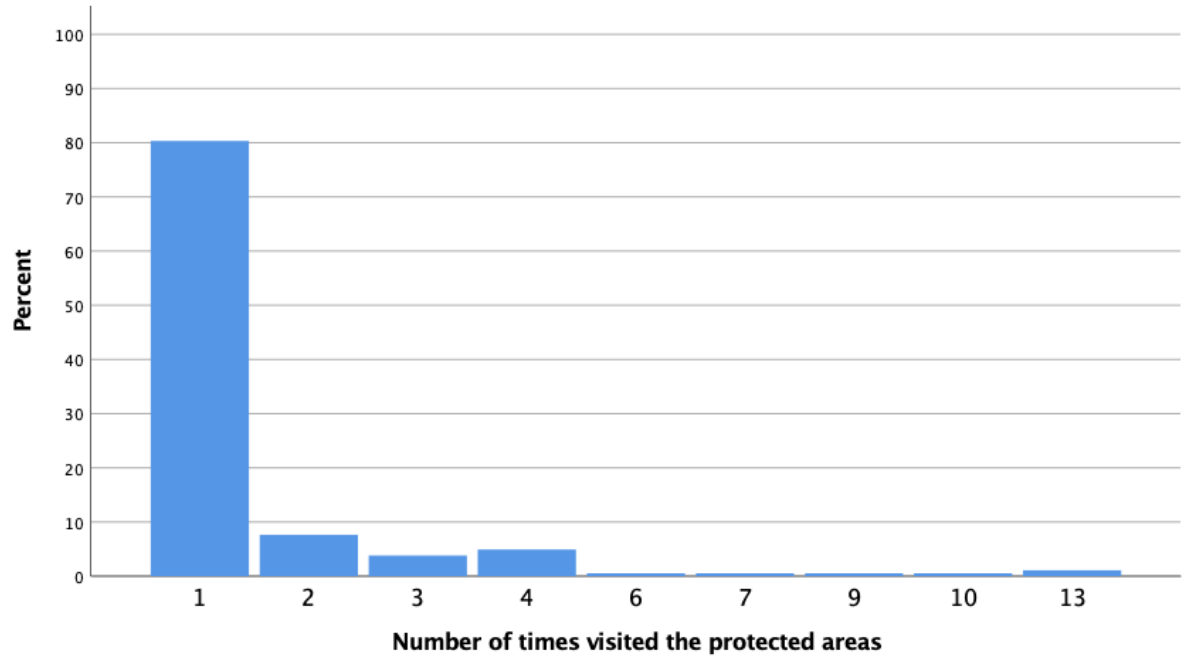

Figure 7. Number of times visited the protected areas (including this visit). N = 183.

This show that the majority of the tourists were visiting the PAs for the first time. Because of the high number of tourists that were visiting the PAs for the first time, the variable was grouped into two groups for later analysis. The first-time visitors (80.3%) constituted group 1, while group 2 consisted of everyone that had visited the PAs more than once (19.7%).

The distribution of the number of days the tourists had spent in the PAs is presented in figure 8 below.

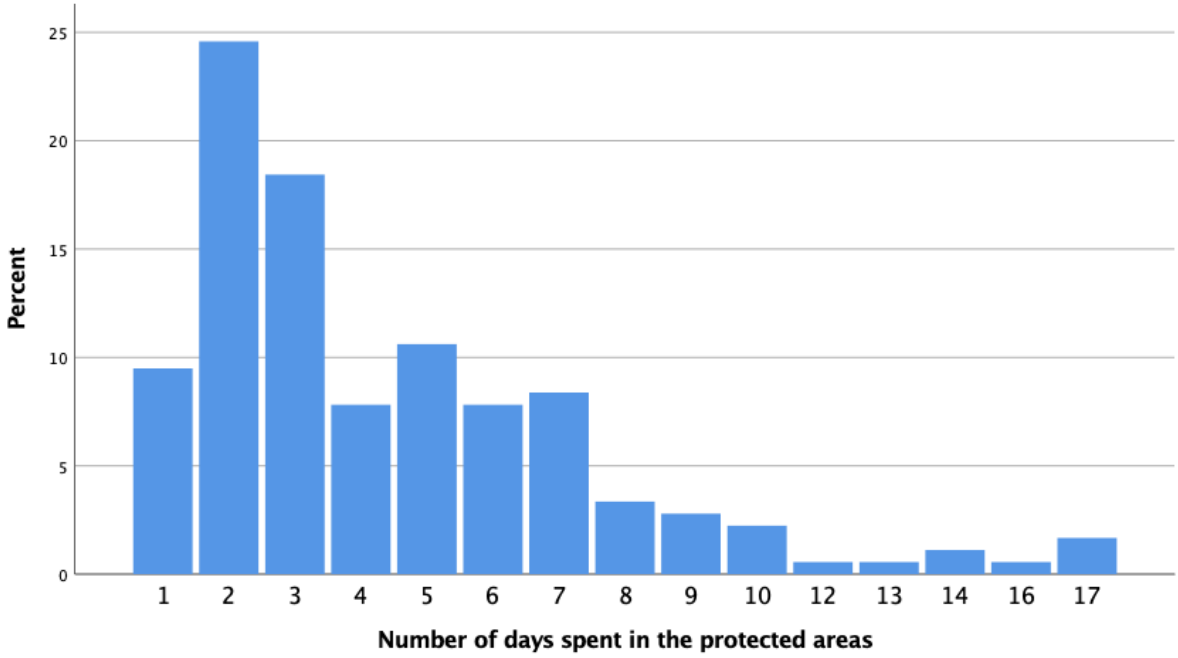

Figure 8. Number of days spent in the protected areas. N = 179.

This show that there is a broad distribution of how long the tourists had been in the PAs. For later analysis, the tourists were grouped into two groups dependent of how many days they had been in the PAs. Group 1 consisted of the tourists that had spent 3 or less days in the PAs. This group accouted for 52.5% of the sample. Group 2 consisted of tourists that had spent 4 or more days in the PAs. This group accounted for 47.5% of the sample.

Traveling with a tour company, or self-guided

In this sample, 96.2% of the sample were travelling with a tour operator. This show that most tourists traveling to these PAs are part of guided tours. The remaining 3.8% however, were self-guided.

5.1.3 Environmental beliefs

In a similar way as done by Kaltenborn et al. (2011), an ecocentrism approach, based on the New Environmental Paradigm was used when measuring the environmental beliefs. The 8 items in the NEP-scale, presented in table 1 below, and the Likert scale (1-5) was also used in a similar way. In the Likert scale, the number 1 represented strongly disagree and the number 5 represented strongly agree. This also meant reversing the NEP-scale statement 33, 35, 37 and 39 for the creation of the level of ecocentrism groups. In this way, each case would be a

measure of ecocentrism, and could be summarized for each variable and ranked accordingly. The sample could then be split into three groups, reflecting a low, medium or high level of ecocentrism. A reliability analysis using Cronbach's Alpha also showed that all the items in the NEP-scale contributed to a scale consistency that was satisfactory ($\alpha = .732$).

Table 1. New Environmental Paradigm statements.

New Environmental Paradigm statements	Mean	Std. Deviation	N (187)
32 The balance in nature is delicate and can easily be disturbed	4,3	0,8	185
33 Humans have the right to modify the natural environment so that it satisfies our needs	2,1	1,2	186
34 Humans abuse nature to a degree that is very serious	3,9	1,1	182
35 All the talk about the ecological crisis is heavily exaggerated	1,8	1,1	184
36 Animals and plants have the same rights as humans to live on this earth	4,2	1,0	184
37 The balance in nature is stable enough to tackle the pressure from human society	2,3	1,1	184
38 If we continue on the same course as now we will soon experience an ecological catastrophe	3,8	1,0	180
39 The innovative nature of humans will ensure sustainable life conditions for humans in the future	3,2	1,0	176

By using a similar setup as a previous study in the same area, it gives a good basis for comparison between them, in addition to potential future studies. After doing a literature review however, it seemed difficult to find a standardized way of dividing the cases into three groups. A few options were therefore discussed as possible alternatives. The first, and perhaps best option was to find the natural breakpoints in the data using SPSS. This would lead to groups that would be as similar as possible within each category, while simultaneously be as different as possible between the categories. Unfortunately, this was not possible in SPSS and was therefore discarded. Option Number two was to use breakpoints at 33.33 and 66.66 percentiles to get an approximately equal number of cases in each group. The positive aspects of doing this was the even distribution of cases in each group, and how this would lead to a natural distribution of the groups. A negative aspect is how it would lead to an even transition between the categories, causing cases scoring just slightly different to be put into different categories. The third option was to set criteria to the different categories. An example of this

could be to only allow cases that scored 4 or higher for each variable to be allowed in the "High" category. The positive aspect of this is that it would provide "strong" groups in each category. The negative aspect is that it would create small top and bottom categories. This could make the results "weaker" because it could lead to amplified significant differences between the categories. In the end, the choice fell on option number two. By dividing the groups using 33.33 and 66.66 percentiles, it gave an approximately equal distribution of cases in each category. In addition, it could provide a consistent method for future research.

This resulted in three groups that could be used in later analysis. When looking at the valid percent of the distribution, the group that was categorized as showing a low level of ecocentrism (group 1) consisted of 37.1% of the tourists. The group that was categorized as showing a medium level of ecocentrism (group 2) consisted of 32.4% of the tourists. The final group was categorized as showing a high level of ecocentrism (group3) and consisted of 30.6% of the tourists. It is important to remember that these categories are based on decisions made by the author. The category of "low" is therefore not necessarily very low, and "high" is not necessarily very high. It is possible to argue that most people spending a large amount of money to visit national parks are somewhat interested in the natural environment and conservation. The "low" and "high" categories in this case, therefore represents lower or higher than the other tourists in the PAs.

5.2 Section 2: Travel motivation and perception of experience, attitude towards conservation and the authenticity concept

The purpose of this section is to present the tourists motivation for travelling to the PAs, their perceived experience there, and their attitudes towards conservation and the concept of authenticity. This could give a better understanding of tourists' perceptions and could be used to look for interesting differences between this and previous studies for the same area.

5.2.1 motivation

In Figure 9 below, one can see a distribution summary of the tourist's answers to potential reasons for visiting the PAs.

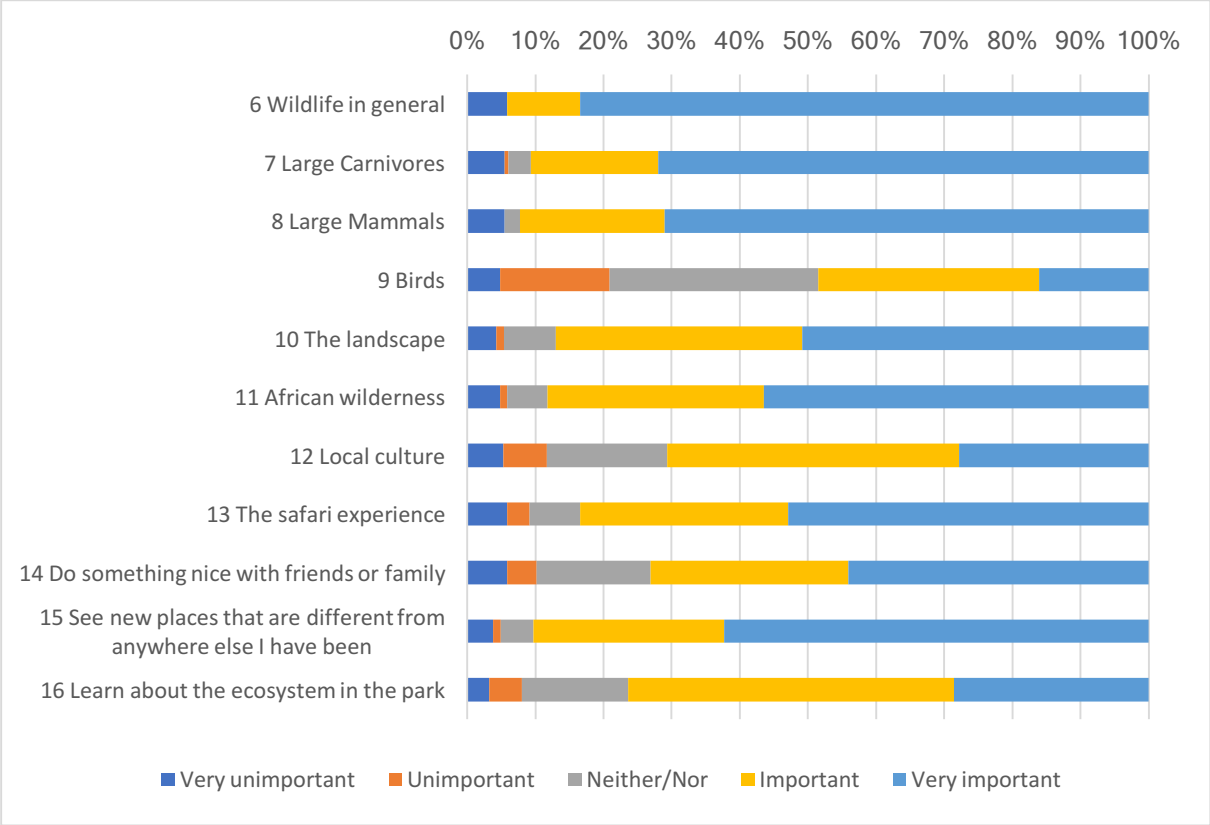

Figure 9. Reason for visiting the protected areas. Sorted based on the questions number in the questionnaire (Appendix A).

These answers indicate that wildlife, except for birds, are of great importance for tourist's decision to travel to the PAs. The natural environment, in the form of landscape and idea of the African wilderness, also appear to be of great importance. In a similar way, the safari experience and the ability to see new places that are different from anywhere else the individual has been, are also believed to be of great importance. What seems to be of less importance, but still important for approximately 70-75% of the tourists, is local culture, to do something nice with friends or family, and learning about the ecosystem in the PAs.

5.2.2 Perception of experience and attitudes towards conservation and the authenticity concept

In Figure 10 below, the distribution summary of the tourist's perception of their experience in the PAs is presented. The figure also presents their attitude towards conservation and the concept of authenticity.

*Figure 10. Perception of experience in the protected areas and attitudes regarding conservation and authenticity. *Question 27 and 30 are removed because of their purpose as negated questions. Sorted based on the questions number in the questionnaire (Appendix A).*

In this section, multiple related questions from the figure below will be presented together in groups. This is done with the aim of potentially increasing the meaning of the results for further discussion. The grouping is done according to an interpretation of thematically relatedness. The presentation is not ordered in a specific way, but are meant as a way of increasing the meaning of each individual question by seeing the individual question in a wider context.

General attitudes towards management of the protected areas

The results from question 19 indicates an opinion of the management of the PAs to be very good. About 85% agrees with that statement. The results from question 17 and 18 also confirms this. For these questions, about 90% agrees that the PAs are unique and that they are one of the best places in the world to see wildlife.

Perception of the physical environment

For question 31, about 95% of the tourists answered that their expectations for the natural environment were met. About the same number of tourists answered that the wildlife experiences met their expectations in question 24.

Perception of infrastructure and tourist facilities in the protected areas

Almost 90% of the tourists found the accommodations to have the right size and adequate level of standard when asked in question 25. For question 21, when asked if tourist facilities like roads, lunch spots and view points should be improved, just above 30% agreed that they should be improved. About 50% however, disagreed with this. Only about 10% agreed with the statement in question 29, that there are too many roads in the PAs.

Perception of the amount of tourists in the protected areas

For question 20, just over 40% of the tourists agreed that there are too many tourists in the PAs. This was also similar for question 22, where about 50% agreed that the good wildlife sites often were overcrowded by tourists. The results from question 23 also show that about 45% believed there to be too many vehicles in the PAs. The percentage of people that answered neither/nor or disagreed with the statement was fairly similar for all the questions and was about 30% and 20% respectively.

Conservation measures and willingness to restrict one-self in the PAs

About 60% agrees to the statements that tourism should be restricted in parts of the PAs to protect the landscape (question 26), and wildlife (question 28). About 75% are also willing to limit their time (question 44) and possible areas to visit (question 45) to preserve the ecosystem.

Perception of knowledge and gained information

For question 40 and 41, about 80% answered that they had thought about their own impact, and that they would be interested in learning more about it. For question 42, about 40% agreed to feeling informed about their impact in the PAs. For question 43, about 45% agreed to feeling informed about the ecological situation in the PAs.

Authenticity

For question 46, almost 90% agreed that the experience they had in the PAs felt authentic. For question 47, About 95% agreed that an authentic experience in nature-tourism were important for them.

5.3 Section 3: The research questions

In this section, the results from the analyses that was done to investigate the objectives of the study is presented.

5.3.1 Objective 1. Explore which dimensions of the experience that influence the tourists' understanding of their own environmental impact on the protected areas

In an attempt to do this, both a factor analysis and a multiple regression analysis was done. They will both be presented in depth below.

5.3.1.1 Factor analysis

A principle component factor analysis with varimax rotation was used on the questions 17-31 and 40-45. This was done to investigate whether the questions could constitute potential dimensions of the experience that could influence the tourists' understanding of their own environmental impact on the protected area. The settings and assumptions used in the factor analysis are presented in the methods section 4.3.2. The determinant was .001, and therefore

met the assumptions. The KMO was .694. Because it was so close to the wanted .7 and well above the inadequate level of .5, the number of items that are predicted by each factor were considered to be adequate. The Bartlett's test was significant at p <.001 and therefore also met the assumptions. Question 21 was removed from the factor analysis because it seemed out of place and also decreased reliability measured by Cronbach's alpha. The analysis resulted in five retained factors and the factor loadings can be seen in table 2 below.

Table 2. Factor loading in relation to tourist's awareness of their own impact related to nature-based tourism.

Question	Factor				
	1	2	3	4	5
Factor 1					
23	.885				
22	.870				
20	.866				
Factor 2					
26		.823			
28		.794			
45		.683		.504	
29		.586			
Factor 3					
18			.767		
17			.688		
24			.668		
31			.533		
19			.520		
25			.472		
Factor 4					
40				.709	
41				.682	
44		.561		.592	
Factor 5					
42					.904
43					.876

After completing the factor analysis, the reliability of the factors was checked by using Cronbach's alpha. Factor 1, 2 and 5 were all above the acceptable level of .7. Factor 3 and 4 were both close to the wanted target of .7, but ended up being on the more questionable level of .6. Because literature argue that levels above .6 can be used, as pointed out in section 4.3.2,

all the factors were retained in this study. After visually inspecting the factors, they were descriptively named and presented in table 3 below for further analysis.

Table 3. Factors, and their reliability controlled by Cronbach's alpha.

Factor	No. of var.	Cronbach's alpha
1. Perception of tourisms' pressure on the protected areas	3	.884
2. Perception of needed spatial limitation of tourism	4	.768
3. Perception of the quality of the protected areas	6	.689
4. Experience-induced interest in own environmental impact	3	.644
5. Experience-induced perception of one's knowledge about own environmental impact and ecological situation in the protected areas	2	.787

Below, an interpretation and description of the different factors are presented to achieve a better understanding of the composition of the factors.

Factor 1. Perception of tourisms' pressure on the protected areas

This factor consists of the three questions 23, 22 and 20. Question 20 and 23 addresses the tourist's opinion of the amount of tourists and vehicles in the PAs in general. Question 22 addresses their opinion on whether they find good wildlife sites to be overcrowded with tourists. Together, these questions have been interpreted as a tourist's perception of tourisms' pressure on the protected areas.

Factor 2. Perception of needed spatial limitation of tourism

This factor consists of the four questions 26, 28, 45 and 29. Question 26 and 28 addresses tourist's attitudes towards restricting tourism in parts of the protected areas for protecting the wildlife and landscape. Question 45 is about the tourist's willingness to limit the areas that can be visited in the PAs to preserve the ecosystem. Question 29 addresses tourist's attitudes towards the number of roads in the protected areas. Together these questions have been interpreted as a tourist's perception of needed spatial limitation of tourism.

Factor 3. Perception of the quality of the protected areas

This factor consists of question 18, 17, 24, 31, 19 and 25. Question 17 and 18 addresses the questions of whether the protected areas are unique, and one of the best places to see wildlife in the world. Question 24 and 31 is about whether the wildlife experience and quality of the

natural environment met their expectations. Question 19 is about their perception of the management of the protected areas. Question 25 is asking whether the accommodations are believed to be the right size and have an adequate level of standard. Together, these questions have been interpreted as a tourist's Perception of the quality of the protected areas.

Factor 4. Experience-induced interest in own environmental impact

This factor consists of question 40, 41 and 44. Question 40 is about whether the tourist has thought about their own impact in the PAs or not. Question 41 ask whether they would like to learn more about their impact in the PAs. Question 44 is about their willingness to limit their time in the PAs to protect the ecosystem. Together, these questions have been interpreted as a tourist's experience-induced interest in own environmental impact.

Factor 5. Experience-induced perception of one's knowledge about own environmental impact and ecological situation in the protected areas

This factor consists of question 42 and 43. Question 42 is about whether the tourist feel informed about their impact in the PAs. Question 43 is about whether the tourist feel informed about the ecological conditions in the PAs. Together, these questions have been interpreted as a tourist's experience-induced perception of one's knowledge about own environmental impact and ecological situation in the protected areas.

5.3.1.2 Regression analysis

Because of the exploratory nature of this study, the correlations for all predictors and factors were calculated to look for significant results. This can be seen in figure 10 in Appendix B. Border-significant results from the correlation were also tested in a regression analysis. Predictors that turned out to be non-significant at the satisfactory level of .05, were not included in the final regression. Below is a presentation of the regression analyses.

Factor 1. Perception of tourisms' pressure on the protected areas

The correlation between factor 1 (dependent variable) and the predictors (independent variables) was statistically significant, $r(133) = .40$, $p < .001$. The Adjusted R Square was .149; that is, 14.9% of the variance in factor 1 was predictable from the predictors. The predictors for factor 1 was factor 2 and how many days the tourists had spent in the PAs. The positive (+ Std. Beta) or negative (- Std. Beta) can be seen in table 4 below, and show the positive or negative relationship between the dependent variable and independent variables.

*Table 4. Relationship between Factor 1 (dependent variable) and the predictors (independent variables). * = p ≤ .05. *** = p ≤ .001.*

Factor 1. Perception of tourisms' pressure on the protected areas		
	Std. Beta	Std. Error
Constant		1.085
Factor 2	.361***	.073
Days spent in the Pas	.186*	.064

Factor 2. Perception of needed spatial limitation of tourism

The correlation between factor 2 (dependent variable) and the predictors (independent variables) was statistically significant, r(132) = .55, p < 001. The adjusted R square was .290; that is; 29.0% of the variance in factor 2 was predictable from the predictors. The predictors for Factor 2 was factor 4, factor 1 and the tourist's level of ecocentrism. The positive (+ Std. Beta) or negative (- Std. Beta) can be seen in table 5 below and show the positive or negative relationship between the dependent variable and independent variables.

*Table 5. Relationship between Factor 2 (dependent variable) and the predictors (independent variables). * = p ≤ .05. *** = p ≤ .001.*

Factor2. Perception of needed spatial limitation of tourism		
	Std. Beta	Std. Error
Constant		1.838
Factor 4	.325***	.119
Factor 1	.339***	.079
Environmental beliefs	.189*	.046

Factor 3. Perception of the quality of the protected areas

The correlation between factor 3 (dependent variable) and the predictors (independent variable) was statistically significant, r(146) = .29, p < 001. The adjusted R square was .075; that is, 7.5% of the variance in factor 3 was predictable from one predictor. The predictor for factor 3 was factor 4. The positive (+ Std. Beta) or negative (- Std. Beta) can be seen in table 6 below and show the positive or negative relationship between the dependent variable and independent variable.

*Table 6. Relationship between Factor 3 (dependent variable) and the predictors (independent variable). *** = p ≤ .001.*

Factor 3. Perception of the quality of the protected areas		
	Std. Beta	Std. Error
Constant		1.505
Factor 4	.285***	.123

Factor 4. Experience-induced interest in own environmental impact

The correlation between factor 4 (dependent variable) and the predictors (independent variables) was statistically significant, r(123) = .53, p < 001. The adjusted R square was .255; that is, 25.5% of the variance in factor 4 was predictable from the predictors. The predictor for factor 4 was factor 2, the tourist's level of ecocentrism, factor 3 and the tourist's level of education. The positive (+ Std. Beta) or negative (- Std. Beta) can be seen in table 7 below and show the positive or negative relationship between the dependent variable and independent variables.

*Table 7. Relationship between Factor 4 (dependent variable) and the predictors (independent variables). * = p ≤ .05. ** = p ≤ .01. *** = p ≤ .001.*

Factor 4. Experience-induced interest in own environmental impact		
	Std. Beta	Std. Error
Constant		1.806
Factor 2	.305***	.052
Environmental beliefs	.201*	.031
Factor 3	.243**	.050
Education	.158*	.147

Factor 5. Experience-induced perception of one's knowledge about own environmental impact and ecological situation in the protected areas

The correlation between factor 5 (dependent variable) and the predictors (independent variables) was statistically significant, r(158) = .42, p < 001. The adjusted R square was .159; that is, 15.9% of the varaiance in factor 5 was predictable from the predictors. The predictors for factor 5 was the level of ecocentrism, how many days the tourists had spent in the PAs and

age. The positive (+ Std. Beta) or negative (- Std. Beta) can be seen in table 8 below and show the positive or negative relationship between the dependent variable and independent variables.

*Table 8. Relationship between Factor 5 (dependent variable) and the predictors (independent variables). * = p ≤ .05. *** = p ≤ .001.*

Factor 5. Experience-induced perception of one's knowledge about own environmental impact and ecological situation in the protected areas		
	Std. Beta	Std. Error
Constant		.943
Environmental beliefs	-.326***	.029
Days spent in the Pas	.176*	.044
Age	.192*	.009

5.3.2 Objective 2. Explore how variation in tourists' socio-demographic characteristics, familiarity with place and environmental beliefs create differences between the tourists' perception of these dimensions

To gain a deeper understanding of how the variation in the tourists socio-demographic characteristics, familiarity with place and environmental views create differences between the tourists' perceptions of the dimensions (factors) that was found, Independent Samples t-Tests and One-Way ANOVA tests were done. The Independent Samples t-Test and One-Way ANOVA tests for the three categories of influencing aspect only gave significant results for factor 2, 4 and 5, and can be seen in table 9 below. For each of these factors, only the influencing aspects with significant or border-significant results are presented in detail.

*Table 9. Comparing means for socio-demographic variables, familiarity with place and environmental beliefs for the different factors. * = p ≤ .05. ** = p ≤ .01. (b) = border-significant.*

		Factor				
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Socio-demographic characteristics	Gender groups	.485	.263	.954	.222	.053(b)
	Age groups	.633	.237	.105	.062(b)	.095
	Education groups	.563	.757	.310	.107	.103
Familiarity with place	Times visited the PAs groups	.955	.062(b)	.186	.025*	.161
	Days spent in the PAs groups	.174	.110	.615	.767	.015*
Environmental belief	Environmental belief groups	.344	.030*	.678	.000**	.008**

Factor 2. Perception of needed spatial limitation of tourism

The One-Way ANOVA test for the tourist's level of ecocentrism groups showed a significant difference between the groups, $F(2,136) = 3.598$, $p = .030$, $\eta_p^2 = .05$. Post hoc testing revealed significant differences between group 3 (≥34); (M = 14.81, SD = 2.862) showing a perception of greater need for a spatial limitation of tourism than group 1 (≤29); (M = 13.26, SD = 3.020). This result indicates that an individual's level of ecocentrism is positively correlated with that individual's perception of the need for a spatial limitation of tourism.

The Independent Samples t-Test for the number of times visited the PAs showed a border-significant difference between the groups, $t(145) = 1.878$, $p = .062$, $d = .567$. Group 1 (1 time); (M = 14.25, SD = 2.698) was showing a perception of greater need for a spatial limitation of tourism than group 2 (≥ 2 times); (M = 13.19, SD = 3.297). This border-significant result could potentially have been significant with a larger sample size. This result indicates that an individual's number of visits to the PAs is negatively correlated with that individual's perception of the need for a spatial limitation of tourism.

Factor 4. Experience-induced interest in own environmental impact

The One-Way ANOVA test for the age groups showed a border-significant difference between the groups, $F(2,168) = 2.833$, $p = .062$, $\eta_p^2 = .03$. Post hoc testing revealed a border-significant difference ($p = .084$) between group 3 (≥61); (M = 12.49, SD = 1.557), showing a greater experience-induced interest in own environmental impact than age group 2 (36-60); (M = 11.66, SD = 1.931). This border-significant result could potentially have been

significant with a larger sample size and is therefore included. This result indicate that an individual's age is positively correlated with that individual's level of experience-induced interest in own environmental impact.

The One-Way ANOVA test for the tourist's level of ecocentrism groups showed a significant difference between the groups, $F(2,158) = 10.130$, $p < .001$, $\eta_p^2 = .11$. Post hoc testing revealed a significant difference ($p < .001$) between group 3 (≥34); ($M = 12.89$, $SD = 1.577$), showing a greater experience-induced interest in own environmental impact than group 1 (≤29); ($M = 11.37$, $SD = 2.058$). Post hoc testing also revealed a border-significant difference ($p = .054$) between group 2 (30-33); ($M = 12.17$, $SD = 1.502$), showing a greater experience-induced interest in own environmental impact than group 1 (≤29); ($M = 11.37$, $SD = 2.058$). The border-significant result could potentially have been significant with a larger sample size and is therefore included. These results indicate that an individual's level of ecocentrism is positively correlated with that individual's level of experience-induced interest in own environmental impact.

The Independent Samples t-Test for the number of times visited the PAs groups showed a significant difference between the groups, $t(171) = 2.255$, $p = .025$, $d = .343$. Group 1 (1 time); ($M = 12.20$, $SD = 1.635$) showed a greater experience-induced interest in own environmental impact than group 2 (≥2 times); ($M = 11.43$, $SD = 2.404$). This result indicates that the number of times an individual has visited the PAs is negatively correlated with that individual's level of experience-induced interest in own environmental impact.

Factor 5. Experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas

The Independent Samples t-Test for the gender groups showed a border-significant difference between the groups, $t(171) = 1.951$, $p = .053$, $d = .288$. Group 1 (male); ($M = 6.51$, $SD = 1.769$) Showed a greater experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas than group 2 (female); ($M = 5.94$, $SD = 1.996$). This border-significant result could potentially have been significant with a larger sample size and is therefore included. This result indicates that men tend to perceive their experience-induced perception of knowledge about own environmental impact and ecological situation in the protected areas to be higher than what women do.

The One-Way ANOVA test for the tourist's level of ecocentrism groups showed a significant difference between the groups, $F(2,159) = 4.939$, $p = .008$, $\eta_p^2 = .06$. Post hoc testing revealed that group 1 (≤29); (M = 6.75, SD = 1.856) Showed a greater experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas than group 3 (≥34); (M = 5.68, SD = 1.856). This result indicates a negative correlation between an individual's level of ecocentrism and that individual's level of experience-induced perception of knowledge about own environmental impact and ecological situation in the protected areas.

The Independent Samples t-Test for the number of days spent in the PAs groups showed a significant difference between the groups, $t(167) = -2.462$, $p = .015$, $d = .289$. Group 2 (≥4); (M = 6.59, SD = 1.709) Showed a greater experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas than group 1 (≤3); (M = 5.88, SD = 1.999). This result indicates that an individual's number of days spent in the PAs is positively correlated with that individual's level of experience-induced perception of knowledge about own environmental impact and ecological situation in the protected areas.

Together these results show that it is the tourists' environmental beliefs that is the most frequent influencing aspect that creates variations between the tourists' perception of their experience. Because of this, Independent Samples t-Tests and One-Way ANOVA tests were also done for the socio-demographic variables in relation to their environmental beliefs. This was done in an attempt to get a deeper understanding of how the tourists differences in socio-demographic variables could create differences in their environmental beliefs, measured as level of ecocentrism.

Gender

The Independent Samples t-Test for the gender groups turned out to be non-significant.

Age

The One-Way ANOVA test for the age groups showed a significant difference among the groups, $F(2,164) = 3.45$, $p = .034$, $\eta_p^2 = .04$. Post hoc testing revealed a border-significant difference ($p = .064$) between age group 3 (≥61 years old); (M = 32.83, SD = 5.294), showing higher levels of ecocentrism than age group 2 (36-60 years old); (M = 30.34, SD = 4.658).

Post hoc testing also revealed a border-significant difference (p = .060) between age group 3 (≥61 years old); (M = 32.83, SD = 5.294), showing higher levels of ecocentrism than age group 1 (≤35 years old); (M = 30.57, SD = 4.494). These border-significant results could potentially have been significant with a larger sample size and is therefore included. These results indicate that an individual's age is positively correlated with that individual's level of ecocentrism.

Education

The Independent Samples t-Test for the education groups were border-significant t(152) = -1.85, p = .067, d = .77. The higher educated group (M = 31.53, SD = 4.58) showed higher levels of ecocentrism than the lower educated group (M = 30.11, SD = 4.98). This border-significant result could potentially have been significant with a larger sample size and is therefore included. This result indicate that an individual's level of education is positively correlated with that individual's level of ecocentrism.

In this chapter, the results from the different analyses has been presented. In section 1, the tourists' socio-demographic background, familiarity with place, and environmental beliefs (measured as level of ecocentrism) was presented. In section 2, the tourists' travel motivation and perception of their experience, in addition to their attitude towards conservation and the authenticity concept was presented. These results were fairly similar to those found by previous studies in the same areas. In section 3, the results from the analyses linked to the research objectives was presented.

For research objective 1 (Explore which dimensions of the experience that influence the tourists' understanding of their own environmental impact on the protected areas), a factor analysis was done to look for potential dimensions. After interpretation, it resulted in five dimensions (factors):

1. Perception of tourisms' pressure on the protected areas.
2. Perception of needed spatially limitation of tourism.
3. Perception of the quality of the protected areas.
4. Experience-induced interest in own environmental impact.
5. Experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas.

Then, a regression analysis was done to investigate which predictors that might influence the variance in the different dimensions (factors). The regression analysis revealed that the predictors consisted of a multitude of different socio-demographic characteristics, familiarity with place, environmental views, and the factors themselves. Out of these predictors, Factor 2 (perception of needed spatially limitation of tourism) and tourists' environmental beliefs turned out to be the most frequent predictors. The Adjusted R Squared however, clearly showed that the predictors only explain a smaller portion of this variation.

For research objective 2 (Explore how variation in tourists' socio-demographic characteristics, familiarity with place and environmental beliefs create differences between the tourists' perception of these dimensions), Independent Samples t-Tests and One-Way ANOVA tests were done in relation to the dimensions (factors) that was found. The tourists' familiarity with place showed significant differences between groups for some of the dimensions (factors). It turned out to be the tourists' environmental beliefs however, that most frequently showed significant differences between the groups of tourists. Because of the apparent importance of the tourists' environmental beliefs, Independent Samples t-Tests and One-Way ANOVA tests were also done fort the socio-demographic characteristics in relation to the tourists' environmental beliefs. Age and education turned out to have significant differences in these tests and could therefore explain some differences between the tourists' level of ecocentrism. In the next chapter, the results will be discussed in relation to the objectives and research question of the study. The results potential implications on the future management of the PAs will also be discussed.

6 Discussion

The purpose of this study is to explore whether the tourism experience affect the tourist's understanding of their own environmental impact related to nature-based tourism in protected areas. The results potential implications for the future management of PAs will also be part of the discussion. In an attempt to answer the research question, two research objectives were established. The purpose of research objective 1 was to explore which dimensions of the experience that potentially could influence the tourists' understanding of their own environmental impact on the protected areas. The purpose of research objective 2 was to explore how variation in tourists' socio-demographic characteristics, familiarity with place and environmental beliefs create differences between the tourists' perception of these dimensions. Below, the discussion will use the theoretical framework together with the most relevant results in an attempt to answer the research question.

To the knowledge of this author, there exist little unambiguous systematic research on this subject from a viewpoint of social sciences. The discussion about the results will therefore to a large extent be an attempt to see how they can contribute to a deeper understanding of the research question. The theoretical framework that has been presented will be used in an attempt to use existing theories to explain the results. As mentioned in the methods section, the operationalisation is important for the validity of the results in this study. Because of the relatively exploratory nature of this study however, the operationalisation had to be based on questions from studies that was looking at topics that arguable share similarities with the objective of this study. In addition, there were created original questions by the author. The complex nature of investigating individuals' perceptions and what it is that influence them however, made the operationalisation difficult and possibly led to omitted variables. This also address the importance of being cautious in the further argumentation of the meaning of the results.

In an attempt to explore which dimensions of the experience that influence the tourists' understanding of their own environmental impact on the protected areas, a factor analysis was run. After interpretation, it resulted in five dimensions (factors).

1. Perception of tourisms' pressure on the protected areas.
2. Perception of needed spatially limitation of tourism.
3. Perception of the quality of the protected areas.

4. Experience-induced interest in own environmental impact.
5. Experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas.

The questions used in the factor analysis included questions about the tourists' experience in the protected areas and their attitude towards conservation related topics. This was done in an attempt to capture potential parts of the experience that was also linked to conservation in the PAs. This was done because it was believed to potentially increase the knowledge about the link between the tourism industry and conservation efforts. The questions that was chosen were also believed to have the potential of being explained by the different theories presented in the theoretical framework in this study. This belief was based on the influencing aspects that frequently had been used to investigate residents' perception of the impacts from tourism in other studies as presented by (Gill, 2015). The intention of this study was that they potentially could be influencing the tourists' understanding of their own environmental impact in the PAs as well.

The multiple regression analysis showed how many of the factors were mutually predicting some of the variance in each other. As presented in the results, the percentage of this influence was a rather small portion. Nevertheless, one could see how these dimensions (factors) could be related to each other as part of the tourism experience. Because of these relationships, presenting the dimensions (factors) separately seems unnatural. A general discussion, where they together are seen as potential influencing aspects of the tourists' understanding of their own environmental impact in the PAs, is therefore believed to better answer the research question. The following discussion will therefore use the theoretical framework presented earlier to explore how the most relevant results from research objective 1 and 2, together, could answer the research question.

6.1 Does the tourism experience affect the tourists' understanding of their own environmental impact related to nature-based tourism?

For factor 1 (Perception of tourisms' pressure on the protected areas), research objective 2 found no significant results for the tourists' socio-demographic characteristics, familiarity with place or environmental beliefs that created differences between the tourists' perception of the factor. The regression analysis showed that factor 2 (perception of needed spatial limitation of tourism), and the number of days the tourists had spent in the PAs, predicted a

small portion of the variance in the factor. This show that the two predictors are influencing it to a certain degree. Because Factor 1 (Perception of tourisms' pressure on the protected areas) also predict some of the variance in factor 2 (perception of needed spatial limitation of tourism), it shows that the tourists perception of whether a spatial limitation of tourism is needed, is influenced by their perception of tourisms' pressure on the PAs. To investigate this connection further, and to investigate how it potentially could say something about how they understand their own environmental impact in the PAs, this will be investigated further by using the theoretical framework. Because factor 1 (Perception of tourisms' pressure on the protected areas) consist of three questions that was used in a previous study, it will also be seen in a context of changes in the PAs over time. The descriptive data from this and the past study in the area will also be compared and discussed using the theoretical framework.

Before comparing the results in this study with the ones found in the studies of Kaltenborn et al. (2011) and Okello and Yerian (2009), it is important to mention that these studies did not look at the specific combination of protected areas that was done in this study. Kaltenborn et al. (2011) looked at the SNP specifically, and Okello and Yerian (2009) looked at the entire Northern Circuit of PAs, including SNP and NCA. Some differences in formulation of questions, in addition to likert-scale choices will also affect the transferability between the studies. The following comparison between the studies will therefore be discussed based on the interpretations by the author of this study.

Both this study, and the study done by Kaltenborn et al. (2011), used the same three questions, asking whether there were too many tourists in the PAs, whether the wildlife sites were overcrowded by tourists and whether there were too many vehicles in the PAs. These are also the three questions that factor 1 (perception of tourisms' pressure in the protected areas) consists of in this study. An interesting observation is that the percentage of tourists that agreed to these statements have remained fairly static over a period of about 10 years. That the number of tourists that agreed to the three statements remained fairly similar indicates that the tourists' perception of the amount of tourists has not changed much over the last decade. The additional data from the NCA in this study makes a conclusion about the changes in responses for SNP over the last 10 years less relevant than it could have been. Based on the fact that NCA has had an even greater increase in tourist numbers however, it becomes interesting to discuss this lack of change towards a higher percentage of negative responses in this study. This is because it discusses the relationship between factor 1 (perception of

tourisms' pressure on the protected areas) and factor 2 (perception of needed spatial limitation of tourism) with a practical example.

To explain this relationship, the argument Hillery et al. (2001) makes about how tourists tend to notice presence of litter and other physical impacts, rather than long-term degradation is relevant. It could be argued that this presence of other tourists and tourism vehicles could be seen as such physical impacts. Whether the tourists make the connection between their perception of the amount of pressure on the PAs from other tourist, and their own presence in the PAs is unclear however. At least, it could be argued that it has the potential to increase their understanding of how they are part of this pressure. This could then affect how they perceive their own environmental impact in the PAs. A contradiction to this argument however, is how Kaltenborn et al. (2011) pointed out that visitors in tourism studies often report that they are satisfied with the current conditions and that they seem to perceive their own environmental impact from their tourism activity to be small. What they seem to be concerned about however, are negative changes linked to rising tourist numbers in the future. This is interesting because it seems to indicate that the tourists not necessarily acknowledge the connection they have as one individual of the total number of tourists. Perhaps this connection between factor 1 (perception of tourisms' pressure on the protected areas) and factor 2 (perception of needed spatial limitation of tourism) only shows how the tourists think other tourists need to be limited. If this is the case, the present tourist will always perceive the present conditions to be better than potential future conditions. This would indicate a lack of understanding for how some tourist might have thought that same thing a decade earlier, and that they now are part of that future scenario.

Because the regression analysis also shows how there is a connection between factor 2 (perception of needed spatial limitation of tourism) and factor 4 (Experience-induced interest in own environmental impact), it becomes interesting to include the potential influencing aspects of factor 4 in this discussion as well. Factor 4 (Experience-induced interest in own environmental impact), is especially linked to the individuals' interest in their own impact, and also includes an aspect of their willingness to limit their time in the PAs to preserve the ecosystem. This could indicate that how the tourists respond to factor 2 (perception of needed spatial limitation of tourism) and 4 (Experience-induced interest in own environmental impact), together, would determine whether they show awareness of their own part of the tourism pressure as one individual out of all the tourists.

The regression analysis show that the variance in both factor 2 (perception of needed spatial limitation of tourism) and 4 (Experience-induced interest in own environmental impact), also are partly predicted by environmental beliefs (level of ecocentrism). In addition to this, research objective 2 also found the tourists' environmental beliefs (level of ecocentrism) to show significant differences between how the tourists responded to both of the factors. For factor 2 (perception of needed spatial limitation of tourism), the results showed that the tourists that had a higher level of ecocentrism, also had a perception of there being greater need for spatial limitation of tourism. For factor 4 (Experience-induced interest in own environmental impact), the significant different between the high level of ecocentrism group and low level of ecocentrism group, in addition to the border significant difference between the medium level of ecocentrism and low level of ecocentirsm group, showed that the tourists that had a higher level of ecocentrism, also had a greater experience-induced interest in their own environmental impact.

This argued connection between factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism) and 4 (Experience-induced interest in own environmental impact), and its relationship with the tourists environmental views (level of ecocentrism) can be backed by the theoretical framework. In the section about individuals environmental views, measured as level of ecocentrism, Kaltenborn et al. (2011) and Xu and Fox (2014) show how individuals with a higher level of ecocentrism, are more likely to support management strategies that has a focus on limiting tourism activities, access and impacts. In the theoretical framework, Dunlap et al. (2000) also show how an individuals' age and education has been proven to be two of the most important aspects in determining the individuals level of ecocentrism. Xu and Fox (2014) argue however, that individuals that decide to visit a national park in the first place might have different nature views than the general population. To get a better understanding of how the tourist socio-demographic characteristics in this study matched the general trends in research, Independent Samples t-Tests and One-Way ANOVA tests were done for the tourists' gender, age and education in relation to their level of ecocentrism.

Contrary to the trend in most existing literature, this study found a significant negative correlated relationship between an individuals' age and level of ecocentrism. This meant that the oldest age group was found to be the one with the highest level of ecocentrism. Usually,

this tend to be the youngest age group (Dunlap et al., 2000). When looking at education, border-significant results indicated that higher educated people on average held a higher level of ecocentrism than lower educated people. This is in line with existing literature (Dunlap et al., 2000). In this study, a possible reason for the unexpected order of the age groups level of ecocentrism were thought to possibly be influenced by the education variable. This was based on the high percentage of highly educated individuals in the sample, and that it could be argued that older individuals could have a higher chance of possessing a higher level of education than younger individuals. In this way, it could be their level of education, rather than their age, that determined most of their level of ecocentrism. To test this assumption, an Independent Samples t-Test with age and the two education groups were conducted. The result turned out to be non-significant. The assumption therefore turned out to be false. What could be argued however, is that the amount of highly educated individuals in the sample made the categories of low and high levels of education unnatural. In this way, the category being classified as having a low level of education, had a fairly high level of education if seen in relation to society in general. This show that there could be other aspects that influence the unexpected results of the relationship between the individuals age and level of ecocentrism. What it also shows however, is that in this study, the older tourists with a higher level of education, also have a higher level of ecocentrism. When this is seen in relation to the discussion about the connection between factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism) and 4 (Experience-induced interest in own environmental impact) above, their higher level of ecocentrism could arguably influence whether they show awareness of their own part of the tourism pressure as one individual out of all the tourists. In this way, it could be argued that it influences their understanding of their own environmental impact on the PAs too.

The regression analysis also showed how factor 4 (experience-induced interest in own environmental impact) and factor 3 (perception of the quality of the protected areas) were mutually predicting some of the variance in each other's factors. Because factor 3 (perception of the quality of the protected areas) also is a perception of the experience, it could be argued that the connection between factor 3 (perception of the quality of the protected areas) and 4 (experience-induced interest in own environmental impact) could be similar to the connection between factor 1 (perception of tourisms' pressure on the protected areas) and 2 (perception of needed spatial limitation of tourism), and factor 4 (experience-induced interest in own environmental impact) that has been discussed above. In this way, the perception of the

quality of the protected areas could also influence the tourists' understanding of their own environmental impact on the PAs as well. Because of this connection, it is interesting to see what it is that could affect how the tourists perceive the quality of the protected areas in factor 3 (perception of the quality of the protected areas).

Factor 3 (perception of the quality of the protected areas) consists of questions that to a large extent focus on the tourists' perception of whether their experience of wildlife and natural environment met their expectations, and about the quality of the management of the PAs. Chon (1990) explains how the satisfaction or dissatisfaction with the experience is determined by a comparison between the accumulated image of and the actual experience at the destination. This is interesting when seen in relation to how directed information and advertisement, presented as supply factors by Stabler (1988) and induced information by Gunn (1988), is part of influencing the destination image the tourists possess. It shows that the information the tourists receive and base their expectations from before they get to the PAs, also could be influencing how the tour companies decides to guide their experiences. In relation to the motivation for travelling to the PAs, this study, together with both Kaltenborn et al. (2011) and Okello and Yerian (2009), found wildlife and the natural environment to be the most important motivating factors for the trip. The tour companies therefore have an incentive to create the best experiences possible for the tourists regarding wildlife and the natural environment. In this way, the authenticity of these experiences can be seen as linked to the accumulated image.

How the tour companies influence the tourists experiences introduces the concept of 'staged authenticity', a concept which originated with the different levels of authenticity that was presented by MacCannell (1973) in the theoretical framework. Pearce and Moscardo (1986) argue how both the perception and preference for authenticity is important for the tourist's satisfaction with the experience. In an example however, they show how a staged experience can be fully satisfactory if the preference for authenticity is low. MacCannell (1973) argued how knowledge was important for the understanding of the different levels of authenticity in what has later been named 'objective authenticity'. This can be linked to factor 5 (Experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas) that was found in this study. This is based on the fact that this factor contains questions about the tourist's perceived knowledge about both their own impact in the PAs, but also about the ecologogical situation. By potentially having a

higher level of knowledge about the ecological situation in the PAs, the individual can be expected to have a perception of the authenticity of the experience to be closer to "reality". The results in this study also showed that the number of days the tourists had spent in the PAs, created significant differences between how the tourists scored for factor 5 (Experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas). The results showed that the tourists that had spent a longer time in the PAs also believed their perception of knowledge about own impact and ecological situation in the PAs to be higher. In that way, it is possible to argue that they also could have a better foundation to determine the degree of authenticity in their experience. In this way, it might also create differences in the way the tourists perceive the quality of the protected areas.

If the discussion is seen from the theory of nature views, Lau (2010) presents how western tourists tend to see natural scenery as "wild nature". This is because their basis for comparison is not less "natural" areas (simulations), but rather man-made urban environments. This show how nature views also becomes important for the perception of authenticity. In relation to factor 5 (Experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas), there were also found significant differences between the groups in relation to level of ecocentrism. The result was a bit surprising however, because it showed that tourists with lower levels of ecocentrism had a perception of their own level of knowledge about their environmental impact and the ecological situation in the PAs that was higher than the tourists with higher levels of ecocentrism. No immediate explanation can be found that could explain this relationship. One suggestion however is simply that having more knowledge, makes the individual more aware of all the things they do not know. Another speculation is also that the tourists with lower levels of ecocentrism could be more easily influenced by the knowledge they receive during their trip from the guides and drivers of the tour companies, and in that way, perceive their level of knowledge to be high.

In relation to knowledge and the argument about satisfaction with staged experiences as presented by Pearce and Moscardo (1986) above, Cohen (1988) also argue that tourists usually hold a different view of authenticity than intellectuals and experts. In this way, the experience may be relative, contextually determined and potentially constructed. The authenticity however, depends on beliefs, point of view, stereotypical images and

expectations, rather than objective measurable criteria. This is interesting because about 90% reported that they had an authentic experience and that it was important to them in this study. This could also back the argument where Cohen (1988) also exemplifies this by pointing out how mass tourism succeeds, not by being a big deception, but exactly because, tourists often hold a different view of authenticity than intellectuals and experts.

This concept of staged authenticity can be argued to relate to the presented 'constructive authenticity'. Here, Cohen (1979) presents authenticity as a social construction between individuals. In this way, it shows how the tour companies can use their strategies to present a certain level of authenticity through their tour guides and drivers, and in that way, create a certain experience that most tourists are satisfied with. This show how the tourist's knowledge, or perceived level of knowledge as represented by factor 5, and their perception of destination image and authenticity could influence the tour companies' strategies, and in that way, the tourist experiences. As argued above, the connection between factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism) and 4 (experience-induced interest in own environmental impact), but also factor 3 (perception of the quality of the protected areas) and 4 (experience-induced interest in own environmental impact), show how this influence on the tourists experiences also could influence the tourists' understanding of their own environmental impact on the PAs.

6.2 Potential implications for the future management of the protected areas

Related to the discussion above, the theoretical framework will now be used to look at implications for future management of the PAs. This will be done in relation to the connection between the tourists' perception of their experience, and their understanding of their own environmental impact on the PAs.

It is important to acknowledge that the tourists are answering the questionnaire after their experiences. This introduces the idea of how the time lag between the experience and answering the questionnaire could be a factor that affect their answers.
In relation to the connection between factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism) and 4 (Experience-

induced interest in own environmental impact), and factor 3 (perception of the quality of the protected areas) and 4 (experience-induced interest in own environmental impact), one of these influencing aspects could be the 'peak-and-end' theory presented by Fredrickson (2000). As presented in the theoretical framework, the peak experience is the most affective (influencing) moment of the experience. In relation to the motivation for travelling to the PAs, this study, together with both Kaltenborn et al. (2011) and Okello and Yerian (2009), found wildlife and the natural environment to be the most important motivating factors for the trip. Because the results in this and past studies show that the natural environment and wildlife are the most important motivations of the trip, one extraordinary good experience that fulfils the criterion and expectations could be understood as an important moment. According to the 'peak-and-end' theory, this moment of the experience will be more likely to remain in the individual's memory. A particularly good moment could then set itself apart and overshadow less attractive, and potentially even more frequently experienced moments throughout the trip. In the end, this could lead to an unnaturally positive evaluation of their perception of their experience of the natural environment and wildlife in the PAs. Linked to the previous discussion, this theory also has the potential to lead to an unnaturally positive evaluation of the amount of tourists, and in that way, their perception of tourisms' pressure on the protected areas for factor 1 (perception of tourisms' pressure on the protected areas).

As presented by Kaltenborn et al. (2011), and backed by Hillery et al. (2001) in the theoretical framework, tourists have a tendency not to be aware of their long-term environmental impact. They argued how this could be caused by the limited amount of time they spend in the areas, but also that the tourists are kept away from potentially negative experiences. In this regard, both Kaltenborn et al. (2011) and Okello and Yerian (2009) argued how important the tour company are for deciding the experiences for the tourists. Based on the capitalistic nature of these tour companies, having satisfied paying customers is important. Strategies that lead to the best tourism experiences are therefore crucial and could explain a strategy of keeping the tourists away from potentially "bad" experiences. This study also found that 96.2% of the tourists travelled with a tour company. The question becomes whether these decisions about what the tourists should experience or not also contributes to the tourists, believed to be, limited awareness of their long-term environmental impact. If one continues the discussion above, the 'peak-and-end' effect on tourists' memories could also affect their perceptions of their own environmental impact. This is based on the assumption that a higher concentration of "good" experiences, showing less signs of physical impacts, would strengthen the tourists'

tendency to not be aware of the impacts of tourism. This joins the series of arguments that show how there is a connection between factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism) and 4 (Experience-induced interest in own environmental impact), and factor 3 (perception of the quality of the protected areas) and 4 (experience-induced interest in own environmental impact), and how the tourists' understand their own environmental impact on the PAs.

If the tourists are kept away from "bad" experiences, and it is affecting the connection between factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism), and 4 (Experience-induced interest in own environmental impact), and factor 3 (perception of the quality of the protected areas) environmental impact) and 4 (Experience-induced interest in own environmental impact), in the way argued above, one should also discuss the potential consequences of such strategies for the future of both tourism and conservation in the PAs. This is based on the fact that it is up to the managers of the PAs to decide how the PAs should be managed, and up to the managers and the tour companies together, how the experiences in these PAs should be carried out. Based on the increasing numbers of tourist and expanding tourism development that has been seen in the protected areas over time, the managers of the PAs should think about what they want the future of these PAs to be. From the theoretical framework, R. W. Butler (1996) argues how management frameworks such as Limits of Acceptable Change (LAC) is especially challenging for destinations that depend on natural characteristics for getting visitors. This argument is based on the assumption that gradual changes in the quality of the natural environment could lead to gradual changes in management objectives. In the end, this could potentially lead to a change in the profile of visitors that are traveling to the destination. This could then cause incremental changes towards a tourist profile that is more tolerant to impacts.

Seen together with the results in this study and the discussion above, this change in tourist profile could be understood as a change towards tourists that have lower levels of ecocentrism. Because of the argued effect this can have on the connection between factor factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism) and 4 (experience-induced interest in own environmental impact), and the connection between factor 3 (perception of the quality of the protected areas) and 4 (experience-induced interest in own environmental impact), and its relationship to how

that influence their understanding of their own environmental impact in the PAs, these management decisions will be important. This is because such a change as argued above have the potential to lead to future tourists that have a perception of the need for spatial limitation of tourism to be lower, and the pressure from tourism and pressure/impact from themselves to be lower. As presented above, these tourists are also expected to have a higher tolerance for tourism development and a lower preference for the natural environment. Together, these changes could alter the destination image of the PAs which would only strengthen the then commenced trend. In the long run, the future of these PAs as nature conservation areas and tourist destinations could be changed forever. This future however, will to a great extent depend on how, and with what knowledge and purpose, the management strategies are developed.

In the discussion above, it was also argued how the tour companies had a large role in determining the quality of the experience through the connection between factor 3 (perception of the quality of the protected areas) and 4 (experience-induced interest in own environmental impact). The influence of factor 5 (experience-induced perception of one's level of knowledge about own environmental impact and ecological situation in the protected areas) and the theory about destination image, nature views and authenticity on this connection were also discussed. In this paragraph, the potential future management challenges this could lead to will be discussed. The management of the PAs, as decided by the managers, is believed to set important guidelines for how the tourism should be conducted in the PAs. This influence the extent to how the tour companies can affect the tourists' perception of their experiences. The knowledge and background information of the status of the PAs will probably be important for deciding upon these management strategies. What the management strategies is for the two PAs in this study is not mapped out. For another study to do this in the future, to continue the discussion with more tangible information is therefore believed to be beneficial. This discussion however, will continue using the tourists' satisfaction with their experience in the PAs a measure for the status of the PAs. This is based on it being a measure that can be used by managers to evaluate the situation in the PAs. The discussion below however, will be about how this can cause management challenges for the future.

If tourist satisfaction rates are used as a measure of the general situation and quality of the natural environment, the way managers and tour companies is influencing their experiences, as seen in the discussion above, could lead to a skewed reality being the foundation for new

management strategies. As seen in the discussion above, the connection between factor 1 (perception of tourisms' pressure on the protected areas), 2 (perception of needed spatial limitation of tourism) and 4 (experience-induced interest in own environmental impact), and the connection between factor 3 (perception of the quality of the protected areas) and 4 (experience-induced interest in own environmental impact) could be argued to have an effect on the tourist's understanding of their experience, which could influence the tourist's understanding of their own environmental impact on the PAs. This argument is based on the assumption that managers and tour companies can lead experiences to areas that are less negatively affected, for the creation of a satisfactory experiences. Over time, this could potentially lead to an 'extinction debt'. In the theoretical framework, Kareiva and Marvier (2011) show how this is explained as a delayed loss of biodiversity as a reaction to a degradation of an environment. In the context of these PAs, where tourism and conservation coexists, it could create an "extinction debt" in relation to wildlife and the natural environment, but also in relation to tourist's perception of the quality of their experiences in the PAs. One aspect that makes this scenario especially critical in the context of nature-based tourism, is exactly this connection to nature. While people are protesting against overtourism in the cities of southern Europe, the animals and plants in protected areas lack a voice of their own. The mismatch between perception of experience and actual reality is especially challenging if managers use the influenced tourists' perceptions as a foundation for future management. This does not only have the potential to impact the conservation side of the management, but also the future of tourism in these PAs. In this way, they could potentially be part of increasing this delay in feedback that can create a situation where sustainable management of conservation and tourism in these PAs could be hard to regain in the future.

7 Conclusion and recommendations for future studies

This chapter contains the conclusion of the study and provide recommendations for future studies.

7.1 Conclusion

The purpose of this study was to investigate how the tourism experience affect the tourists' understanding of their own environmental impact related to nature-based tourism. A discussion about the potential implications for management of tourism and conservation in the PAs, based on the findings, was also believed to be beneficial to contextualize the results. In an attempt to answer the research question, two research objectives were created.

Research objective 1 set out to explore which dimensions of the experience that could influence the tourists' understanding of their own environmental impact on the protected areas. This resulted in five dimensions (factors), which were believed to be parts of the experience that could influence the tourists understanding of their own environmental impact on the PAs. The analyses that was done showed how the connection between these different dimensions (factors) were interlinked in explaining the tourists' perception of their experience in the PAs. This made it more beneficial to discuss their potential influence on the tourists understanding of their own environmental impact on the PAs together, rather than individually. Through the use of the theoretical framework, it was possible to argue how the connections between the dimensions (factors) 1, 2, and 4, and 3 and 4, explain how the tourists understand the pressure from tourism on the PAs. The discussion also showed how one could argue that the connection between the dimensions (factors) above gets influenced by factor 5 and the tourists' environmental beliefs (level of ecocentrism). Together, this was then argued to influence how they understand their own pressure/impact as a tourist. This indicated that the tourists understanding of their own environmental impact on the PAs comes down to how the tourists understand themselves as part of the entire tourist body.

Research objective 2 set out to explore how variation in tourists' socio-demographic characteristics, familiarity with place and environmental beliefs create differences between the tourists' perception of the dimensions (factors) that was found by research question 1. The tourists' environmental beliefs (measured as their level of ecocentrism) turned out to be the most important influencing aspect in creating differences between how the tourists perceived

the different dimensions (factors). The theoretical framework showed how the concept of ecocentrism showed how these differences in perceptions to a large extent were about whether the tourists were inclined to favor management that supported nature's needs or the tourists' wants.

Together these findings from the two research objectives indicate that the tourism experience is important for how the tourists understand their own environmental impact on the PAs. In a nature-based tourism context, this also seems to have potential implications for the future management of these PAs. This is based on the argument that the managers and tour companies to a large extent is responsible for how the tourists perceive their experience. Because this has been shown to affect how the tourists understand their own environmental impact on the PAs, and that it could lead to skewed feedback about the quality of the PAs, it is possible that this connection can create a delayed feedback of potential management challenges. This could happen if the tourists' satisfaction with the experience is used as a measure of the situation of the PAs, and in that way, used for future management strategies. If not cautious, the managers and tour companies could in this way potentially be part of increasing this delay in feedback that can create a situation where sustainable management of both conservation and tourism in these PAs could be hard to regain in the future.

Hopefully, the findings in this study can be used to provide thought out management strategies for the future management of conservation and the tourism in the PAs. Due to the relatively exploratory nature of the study, and challenging operationalization, the argued conclusions should be seen more as a starting point for the understanding of this topic. This is also why further studies on the topic should be done, repeating this one, but also viewed from different angels, including other questions and variables. Below is a presentation of recommendations for further studies.

7.2 Recommendations for future studies

As seen in this study, tourists can be organized in groups with similar values and attitudes etc. These groups however, are made up of the same individuals that make the difference between groups noticeable. This shows that tourists always will be individuals with their own special characteristic, even when grouped with similar individuals for statistical purposes. This show

how a qualitative approach potentially could contribute to a deeper understanding of the question addressed in this study.

This study has used a combination of validated questions and original questions to answer the research question. A combination of different questions and influence from other fields of research however, could potentially discover other complimentary or different dimensions that could add more information. A future investigation of the concept with other questions and theories is therefore recommended.

The general management strategies of the PAs, and the tour companies that operate within them, has both been shown to be important for the tourists' perception of their experiences. Because of this apparent importance, further studies that investigate what these strategies is, both in relation to the managers of the PAs, and the tour companies, is recommended for achieving a deeper understanding ofhow the experience is influencing the tourists' perception of their environmental impact on the PAs.

In this study, the focus has primarily been on the perceptual capacity in nature-based tourism. Hillery et al. (2001) however, argues for the importance of looking at environmental and perceptual capacity for a destination at the same time. The argument is that it could make it easier to assess which environmental impacts tourists are, or are not aware of. To include these two topics together in future studies is therefore believed to be beneficial.

(Cohen & Cohen, 2012) addresses the fact that there is a rapid increase in non-Western tourism, especially from Asia. They argue that this potentially could cause the tourism theories existing today to be less suited to the actual future of tourism. This is based on the fact that today's theories to a large degree have been developed in the context of western tourism. This could not only cause limited applicability but also question the universal significance of these theories. This study has a very low representation of Asian tourists, even though they were one of the largest tourist groups observed at the destination. Measures to be able to include these tourists in later studies should therefore be taken, both in relation to representativeness and the development of universal theories for the future.

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Appendix A. Questionnaire

NTNU
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AfricanBioServices

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Master's student at Norwegian University of Science and Technology (NTNU)

Authenticity of Protected Areas and The Impact of Tourism

Thank you for agreeing to take part in this survey measuring experienced authenticity and perceived impact in protected areas. Your opinions are important for future management.
Participation in the survey is voluntary and all answers you provide will be kept in the strictest confidentiality. It takes about 8-9 minutes to complete the questionnaire.

1. **Gender**
   □Male □Female

2. **Age (18+)**

3. **Nationality**

4. **Where are you answering this questionnaire?** *(Check one box)*
   □Ngorongoro Conservation Area
   □Serengeti National Park

5. **Which protected area(s) have you visited on your trip?** *(Check one box)*
   □Ngorongoro Conservation Area
   □Serengeti National Park
   □Both

Reason for visiting the protected area *(Check one box per question)*

6. **Wildlife in general.**
   □Very unimportant □Unimportant □Neither/Nor □Important □Very important
7. **Large carnivores.**
   □Very unimportant □Unimportant □Neither/Nor □Important □Very important
8. **Large mammals.**
   □Very unimportant □Unimportant □Neither/Nor □Important □Very important
9. **Birds.**
   □Very unimportant □Unimportant □Neither/Nor □Important □Very important
10. **The landscape.**
    □Very unimportant □Unimportant □Neither/Nor □Important □Very important

11. **African wilderness.**
    □Very unimportant □Unimportant □Neither/Nor □Important □Very important
12. **Local culture.**
    □Very unimportant □Unimportant □Neither/Nor □Important □Very important
13. **The safari experience.**
    □Very unimportant □Unimportant □Neither/Nor □Important □Very important
14. **Do something nice with friends or family.**
    □Very unimportant □Unimportant □Neither/Nor □Important □Very important
15. **See new places that are different from anywhere else I have been.**
    □Very unimportant □Unimportant □Neither/Nor □Important □Very important
16. **Learn about the ecosystem in the park.**
    □Very unimportant □Unimportant □Neither/Nor □Important □Very important

Your experience in the protected area *(Check one box per question*

17. **The protected area is unique, different from any other place in the world.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
18. **The protected area is one of the best places in the world to see wildlife.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
19. **The protected area is managed very well.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
20. **There are too many tourists in the protected area.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
21. **The facilities for tourists should be improved (e.g. roads, lunch spots, view points).**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
22. **Good wildlife sites are overcrowded with tourists.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
23. **There are too many vehicles in the protected area.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
24. **The wildlife experience met my expectations.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
25. **The accommodations are the right size and have an adequate level of standard.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
26. **Tourism should be restricted in parts of the protected area to protect the wildlife.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
27. **There are not too many tourists in the protected area.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
28. **Tourism should be restricted in parts of the protected area to protect the landscape.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
29. **There are too many roads in the protected area.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
30. **The wildlife experience did not meet my expectations.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
31. **The quality of the natural environment met my expectations.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know

Environmental views *(Check one box per question)*

32. **The balance in nature is delicate and can easily be disturbed.**
    □Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree

33. **Humans have the right to modify the natural environment so that it satisfies our needs.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree
34. **Humans abuse nature to a degree that is very serious.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree
35. **All the talk about the ecological crisis is heavily exaggerated.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree
36. **Animals and plants have the same rights as humans to live on this earth.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree
37. **The balance in nature is stable enough to tackle the pressure from human society.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree
38. **If we continue on the same course as now we will soon experience an ecological catastrophe.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree
39. **The innovative nature of humans will ensure sustainable life conditions for humans in the future.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree

Conservation questions *(Check one box per question)*

40. **I have thought about my impact in the protected area.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
41. **I am interested in learning more about my impact in the protected area.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
42. **I feel informed about my impact in the protected area.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
43. **I feel informed about the ecological conditions in the protected area.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
44. **I am willing to limit my time in the protected area to preserve the ecosystem.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
45. **I am willing to limit the areas I can visit in the protected area to preserve the ecosystem.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
46. **The experience I had in the protected area felt authentic.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know
47. **An authentic experience in nature tourism is important for me.**
□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know

48. **Reason for visiting the protected area(s)** *(Check multiple boxes)*
□Leisure □Educational □Work-related □Volunteer □Other

49. **Educational background** *(Check one box))*
□University (Bachelor's) □Specialized training □University (Master's) □High school □PhD
□College □Elementary school □Secondary school □Other

50. **Where does your knowledge about the protected area come from?** *(Check multiple boxes)*
□TV □Books □School □Tour operator □Guide(s) □Driver(s) □Word of mouth
□Internet □Other

51. **How many times (including this visit) have you visited this/these protected area(s)**?
(Write a number in the text field)

52. **How many days have you been in this/these protected area(s)?** *(Write a number in the text field))*

53. **Accommodation during your trip** *(Check multiple boxes)*

□Luxury lodges □Middle income lodge/campsite □Public campsite □Luxury tented camp □Other

54. **How many times have you travelled to other protected areas in Africa for nature tourism during the last 10 years?** *(Write a number in the text field*

55. *(If you have travelled to other protected areas in Africa, answer this question)*

Traveling to other protected areas in Africa has influenced my expectations for this trip. (Check one box)

□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know

56. **Have you travelled to protected areas on other continents for nature tourism during the last 10 years?** *(Check multiple boxes)*

□No □North America □South America □Europe □Asia □Oceania □Antarctica

57. *(If you have travelled to other protected areas on other continents, answer this question)*

Traveling to protected areas on other continents has influenced my expectations for this trip. (Check one box)

□Strongly disagree □Disagree □Neither/Nor □Agree □Strongly agree □Don't know

58. **Are you traveling with a tour operator or are you self-guided?** *(Check one box))*

□Self-guided

□Tour operator

(name of tour operator)

59. **Comments**

Appendix B: Analyses

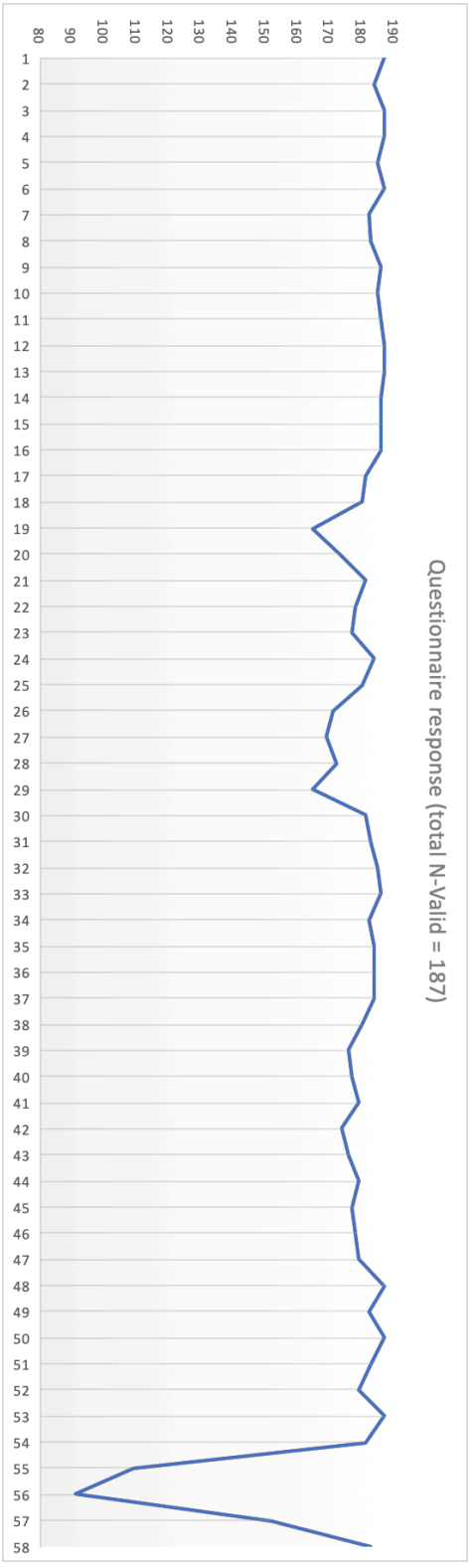


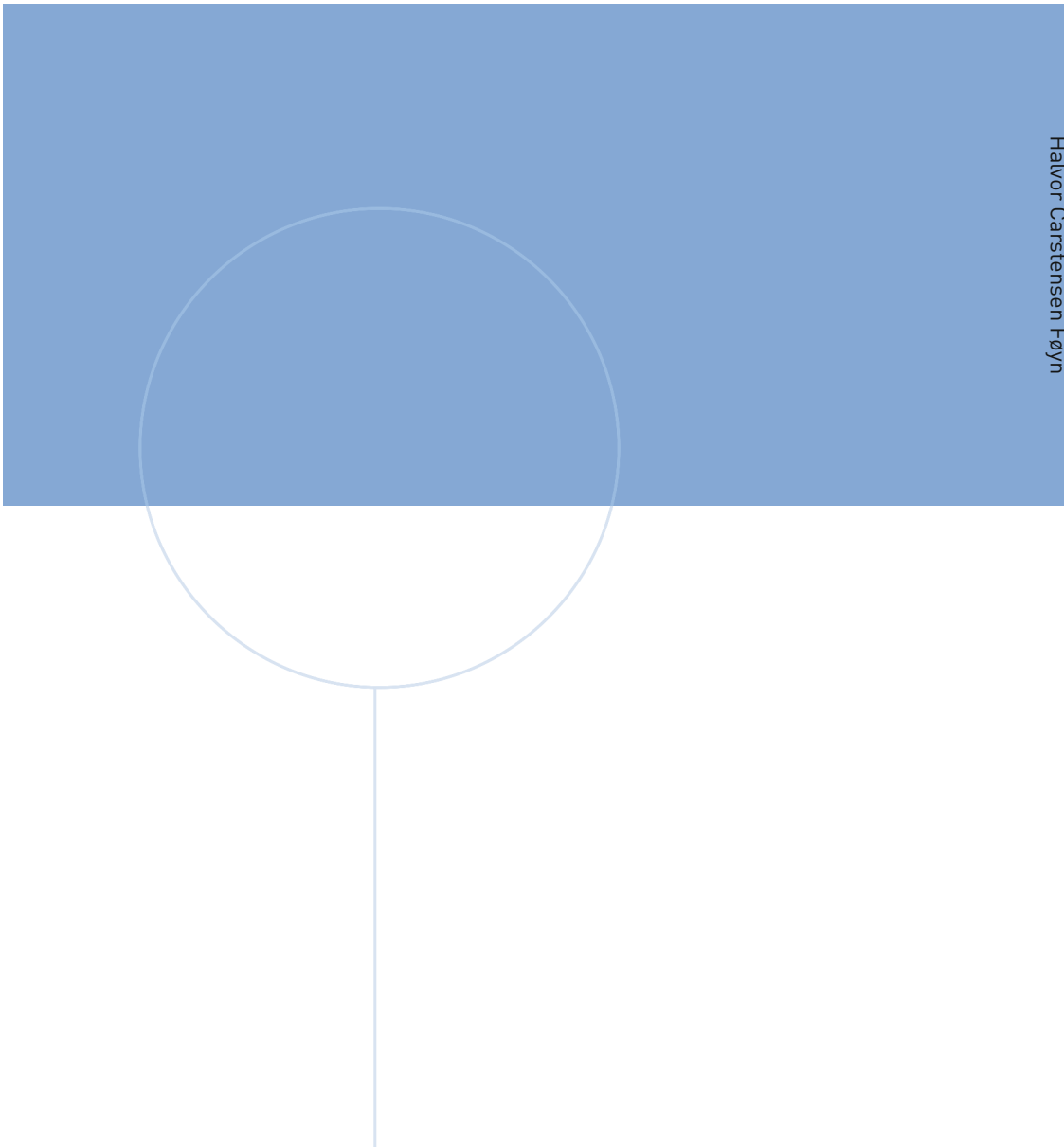
Figure 11. Questionnaire response.

Table 10. Correlations for regression.

Correlations													
		Factor1	Factor2	Factor3	Factor4	Factor5	Gender (dummy)	Age	Education	Environmental beliefs	Times visited the PAs	Days spent in the PAs
Factor1	Pearson Correlation	1	**,357****	-0,068	0,054	0,074	-0,055	-0,009	-0,052	0,001	0,101	**,178***
	Sig. (2-tailed)		0	0,42	0,509	0,36	0,485	0,914	0,534	0,99	0,202	0,025
	N	165	136	143	154	155	165	163	146	153	162	158
Factor2	Pearson Correlation	**,357****	1	0,16	**,401****	-0,012	-0,093	0,072	-0,005	**,289****	0,032	-0,02
	Sig. (2-tailed)	0		0,071	0	0,882	0,263	0,387	0,95	0,001	0,703	0,81
	N	136	147	128	144	144	147	145	132	139	147	143
Factor3	Pearson Correlation	-0,068	0,16	1	**,285****	-0,004	-0,005	0,008	-0,071	0,025	0,007	0,024
	Sig. (2-tailed)	0,42	0,071		0	0,965	0,954	0,919	0,402	0,765	0,927	0,775
	N	143	128	155	148	148	155	152	141	146	154	150
Factor4	Pearson Correlation	0,054	**,401****	**,285****	1	-0,111	-0,093	0,053	**,157***	**,310****	-0,078	0,028
	Sig. (2-tailed)	0,509	0	0		0,153	0,222	0,491	0,049	0	0,31	0,717
	N	154	144	148	173	167	173	171	157	161	173	169
Factor5	Pearson Correlation	0,074	-0,012	-0,004	-0,111	1	0,148	**,189***	-0,148	**-,299****	**,150***	**,232****
	Sig. (2-tailed)	0,36	0,882	0,965	0,153		0,053	0,013	0,065	0	0,049	0,002
	N	155	144	148	167	173	173	171	156	162	173	169
Gender (dummy)	Pearson Correlation	-0,055	-0,093	-0,005	-0,093	0,148	1	-0,003	0,014	-0,086	-0,065	-0,017
	Sig. (2-tailed)	0,485	0,263	0,954	0,222	0,053		0,968	0,855	0,265	0,384	0,819
	N	165	147	155	173	173	187	184	166	170	183	179
Age	Pearson Correlation	-0,009	0,072	0,008	0,053	**,189***	-0,003	1	0,01	**,153***	-0,005	**,267****
	Sig. (2-tailed)	0,914	0,387	0,919	0,491	0,013	0,968		0,896	0,048	0,947	0
	N	163	145	152	171	171	184	184	163	167	180	176
Education	Pearson Correlation	-0,052	-0,005	-0,071	**,157***	-0,148	0,014	0,01	1	0,089	-0,058	0,031
	Sig. (2-tailed)	0,534	0,95	0,402	0,049	0,065	0,855	0,896		0,275	0,457	0,697
	N	146	132	141	157	156	166	163	166	154	166	162
Environmental beliefs	Pearson Correlation	0,001	**,289****	0,025	**,310****	**-,299****	-0,086	**,153***	0,089	1	-0,115	-0,015
	Sig. (2-tailed)	0,99	0,001	0,765	0	0	0,265	0,048	0,275		0,135	0,844
	N	153	139	146	161	162	170	167	154	170	170	166
Times visited the PAs	Pearson Correlation	0,101	0,032	0,007	-0,078	**,150***	-0,065	-0,005	-0,058	-0,115	1	**,282****
	Sig. (2-tailed)	0,202	0,703	0,927	0,31	0,049	0,384	0,947	0,457	0,135		0
	N	162	147	154	173	173	183	180	166	170	183	179
Days spent in the PAs	Pearson Correlation	**,178***	-0,02	0,024	0,028	**,232****	-0,017	**,267****	0,031	-0,015	**,282****	1
	Sig. (2-tailed)	0,025	0,81	0,775	0,717	0,002	0,819	0	0,697	0,844	0	
	N	158	143	150	169	169	179	176	162	166	179	179

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

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



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