



# Nature-Based Educational Experiences

NATURE CONSERVATION VALUES AND ACTIONS: THE CASE OF LAUWERSOOG

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## **Abstract**

Nature-based educational experiences might improve nature conservation values and actions among the visitors. Recent research shows that experiencing an area might increase connectedness to nature, while other research suggest that it has only limited effect on nature conservation values. This research aims to examine whether this is the case by using a seal watching excursion, located in the Dutch Wadden Sea village Lauwersoog, as a case study. It explores to what extent nature-based educational experiences foster pro-conservation values and actions among tourists. A survey was used to measure nature conservation values and actions at the start of the excursion and at the end. By analysing the results with a Paired Sample T-Test it became clear that nature-based educational experiences do not foster pro-conservation values and do not stimulate pro-conservation actions in terms of money spent on nature conservation either. They do stimulate pro-conservation actions in terms of planned hours spent on nature conservation related activities. Tourists who are a member of a nature conservation organization turn out to attach higher values to nature conservation than tourists who are not. Socio-economic variables were analysed with the use of a Multiple Linear Regression. The results show that the younger the respondents are, the more money they are willing to pay on nature conservation after participating in the excursion. Follow-up opportunities might help to extend the environmental activities from the excursion into other settings. This research measures a temporal effect only, since the surveys are held directly before and after the excursion took place. Future research might gain deeper insights when it would repeat the survey after a few months.

# Table of contents

<b>Abstract</b> .....	1
<b>1. Introduction</b> .....	3
1.1 Background and research problem.....	3
1.2 Structure.....	4
<b>2. Theoretical framework</b> .....	4
2.1 Theoretical framework.....	4
2.2 Hypotheses.....	7
<b>3. Methodology</b> .....	7
3.1 Research method.....	7
3.2 Questionnaire survey research.....	8
3.3 Positionality.....	9
<b>4. Results</b> .....	9
4.1 Demographics.....	9
4.2 Educational character.....	11
4.3 Paired samples.....	11
4.4 Socio-economic variables.....	14
<b>5. Conclusion</b> .....	15
<b>6. References</b> .....	17
<b>7. Appendix</b> .....	20
7.1 Questionnaire – English version.....	20
7.2 Results Multiple Linear Regression.....	25

# 1. Introduction

## 1.1 Background

Because of globalization and its associated economic processes traditional sectors like agriculture are declining in importance and new functions are becoming more and more important to maintain the physical and social landscape (Buijs et al., 2006). The rural economy is increasingly driven by consumption-based demands instead of productive land use (Slee, 2005). To be able to reach a position of economic competitiveness in rural areas, new non-production-based land uses have entered the scene (Slee, 2005). Attention is being paid to local resources and new policy tools, such as place branding, to increase social and economic development (Blichfeldt & Halkier, 2014).

The fact that European landscapes are increasingly appreciated as leisure commodities can have far reaching consequences, as the values that people attribute to natural landscapes are changing substantially (Buijs et al., 2006). According to Buijs et al. (2006) this trend could change landscapes into market-oriented landscapes where the focus lies on superficial experiences and consumption in which the natural landscape functions merely as a décor. It might change the social perception of landscapes. From merely places of nature or food production to beautiful, recognisable and accessible landscapes that people look for in their free time (Buijs et al., 2006).

The transformation of the Wadden Sea Region is exemplary for the evolution from a production landscape to a consumption landscape as described above. It is predominantly a rural region and planning strategies in the past therefore mostly targeted two land uses, agricultural development and nature protection (Hartman & De Roo, 2013). According to Hartman & De Roo (2013) gradual developments have shown that the region has the potential for other activities in addition to protection and production as well. Activities related to leisure and tourism are good examples. Natural values have advanced the economic basis of the Wadden Sea Region by attracting more than 10 million touristic visitors per year (Kabat et al., 2012). It has become an important tourism destination (Alberts, 2015). Tourism can be used to increase the economic and social development of the region and therefore improve its position in comparison with other areas, but without appropriate planning and management actions, it can deeply affect the natural identity by causing severe degradation of natural ecosystems (Aretano et al., 2013). Therefore, new policy was implemented in order to protect the ecological values of the Wadden Sea Region. This policy was implemented by Denmark, Germany and the Netherlands, who have been working together on the protection and conservation of the region since 1978 (Kabat et al., 2012). The discourse of this policy changed in the 2000s from a defensive approach (purely the conservation of nature) to a more dynamic approach in which nature conservation goes hand-in-hand with sustainable economic development (Kabat et al., 2012). In 2009 the region attained the highest level of international recognition when it got listed by the UNESCO as a natural World Heritage Site (Kabat et al., 2012).

While tourism is often being discussed as negatively affecting the ecology of a region, nature can also benefit from the touristic sector (Heslinga, 2018). Tourism can contribute to nature conservation by, for example, creating public awareness and financial support (Heslinga, 2018). To create a more sustainable society in which the impact of human activities on ecosystems is being monitored, motivating pro-environmental behaviour is essential (Wheaton et al., 2016). Environmental education and experience might improve conservation values and actions among tourists by creating awareness and for example stimulate tourists to make donations (Tisdell & Wilson, 2005), but whether this actually occurs might be questioned. According to a research done by Kaltenborn & Williams (2002) on place attachment in

Femundsmarka National Park in Norway, experiencing this area had limited effect on the values tourists attached toward the environment. However, Wheaton et al. (2016) found an increase in connectedness to nature among the tourists who visited a nature-based experience.

This research will focus on the possible value that nature-based educational experiences might add to nature conservation. It aims to address the following main research question: *do nature-based educational experiences in Lauwersoog foster pro-conservation values and actions among tourists?*

This question raises three sub-questions:

1. *Do tourists go on nature-based educational experiences in Lauwersoog because of its educational character or just for the experience itself?*
2. *Do nature-based educational experiences in Lauwersoog inspire pro-conservation values among tourists?*
3. *Do nature-based educational experiences in Lauwersoog stimulate pro-conservation actions among tourists?*

The seaside village Lauwersoog poses an interesting case for this research, because it is an important ecological area and tourism destination at the same time (Sijtsma et al., 2015). It is situated in the northern part of the Netherlands and is part of the Wadden Sea Region.

## 1.2 Structure

The next chapter reviews the existing literature regarding the Wadden Sea Region and its relationship with nature-based tourism. It is followed by an explanation of the relevant concepts which are being clarified in a conceptual model. It represents the underpinning theories of nature-based tourism and shows the relationships between the concept of nature-based educational experiences and nature conservation values and actions. The methodology section explains the choice for an extensive research design and questionnaire survey research. In this section attention is being paid towards my positionality in this research as well. The result section presents an overview of the demographic data and the results from the Paired Samples T-Test and Multiple Linear Regression. The data will be discussed on the basis of the conceptual model and compared with other research about nature-based educational experiences. The result section is followed by the conclusion which briefly summarizes the main findings and situates them in the context of the broader theoretical framework. In the conclusion there will be a reflection on the strengths and weaknesses of this research as well.

## 2. Theoretical framework

### 2.1 Theoretical framework

According to Fang & Dakui (2014) the tourism industry is developing rapidly and has been forecast to become the largest industry in the 21<sup>st</sup> century, with coastal tourism accounting for more than half of the industry. A growing number of tourists is looking for inspirational, authentic and transformational experiences in nature (Newsome et al., 2013). This way of tourism is being referred to as nature-based tourism, in which nature-based tourism is “[l]eisure travel undertaken largely or solely for the purpose of enjoying natural attractions and engaging in a variety of outdoor activities. Bird watching, hiking, fishing, and beachcombing are all examples of nature-based tourism” (Travel Industry Dictionary, cited in Olafsdottir, p.213). According to Newsome et al. (2013) the number of nature-based tourists has grown from approximately 2% of all tourists in the late 1980’s to around 20% today. So while the touristic sector is growing, the amount of nature-based tourism is growing even faster. According to Newsome

et al. (2013) there has been a growing interest in the conservation of our environment at the same time. Concerns about our environment have shifted from the concerns of a few to the wider public arena. With the unparalleled growth of tourism and environmental concerns, interaction between the two was inescapable.

The Wadden Sea Region is a place where this interaction is clearly visible. It is an important tourism destination and a significant ecological area at the same time (Sijtsma et al., 2015). The region meets three of the four UNESCO's criteria for natural sites. It is an example of a 'major stage of earth's history', it has 'on-going ecological and biological processes' and it is a place of 'in-situ conservation of biological diversity' (Alberts, 2015). Over 10 million tourists visit the region every year; tourism is therefore a major source of income. As a consequence, a variety of different tours are available, like observing seals, guided tours over mudflats to explore flora and fauna and exclusive tours for birders to see the many migratory birds (Alberts, 2015).

Tourism is the main topic in the controversial debate about the commercial use of nature in protected natural areas, like the Wadden Sea Region, versus its conservation. It reflects the complexity of the tourism-nature relationship (Liburd & Becken, 2017). According to Newsome et al. (2013) there are two different streams of thought about the tourism-nature relationship. According to the first, tourism has the potential to harm the natural environment and is therefore in conflict with nature, while the second stream believes that tourism and nature have the potential to work together in a symbiotic way. According to Fang & Dakui (2014), tourism development in vulnerable environmental coastal areas is always in conflict with its fragile environment. They define different positive and negative effects of coastal tourism (table 1).

Table 1: The environmental influences of coastal tourism (Fang & Dakui, 2014, p.34)

<b>Positive effects</b>	<b>Negative effects</b>
Preserve local plants and animals	Increase loss, pollution emissions and noise pollution
Protect the natural landscape	Cause traffic congestion and air pollution
Protect the environment	Hazard of rare animals and plants
	Change the land use pattern
	Lead to ecological degradation and disturbance

Leisure tourism activities could change and even damage coastal ecological systems (Fang & Dakui, 2014). While Heslinga (2018) describes that it can also contribute to advance the understanding of natural heritage and increase public support for nature conservation and the acquired funding. These different views can be explained because both use different research focuses, since Fang & Dakui (2014) focus on the negative and positive aspects of the tourism-nature relationship, while Heslinga (2018) is looking for a possible synergetic relationship in which tourism and nature complement each other. According to Heslinga (2018) negative and positive effects of the tourism-nature relationship, as shown in table 1, are caused by trade-offs between nature conservation and socio-economic development. Balance can only be achieved if socio-economic development and nature conservation do not conflict but rather strengthen each other (Heslinga, 2018). Such a balance would be helpful when building social-ecological resilience in the region (Heslinga, 2018). The synergetic tourism-nature relationship can be described by using social-ecological systems as a framework. Social-ecological systems are coupled systems in which social and ecological parts are not seen as separate entities, but are integrated into one dynamic system with reciprocal feedback loops and interdependencies (Heslinga, 2018).

Centralized bureaucracies often experience trouble with responding to rapid changes in social-ecological systems, and its additional uncertainties (Armitage et al., 2009). They can cope with these changes through different governance approaches. A distinction can be made between yield oriented command-and-control governance and novel governance. The first one is being characterised by disciplinary isolation and reductionism while novel governance emphasizes group decision making in which diverse views are being included and shared learning is a central theme (Armitage et al., 2009). Merging both adaptive and co-management results in a new approach which is distinct from either, the adaptive co-management approach. It aims to address society-environmental problems by linking education (experimental and experiential) and collaboration (vertical and horizontal) together to facilitate effective governance in which our understanding of complex social-ecological systems is being improved as well as our ability to respond to these complex systems (Armitage et al., 2009). Self-governance, an increased involvement of citizens in the management process, might be an effective governance approach to deal with social-ecological systems as well. Recent research in the Netherlands shows that the majority of practices in self-governance green spaces focus on direct benefits to nature conservation through political actions and/or through hands-on activities (Mattijssen et al., 2018).

Environmental education and experiences have an important role in strengthening the tourism-nature relationship, because they can lead to changes in attitudes towards management and use of landscapes (Ryan, 2005). They have a significant role in increasing conservation values and actions among people (Adams et al., in Tisdell & Wilson, 2005).

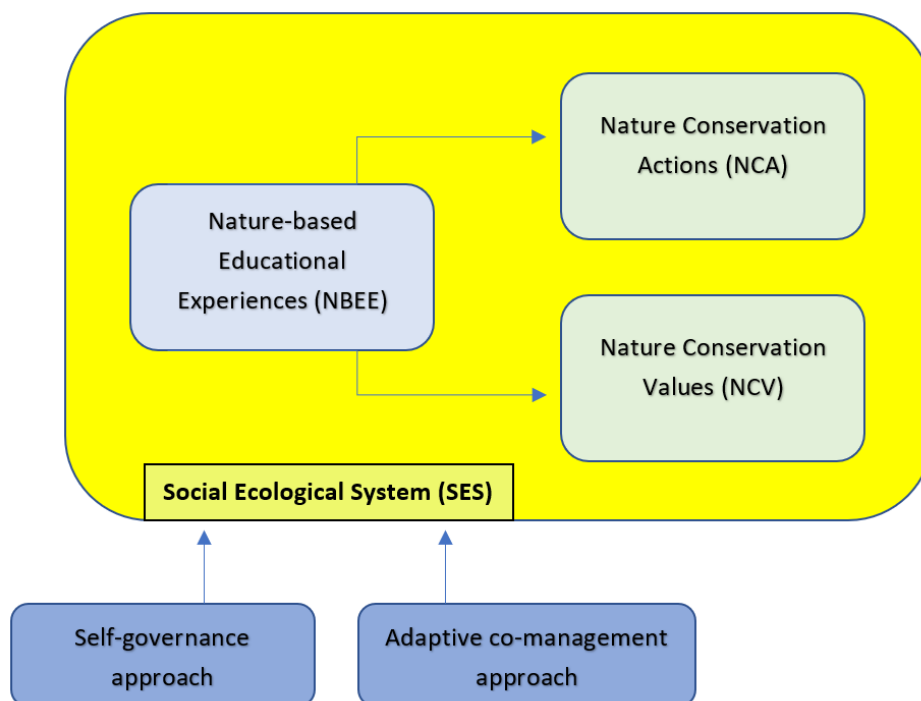


Figure 1: Conceptual model of the relationship between NBEE and NCV and NCA and their place in the SES

The concepts which are used in this research are 'Nature-based educational experiences' (NBEE), 'Nature conservation actions' (NCA) and 'Nature conservation values' (NCV), all part of a 'Social Ecological System' (SES). NBEE may influence NCV and NCA. NCA and NCV are therefore dependent variables and have a causal relationship with NBEE, which is the independent variable in this research. The relationship between NBEE and NCV and NCA can be visualised in a conceptual model, shown in

figure 1. It is part of a SES which can be strengthened with the use of a self-governance or adaptive co-management approach.

NBEE is an example of a way in which nature-based tourism manifest itself. In NBEE outdoor activities can be accompanied by environmental education, which is “the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture, and his biophysical surroundings. It also entails practice in decision-making and self-formulation of a code of behaviour about issues concerning environmental quality.” (IUCN, cited in Palmer, 2002, p.7). The definition of NBEE can therefore be formulated as ‘nature-based experiences in which values and concepts are being recognized in order to develop skills and attitudes towards the understanding and appreciation of the relationship between man and their biophysical environment’.

NCA and NCV aim to persevere the integrity and functioning of the ecosystems (Enemark, 2005). In which ecosystems entails components like livings organisms (biotic components), soil and landforms and other non-living features (abiotic components), such as wind rain and water flow (Newsome et al., 2013).

## 2.2 Hypotheses

The null hypotheses that will be tested in this research are as followed:

1.  $H_0$  = tourists do not go on the NBEE for its educational character
2.  $H_0$  = NBEE's do not foster pro-conservation values
3.  $H_0$  = NBEE's do not stimulate pro-conservation actions

The alternative hypotheses, the expected outcomes that arise from the theoretical framework above, are as followed:

1.  $H_1$  = tourists go on the NBEE for its educational character
2.  $H_1$  = NBEE's foster pro-conservation values
3.  $H_1$  = NBEE's stimulate pro-conservation actions

## 3. Methodology

### 3.1 Research method

In order to obtain data to quantify the influence of NBEE's on changes in NCV and NCA, this research will have an extensive research design. In this research design, the emphasis lies on finding a pattern and regularity in the data, which is assumed to represent the outcome of a causal process (Clifford et al., 2010). Whether a causal relationship between NBEE and NCV & NCA exists, will be explored. A quantitative research method suits best, because this research seeks for correlation, relationships and causality instead of deeper meanings.

The influence of NBEE's on NCV and NCA will be explored by making use of a case study. Data gathered in a case study has the potential to reveal general relations that can be used to generate or modify models or hypotheses (Rice, 2010). The seaside village Lauwersoog was selected for this study. It is part of the Wadden Sea Region, which is an important tourism destination and significant ecological area as well (Sijtsma, 2015). As a result, both nature conservation and NBEE's have a prominent place in Lauwersoog. Lauwersoog provides many NBEE's, like seal watching excursions, watching birds and animals with a forester, mudflat excursions and many more. They are arranged by several individuals and commercial companies. Because of limited resources and time, this research will only look at the



seal watching excursion with sandbank excursion, organized by Beleef Lauwersoog, a camping near the Wadden Sea in Lauwersoog. The choice of sampling is judgemental. The sample, which is the excursion that include all individuals units, is selected subjectively by the researcher based on own judgement, knowledge and experience. This approach has a few downsides. A judgemental approach can yield a biased sample because of the researcher's prejudices and previous experiences may be limited (Rice, 2010). Another shortcoming of this research is that it might not cover the overall population but a particular group of people, namely a group of people that is more likely to be interested in environmental issues. Research shows that a lot of people who visit NBEE's are already sympathetic to environmental issues and open to environmental messaging (Wheaton et al., 2016). This might influence the results. Therefore, conclusions can be drawn about this particular population of nature-based tourists only. The excursion that has been chosen for this research is a typical example of a NBEE, in which an outdoor activity is accompanied by environmental education (Palmer, 2002). It has been chosen because of its length (the excursion takes around 3,5 hours) and its high educational value. During this excursion tourists watch seals and visit the most famous sandbank in the Netherlands, the Engelsmanplaat. They experience what it is like to walk over the bottom of the sea. This takes place under the guidance of an expert guide who provides information about the surrounding nature and animals (Beleef Lauwersoog, 2018).

### **3.2 Questionnaire survey research**

The research is a questionnaire survey research. This is an instrument to gather information about characteristics, behaviours and attitudes of a population by giving them a standardized set of questions (Clifford et al., 2010). Survey research is especially useful if one wants to reveal people's attitudes and opinions about environmental issues and risks and wants to extend this to broader applicable generalising results (McLafferty, 2010). The questionnaire used for this research is divided into two sub-questionnaires (see appendix 1). In the first part, attitudes towards NCV and NCA are being asked. In order to obtain background information on the tourists, general characteristics are asked as well. According to previous studies, socio-economic variables like income levels, levels of education and gender have a significant influence on the valuation of nature (Tisdell & Wilson, 2005). Therefore, these characteristics are taken into account. The second part of the questionnaire contains questions about tourists their attitude towards NCV and NCA now that they have experienced this excursions. In this way the values that tourists attached to NCV and NCA before the excursion can be compared to the values that tourists attached to NCV and NCA afterwards. Both the first and the second part of the questionnaire were given at the start of the excursion, because they must be linked together while the respondent must stay anonymous. The risk that accompanies this method is that the respondent might see or fill in the second part of the questionnaire before the end of the excursion. To minimize this risk, the notion that the second part of the survey must be filled in afterwards is repeated explicitly when the questionnaires were distributed. The second part of the questionnaire starts on a new page as well, to prevent tourists from seeing the second part beforehand. Participants were ensured that their information would remain confidential, that it would be used for this research only and that it wouldn't be published. The survey is anonymous, in order to protect the privacy of the respondents. Answers cannot be traced back to a person and respondents were not obliged to answer a question when they did not want to. The response rate was very high, most visitors were willing to participate.

A shortcoming of filling in the questionnaire directly after the excursion is that it might measure a temporal instead of a permanent effect. According to a similar research conducted by Wheaton et al.

(2016) the connectedness to nature among tourists increased during the elephant seal viewing tour in California, but this connectedness returned to previous levels three months later. Due to limited time it is unfortunately not possible to return to the respondents a few months later.

The questionnaire mainly consists of fixed-response questions, because the fixed alternatives act as a guide for the respondent which makes it easier to provide an answer and it is easier to analyse and interpret (Clifford et al., 2010). In this way an unequivocal answer can be given to the research question in the end.

The collected data is analysed through statistical testing in SPSS to be able to reject or accept the hypotheses. A Paired Sample T-Test is used to test whether the values that people attach to NCV/NCA before the excursion and NCV/NCA afterwards significantly differ from each other. To statistically test the effect of the control variables (gender, age, employment status, income and level of education) on the NCV and NCA values, a Multiple Linear Regression is being used. Descriptive statistics provide an overview of the given answers in addition.

### **3.3 Positionality**

I regard myself as an outsider regarding the issues that came across and did not attempt to influence the answers of my respondents when they were filling in the questionnaire. Nonetheless, one needs to be cautious with socially desirable answers. Behaviours regarding the conservation of nature are of normative relevance (Kals et al., 1999). It is likely that people fill in higher values regarding their nature conservation values and actions than they actually relate to, because this is socially desirable. But this does not influence the results of the Paired Samples T-Test, because this test is about the difference between the values given before and after the excursion and not about the values themselves. To increase the accuracy of the answers and to decrease the suggestive character of the questions, the phrase 'in your daily life' has been added to the questions. To take the attention away from nature conservation, the question in which the motivation for going on the excursion is being asked consists of a variety of reasons of which 'learning about the environment/animals' is only one of the many options.

## **4. Results**

### **4.1 Demographics**

The surveys were held on three different days (on Tuesday, Friday and Saturday). From the collected data (n=122) 59 respondents were male and 63 were female. The overall age distribution is shown in figure 2. Children are included in this research, because contact with nature may enhance children's willingness to support nature conservation as well (Zhang et al., 2014). Observing nature can enhance children's interest in and appreciation of animals and plants (Lindemann-Matthies, 2005).

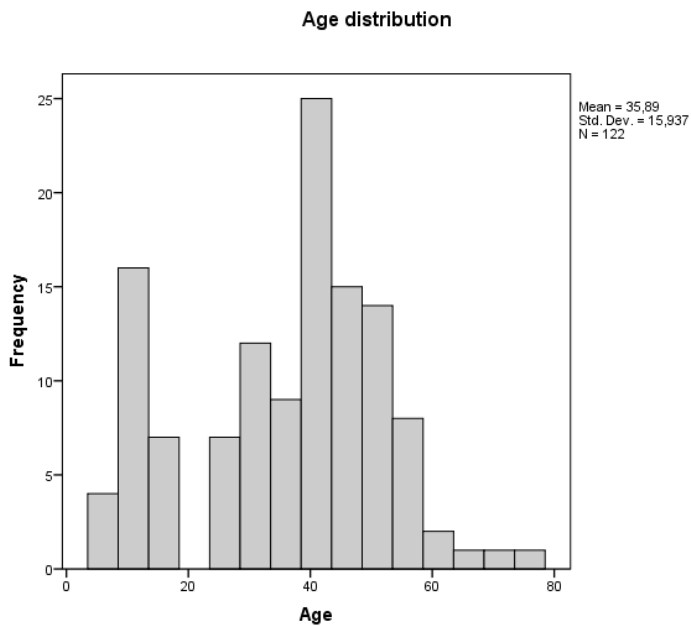


Figure 2: Age distribution

As shown in figure 3 the respondents came from all over the Netherlands, but also from Belgium and Germany. The map shows the widely spread spatial distribution of the respondents. Unfortunately this research lacks respondents living in the southern provinces of the Netherlands. The few respondents who came from Germany (n=11) and Belgium (n=4) are not enough cases to be able to make a distinction based on the different country of residence either.

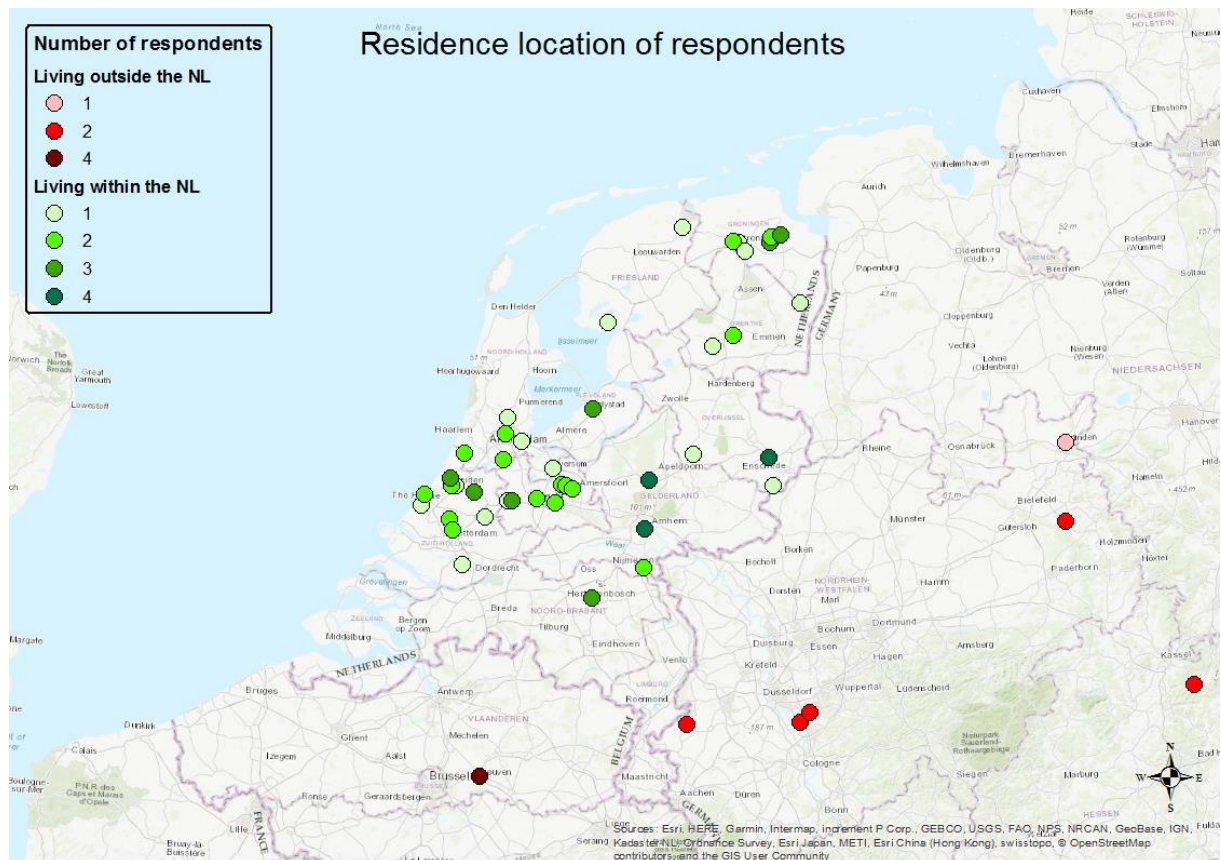


Figure 3: Map with the location of residence of the respondents

## 4.2 Educational character

Table 2: Descriptive statistics of question 7 (1<sup>st</sup> part)

		Why do you go on this excursion?		
		Frequency	Percentage	Valid Percentage
Valid	other	7	5,7	5,7
	I want to experience adventure	29	23,8	23,8
	for celebrating a special occasion	3	2,5	2,5
	to learn something about the environment/animals	38	31,1	31,1
	for relaxing	40	32,8	32,8
	to catch up with friends/families/colleagues	5	4,1	4,1
	Total	122	100,0	100,0

Table 2 represents the results of question 7, in which the motivation for going on the excursion is being asked. The valid percentage (third column) shows the percentage of people who chose a certain option without including missing cases. According to my own observations during the three excursions, the educational character of the excursion was very much present. Aspects of nature conservation, such as a changing bird breeding area because of disturbance caused by tourists, were discussed explicitly during the excursion. Nevertheless, as shown in table 2, only 32,8% of the respondents go on this excursion to learn something about the environment and/or animals. So, although the excursion has an educational character, the majority of the respondents do not go on this excursion to learn something about nature. ‘To learn something about the environment/animals’ is still the second largest reason. Most of the respondents go on this excursion to relax. This trend is in line with data provided by Toerdata Noord who analysed the motives of tourists going to the Wadden Sea Region. Their data shows that walking (26%), cycling (25%) and swimming/bathing (14%) are the most popular activities among tourists in the Wadden Sea Region (Revier, 2013). All three can be described as activities undertaken ‘for relaxing’ or ‘to experience adventure’. Nevertheless, participation in NBEE’s in the Wadden Sea Region did grow in popularity during the last decades (Revier, 2013).

## 4.3 Paired samples

Table 3: Results of Paired Samples T-Test

Age	Sig. Pair 1: NCV	Sig. Pair 2: NCA_hour	Sig. Pair 2: NCA_money
All cases (n=116)	0.129	0.036	0.053
>= 15 (n=95)	0.379	0.046	0.205
>= 18 (n=89)	0.299	0.079	0.288
<= 17 (n=27)	0.276	0.249	0.022

To be able to answer the questions: ‘do NBEE’s foster pro-conservation values (NCV)?’ and ‘do NBEE’s stimulate pro-conservation actions (NCA)?’, NCV and NCA have been measured at the start of the excursion and at the end of the excursion. NCV\_before has been measured by asking the respondents: ‘On a scale of 0 to 10, how much value do you attach to nature conservation in your daily life?’ NCV\_after has been measured by asking the respondents: ‘On a scale of 0 to 10, how much value do you attach to nature conservation after participating in this excursion?’ To look whether the values regarding NCV\_before and NCV\_after significantly differ, a Paired Samples T-Test is being used. The levels of significance are shown in the second column in table 3. Results are being analysed at the basis of a significance level of 0.05. As shown in table 3, NCV\_after does not significantly differ from NCV\_before. This does not only apply when we include all cases, but also applies when we only include the cases of 15 years and older, 18 years and older and the cases which are 17 years old or younger. This means that on the basis of a significance level of 0.05, we can accept the following null hypothesis: H0 = NBEE’s do not foster pro-conservation values. This is in line with the results of question 5 (in the second part of the questionnaire), which are shown in table 4. The majority of the respondents (57,4%) do not think the excursion influences his or her values regarding nature conservation.

Table 4: Descriptive statistics of question 5 (2<sup>nd</sup> part)

**Does this excursion foster your values regarding nature conservation?**

		Frequency	Percentage	Valid Percentage
Valid	no	66	54,1	57,4
	yes	49	40,2	42,6
	Total	115	94,3	100,0
Missing	System	7	5,7	
Total		122	100,0	

The results above are in contrast with a similar research conducted by Wheaton et al. (2016), who found an increase in tourists connectedness to nature during a three-hour NBEE. They investigated a similar research question; interestingly, they used a seal viewing tour as case study as well. Their results can be nuanced by the fact that this increased level of connectedness returned to previous levels three months later and the experience did not influence nature conservation actions overall (Wheaton et al., 2016).

Two types of questions are being used in this research to measure the value that the respondents attach to their NCA. The first one is NCA\_hour, in which respondents are being asked to give a value to the amount of time they spend on nature conservation related activities. The second one is NCA\_money, in which respondents are being asked to give a value to the amount of money they annually spend on nature conservation. NCA\_hour\_before has been measured by asking the respondents: ‘On a scale of 0 to 10 hours, how many hours per week do you spend on nature conservation related activities?’ NCA\_hour\_after has been measured by asking the respondents: ‘On a scale of 0 to 10, how many hours per week are you planning to spend on nature conservation related activities, now that you have participated in this excursion?’ As shown in table 3, NCA\_hour\_before does significantly differ from NCA\_hour\_after, when we include all ages (n=116). When we include all ages, than our respondents are planning to spend 0.209 more hours per week on nature conservation related activities now that they have participated in this excursion. NCA\_hour\_before does significantly differ from NCA\_hour\_after, when we include only the respondents which are 15 years old or older as well. When we include all

respondents which are 15 years old or older ( $n=95$ ), than our respondents are planning to spend 0.202 more hours per week on nature conservation related activities now that they have participated in this excursion. When we include only the adults ( $\text{age} \geq 18$ ) or only the children ( $\text{age} \leq 17$ ),  $\text{NCA\_hour\_before}$  does not significantly differ from  $\text{NCA\_hour\_after}$ . This means that for these sub-samples, the excursion does not encourage respondents to spend more hours per week on nature conservation related activities.  $\text{NCA\_money\_before}$  has been measured by asking the respondents: 'On a scale of €0,- to €100,-, how many euros do you spend annually on nature conservation?'  $\text{NCA\_money\_after}$  has been measured by asking the respondents: 'On a scale of €0,- to €100,-, how many euros are you planning to spend annually on nature conservation now that you have participated in this excursion?' As shown in the third column in table 3,  $\text{NCA\_money\_before}$  does not significantly differ from  $\text{NCA\_money\_after}$ . This means that the excursion does not encourage respondents to spend more money on nature conservation. When we look at the sub sample of children ( $\leq 17$ ),  $\text{NCA\_money\_before}$  does significantly differ from  $\text{NCA\_money\_after}$ . This means that children are likely to spend €6,- more on nature conservation annually now that they have participated in this excursion.

When including all ages ( $n=116$ ), we can, on the basis of a significance level of 0.05, reject the null hypothesis:  $H_0 = \text{NBEE's do not stimulate pro-conservation actions}$  and accept the alternative hypothesis:  $H_1 = \text{NBEE's stimulate pro-conservation actions, but only when we look at NCA in terms of hours spent on nature conservation related activities.}$

When we look at NCA in terms of money spent on nature conservation, the null hypothesis is being accepted, which means that NBEE's do not foster pro-conservation actions. The latter is strengthened by the findings of a similar research conducted by Kaltenborn & Williams (2002), which shows that experiencing an area has no significant effect on the way tourists view potential management objectives like maintaining/protecting ecosystems in their natural state. Wheaton et al. (2016) came up with similar results, experiencing an elephant seal viewing tour had little influence on nature conservation action. Although many tourists leave the NBEE with intentions to take pro-environmental actions, most excursions do not provide follow up opportunities or activities that would extend the environmental activities from the excursion into other settings (Wheaton et al., 2016). But NBEE's can have a positive and statistically significant effect on nature conservation as well. The turtle watching case study of Tisdell & Willson (2005) shows that going on the excursion changed the stated desire and intended behaviour of the tourists in a positive way regarding the protection of sea turtles. Learning and experiencing contributed to their pro-conservation values and actions (Tisdell & Willson, 2005). The different conflicting outcomes mentioned above might be the result of the fact that the excursions are different from each other and might contain a different amount of environmental education.

#### 4.4 Socio-economic variables

Table 5: Results of Multiple Linear Regression

Variable	Sig. NCV_before	Sig. NCV_difference	Sig. NCAhour_difference	Sig. NCAmoney_difference
<b>Membership: no</b>	<b>0.010**</b> B = -1.109	0.234 B = 0.492	0.444 B = -0.182	0.652 B = 0.146
<b>Education: High School Graduate</b>	0.499 B = -0.588	<b>0.050*</b> B = -1.676	0.106 B = -0.818	0.120 B = 1.028
<b>Employment: Unemployed</b>	0.096 B = 1.518	<b>0.022*</b> B = -2.050	0.158 B = -0.724	0.222 B = -0.850
<b>Age</b>	0.384 B = 0.019	0.512 B = -0.014	0.945 B = -0.001	<b>0.001**</b> B = -0.056

To statistically control the effect of the socio-economic variables that according to Tisdell & Wilson (2005) might influence the valuation of nature, a Multiple Linear Regression is being used. Socio-economic variables that were measured are gender, age, income, employment status and level of education. Whether they are member of a nature conservation organization has been taken into account as well. To increase readability only the variables that show a significant correlation within one of the four Multiple Linear Regressions are shown in table 5. In other words, the variables that are left out do not have a significant effect on the valuation of NCV and NCA. A complete overview of the outcomes of the Multiple Linear Regression can be found in appendix 2.

As shown in table 5, the variable *membership* significantly correlates with the value respondents attach to nature conservation before they go on the excursion. Respondents who are a member of a nature conservation organization were taken as reference category. This means that respondents who are not a member of a nature conservation organization value nature conservation with an average of -1.109 points less than respondents who are a member. This means that people who are member of a nature conservation organization attach more value to nature conservation. This might influence the outcomes of this study, but because only 30,3% of the respondents is actually member of a nature conservation organization this effect is limited.

Remarkable is the fact that the variable *age* highly correlates with NCAmoney\_difference. The younger the respondents are, the more money they are willing to pay on nature conservation after participating in the excursion. With every year the age of the respondent increases, he or she is willing to pay - 0.56€,- less on nature conservation than he did before participating in this excursion. This may be explained by the fact that children do not have financial responsibilities yet. Their NCAmoney\_before is therefore very low, but they might want to spend money on nature conservation in the future. Their NCAmoney\_after is much higher creating a relatively high value on NCAmoney\_difference. The variable *high school graduates* significantly correlates with NCV\_difference. This means that, compared with the reference variable *other education*, high school graduates score on average -1.676 points less on the difference between NCV\_before and NCV\_after. The values they attach to nature conservation changed less compared with the people who correspond with other education.

The variable *unemployed* significantly correlates with NCV\_difference as well. It means that, compared with the reference variable *full time employed*, unemployed respondents score on average -2.050 points less on the difference between NCV\_before and NCV\_after. The values they attached to nature conservation changed less compared with the people who are full-time employed.

## 5. Conclusion

This study contributes to already existing studies regarding NBEE's and their possible impact on conservation behaviour. The findings suggest that most of the tourists do not go on this NBEE to learn something about the environment, but for relaxing. The excursion does not foster pro-conservation values either. However, when we include all ages, the excursion does stimulate pro-conservation actions related to hours spent on nature conservation related activities. Behaviours regarding the conservation of nature are of normative relevance (Kals et al., 1999). The NCA question might have a higher socially desirable character than the NCV question, which could explain the different dynamics. Tourists are planning to spend 0.209 more hours per week on nature conservation related activities when they have participated in this excursion. But the excursion does not stimulate pro-conservation actions related to the amount of money tourists spend on nature conservation. Except for children, they are likely to spend €6,- more on nature conservation annually when they have participated in this excursion. Tourists who are a member of a nature conservation organization turn out to attach a higher value to nature conservation than tourists who are not a member.

According to existing literature studies on NBEE's, experiencing an area plays a significant role in increasing conservation values and actions among people (Adams et al., in Tisdell & Wilson, 2005), but this research, as well as research by Kaltenborn & Williams (2002) and Wheaton et al. (2016), shows different. There are a lot of contradictions to be found in the outcomes of related studies. It would be interesting for follow-up studies to look into the causes of these different outcomes.

One of the weaknesses of this study is that it might measure a temporal effect only, since an increase in connectedness to nature can return to previous levels a few months after the excursion took place (Wheaton et al., 2016). Future research can measure a possible permanent effect if it would not only conduct surveys during the excursion, but also a few months after the excursion took place. Another weakness of this study is that it does not cover the overall population. Conclusions can be drawn about the population of nature-based tourists only, because most people who visit a NBEE are already sympathetic to environmental issues and open to environmental messaging which influences their responses (Wheaton et al., 2016). This research is strengthened by the fact that there is a lot of diversity in place of residence, age, income, gender and education level within the sample. NCA is being measured using two different measurement levels, using both 'hours spent' and 'money spent' to value NCA. This improves the level of accuracy of NCA.

Despite the fact that this study shows that NBEE's have little effect on NCA, NBEE's might stimulate NCA and NCV in the future by maintaining the experience over the long run. Many tourists leave the NBEE with the intention to take pro-conservation action, but according to Wheaton et al. (2016) most excursions do not provide follow-up opportunities that would extend the environmental activities from the excursion into other settings. A key opportunity is missed to convert the NBEE into sustained conservation behaviours that are beneficial for both the touristic sector as the environment. An effective way to do so is by reminding the tourists of the experience with the use of a social media community (Wheaton et al., 2016).

Future research should look into different management approaches as well. Social-ecological dilemmas, like the tourism-nature relationship, are inherent to governance and are best addressed by collaborative processes, in which multiple sources and types of knowledge are being recognized (Armitage et al., 2009). This study adds new knowledge, namely the insights from the perspective of the tourists who went on a NBEE. Implementing an adaptive co-management approach or self-governance approach in



policy regarding NBEE's might have a positive effect on the value that NBEE's add to NCV/NCA. It might form an effective strategy that places social-ecological systems as such in a situation of mutual gains. Social-ecological systems aren't balanced, but are in permanent state of adaptation (Heslinga, 2018). An adaptive co-management approach might perfectly fit within policy regarding such dynamic systems. By using an adaptive co-management approach, the symbiotic nature-tourism relationship might be strengthened. Self-governance could be an effective way to deal with social-ecological problems as well (Mattijssen et al., 2018). To what extent the adaptive co-management or self-governance approach is being implemented in current tourism-nature dilemmas might form an interesting case for further research.

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## 7. Appendix

### 7.1 Questionnaire – English version

7-5-2018

Seal expedition

#### Seal expedition

Hello,

Thank you for taking the time to fill out this questionnaire! By doing so you help me with my bachelor project for the study Human Geography and Planning at the University of Groningen. This research is about the influence of educational experiences. The questionnaire will take around 5 minutes. If you have any questions, don't hesitate to ask me. Information gathered with this questionnaire will be used for this research only and absolute anonymity will be guaranteed.

Pay attention! The survey consists of two parts. The first part must be completed before the start of the excursion. The second part must be completed after the excursion. You can give the survey back to me after the excursion.

Heleen Jansen  
[h.e.jansen.1@student.rug.nl](mailto:h.e.jansen.1@student.rug.nl)  
+316 415 24 415

#### Part 1: fill in before the start of the excursion

---

1. Gender

*Mark only one oval.*

- Male  
 Female  
 Other

2. What is your age?

\_\_\_\_\_

3. What is your zip code?

\_\_\_\_\_

4. What is your highest level of completed education?

*If currently enrolled, fill in the highest degree received.*

*Mark only one oval.*

- High school graduate, diploma or the equivalent  
 Bachelor degree at university (WO)  
 Master degree (WO)  
 Bachelor degree at college (HBO)  
 Intermediate vocational education (MBO)  
 Other, namely
- .....

7-5-2018

Seal expedition

**5. What is your gross monthly salary?**

Mark only one oval.

- Less than €2000,-
- €2000,- to €4000,-
- €4000,- to €8000,-
- over €8000,-
- Rather not say

**6. What is your employment status?**

multiple options possible

Mark only one oval.

- Student
- Employed - PART TIME
- Employed - FULL TIME
- Retired
- Unemployed

**7. Why do you go on this excursion?**

Fill in the most important reason

Mark only one oval.

- I want to experience adventure
  - For celebrating a special occasion
  - To learn something about the environment/animals
  - For relaxing
  - To catch up with friends/families/colleagues
  - Other, namely
- .....

**8. On a scale of 0 to 10, how much value do you attach to nature conservation in your daily life?**

Mark only one oval.

	0	1	2	3	4	5	6	7	8	9	10	
very little	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a lot

**9. On a scale of 0 to 10 hours, how many hours per week do you spend on nature conservation related activities?**

Think e.g. about (volunteer)work for nature conservation organizations

Mark only one oval.

	0	1	2	3	4	5	6	7	8	9	10	
0 hours per week	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	10 hours per week or more

7-5-2018

Seal expedition

10. Are you a member of a nature conservation organization?

Mark only one oval.

- Yes, namely ..... (fill in the name of the organization)
- No

11. On a scale of €0,- to €100,-, how many euros do you spend annually on nature conservation?

think of e.g. memberships of nature conservation organizations and donations  
Mark only one oval.

	0	1	2	3	4	5	6	7	8	9	10	
€0 per year	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	€100 per year or more

**THE NEXT PAGE MUST BE COMPLETED AFTER THE EXCURSION**

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7-5-2018

Part 2: fill in after the excursion

## Part 2: fill in after the excursion

1. On a scale of 0 to 10, how much value do you attach to nature conservation after participating in this excursion?

Mark only one oval.

0 1 2 3 4 5 6 7 8 9 10

---

very little            a lot

2. On a scale of 0 to 10 hours, how many hours per week are you planning to spend on nature conservation related activities, now that you have participated in this excursion?

Mark only one oval.

0 1 2 3 4 5 6 7 8 9 10

---

0 hours per week            10 hours per week or more

3. Are you planning to join a nature conservation organization because of this excursion?

If you are already a member of an organization and do not want to join a new organization, please fill in "No"

Mark only one oval.

Yes, namely ..... (fill in the name of the organization)

No

4. On a scale of €0,- to €100,-, how many euros are you planning to spend annually on nature conservation now that you have participated in this excursion?

The total amount of money that you want to spend on nature conservation per year (think of memberships of nature conservation organizations and donations)

Mark only one oval.

0 1 2 3 4 5 6 7 8 9 10

---

€0,- per year            €100,- per year or more

5. Does this excursion foster your values regarding nature conservation?

Mark only one oval.

Yes

No



7-5-2018

Part 2: fill in after the excursion

**6. Do you have any further remarks?**

about this research, the survey, or about the excursion in general

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## 7.2 Results Multiple Linear Regression

### Results Multi Linear Regression: NCV before

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94,857	17	5,580	1,540	,096 <sup>b</sup>
	Residual	362,338	100	3,623		
	Total	457,195	117			

a. Dependent Variable: NCV\_before

b. Predictors: (Constant), membership\_no, income\_4000to6000euro, education\_UniversityBachelorDegree, employment\_retired, employment\_student, education\_IntermediateVocationalEducation, income\_over6000euro, employment\_notdefined, gender\_female, employment\_unemployed, income\_rathernotsay, education\_HighSchoolGraduate, education\_MasterDegreeWO, employment\_parttime, income\_lessthan2000euro, education\_CollegeBachelorDegree, Age

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	7,115	1,032		6,895	,000
	gender_female	-,316	,426	-,080	-,741	,460
	Age	,019	,022	,157	,875	,384
	education_HighSchoolGraduate	-,588	,866	-,094	-,679	,499
	education_IntermediateVocationalEducation	,417	,856	,071	,487	,627
	education_CollegeBachelorDegree	,731	,790	,150	,925	,357
	education_UniversityBachelorDegree	1,217	,938	,164	1,297	,197
	education_MasterDegreeWO	,564	,791	,115	,713	,477
	income_rathernotsay	-,559	,513	-,134	-1,090	,278
	income_lessthan2000euro	-,251	,643	-,052	-,390	,698
	income_4000to6000euro	,477	,652	,083	,731	,466
	income_over6000euro	-,359	,937	-,040	-,383	,702
	employment_student	1,491	1,159	,137	1,286	,201
	employment_parttime	,276	,594	,059	,465	,643
	employment_retired	1,655	1,304	,152	1,269	,207
	employment_unemployed	1,518	,903	,283	1,681	,096
	employment_notdefined	1,522	,947	,194	1,607	,111
	membership_no	-1,109	,420	-,261	-2,641	,010

a. Dependent Variable: NCV\_before

**Excluded Variables<sup>a</sup>**

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	gender_male	. <sup>b</sup>	.	.	.	,000
	education_OtherEducation	. <sup>b</sup>	.	.	.	,000
	income_2000to4000euro	. <sup>b</sup>	.	.	.	,000
	employment_fulltime	. <sup>b</sup>	.	.	.	,000
	membership_yes	. <sup>b</sup>	.	.	.	,000

a. Dependent Variable: NCV\_before

b. Predictors in the Model: (Constant), membership\_no, income\_4000to6000euro, education\_UniversityBachelorDegree, employment\_retired, employment\_student, education\_IntermediateVocationalEducation, income\_over6000euro, employment\_notdefined, gender\_female, employment\_unemployed, income\_rathernotsay, education\_HighSchoolGraduate, education\_MasterDegreeWO, employment\_parttime, income\_less than 2000euro, education\_CollegeBachelorDegree, Age

**Results Multi Linear Regression: NCV difference**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69,542	17	4,091	1,189	,288 <sup>b</sup>
	Residual	337,174	98	3,441		
	Total	406,716	115			

a. Dependent Variable: NCV\_difference

b. Predictors: (Constant), membership\_no, income\_2000to4000euro, education\_IntermediateVocationalEducation, employment\_retired, employment\_student, employment\_notdefined, gender\_female, education\_UniversityBachelorDegree, income\_over6000euro, income\_4000to6000euro, employment\_parttime, education\_MasterDegreeWO, education\_HighSchoolGraduate, income\_lessthan2000euro, education\_CollegeBachelorDegree, employment\_unemployed, Age

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,356	1,091		1,243	,217
	gender_female	,094	,419	,025	,225	,823
	Age	-,014	,021	-,122	-,658	,512
	education_HighSchoolGraduate	-1,676	,846	-,282	-1,981	<b>,050</b>
	education_IntermediateVocationalEducation	-,706	,852	-,119	-,829	,409
	education_CollegeBachelorDegree	-1,419	,771	-,307	-1,841	,069
	education_UniversityBachelorDegree	-1,179	,915	-,168	-1,289	,201
	education_MasterDegreeWO	-,900	,771	-,195	-1,167	,246
	income_lessthan2000euro	-,760	,547	-,167	-1,388	,168
	income_2000to4000euro	,023	,511	,005	,045	,964
	income_4000to6000euro	-,492	,635	-,091	-,774	,441
	income_over6000euro	,788	,937	,093	,841	,402
	employment_student	,588	1,131	,057	,520	,604
	employment_parttime	-,284	,579	-,064	-,491	,625
	employment_retired	,788	1,271	,077	,619	,537
	employment_unemployed	-2,050	,883	-,405	-2,322	<b>,022</b>
	employment_notdefined	-1,821	,924	-,246	-1,972	,051
membership_no	,492	,411	,122	1,198	,234	

a. Dependent Variable: NCV\_difference

**Excluded Variables<sup>a</sup>**

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	gender_male	. <sup>b</sup>	.	.	.	,000
	education_OtherEducation	. <sup>b</sup>	.	.	.	,000
	income_rathernotsay	. <sup>b</sup>	.	.	.	,000
	employment_fulltime	. <sup>b</sup>	.	.	.	,000
	membership_yes	. <sup>b</sup>	.	.	.	,000

a. Dependent Variable: NCV\_difference

b. Predictors in the Model: (Constant), membership\_no, income\_2000to4000euro, education\_IntermediateVocationalEducation, employment\_retired, employment\_student, employment\_notdefined, gender\_female, education\_UniversityBachelorDegree, income\_over6000euro, income\_4000to6000euro, employment\_parttime, education\_MasterDegreeWO, education\_HighSchoolGraduate, income\_lessthan2000euro, education\_CollegeBachelorDegree, employment\_unemployed, Age

**Results Multi Linear Regression: NCAhour\_difference**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16,359	17	,962	,844	,640 <sup>b</sup>
	Residual	110,632	97	1,141		
	Total	126,991	114			

a. Dependent Variable: NCAhour\_difference

b. Predictors: (Constant), membership\_no, education\_UniversityBachelorDegree, income\_4000to6000euro, employment\_retired, employment\_student, education\_IntermediateVocationalEducation, income\_over6000euro, employment\_notdefined, gender\_female, employment\_unemployed, income\_rathernotsay, education\_HighSchoolGraduate, education\_MasterDegreeWO, employment\_parttime, income\_lessthan2000euro, education\_CollegeBachelorDegree, Age

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	1,231	,586		2,101	,038
	gender_female	,025	,241	,012	,103	,918
	Age	-,001	,012	-,013	-,069	,945
	education_HighSchoolGraduate	-,818	,501	-,246	-1,633	,106
	education_IntermediateVocationalEducation	-,798	,502	-,240	-1,588	,116
	education_CollegeBachelorDegree	-,791	,463	-,306	-1,708	,091
	education_UniversityBachelorDegree	-,968	,542	-,247	-1,787	,077
	education_MasterDegreeWO	-,834	,460	-,322	-1,811	,073
	income_rathernotsay	-,130	,299	-,058	-,435	,664
	income_lessthan2000euro	-,382	,373	-,150	-1,026	,308
	income_4000to6000euro	-,159	,371	-,052	-,429	,669
	income_over6000euro	-,294	,528	-,062	-,557	,578
	employment_student	,403	,654	,070	,616	,539
	employment_parttime	-,271	,336	-,108	-,807	,422
	employment_retired	,323	,733	,056	,441	,661
	employment_unemployed	-,724	,509	-,256	-1,422	,158
	employment_notdefined	,513	,532	,124	,963	,338
	membership_no	-,182	,237	-,081	-,768	,444

a. Dependent Variable: NCAhour\_difference

<b>Excluded Variables<sup>a</sup></b>						
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	gender_male	. <sup>b</sup>	.	.	.	,000
	education_OtherEducation	. <sup>b</sup>	.	.	.	,000
	income_2000to4000euro	. <sup>b</sup>	.	.	.	,000
	employment_fulltime	. <sup>b</sup>	.	.	.	,000
	membership_yes	. <sup>b</sup>	.	.	.	,000

a. Dependent Variable: NCAhour\_difference

b. Predictors in the Model: (Constant), membership\_no, education\_UniversityBachelorDegree, income\_4000to6000euro, employment\_retired, employment\_student, education\_IntermediateVocationalEducation, income\_over6000euro, employment\_notdefined, gender\_female, employment\_unemployed, income\_rathernotsay, education\_HighSchoolGraduate, education\_MasterDegreeWO, employment\_parttime, income\_less than 2000euro, education\_CollegeBachelorDegree, Age

**Results Multi Linear Regression: NCAmoney\_difference**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41,878	17	2,463	1,206	,276 <sup>b</sup>
	Residual	192,086	94	2,043		
	Total	233,964	111			

a. Dependent Variable: NCAmoney\_difference

b. Predictors: (Constant), membership\_no, education\_UniversityBachelorDegree, income\_4000to6000euro, employment\_retired, employment\_student, education\_IntermediateVocationalEducation, income\_over6000euro, employment\_notdefined, gender\_female, employment\_unemployed, income\_rathernotsay, education\_HighSchoolGraduate, education\_MasterDegreeWO, employment\_parttime, income\_lessthan2000euro, education\_CollegeBachelorDegree, Age

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,380	,777		1,777	,079
	gender_female	,020	,331	,007	,062	,951
	Age	-,056	,017	-,629	-3,394	<b>,001</b>
	education_HighSchoolGraduate	1,028	,655	,228	1,570	,120
	education_IntermediateVocationalEducation	1,233	,657	,273	1,877	,064
	education_CollegeBachelorDegree	,285	,601	,080	,475	,636
	education_UniversityBachelorDegree	,966	,706	,182	1,368	,175
	education_MasterDegreeWO	,425	,602	,119	,707	,482
	income_rathernotsay	,560	,401	,182	1,397	,166
	income_lessthan2000euro	-,081	,495	-,023	-,164	,870
	income_4000to6000euro	,658	,504	,159	1,307	,194
	income_over6000euro	,536	,716	,083	,749	,456
	employment_student	,151	,878	,019	,172	,864
	employment_parttime	,391	,450	,116	,869	,387
	employment_retired	1,039	,982	,133	1,057	,293
	employment_unemployed	-,850	,691	-,216	-1,230	,222
	employment_notdefined	,534	,728	,089	,733	,465
membership_no	,146	,322	,047	,453	,652	

a. Dependent Variable: NCAmoney\_difference



**Excluded Variables<sup>a</sup>**

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	gender_male	. <sup>b</sup>	.	.	,000
	education_OtherEducation	. <sup>b</sup>	.	.	,000
	income_2000to4000euro	. <sup>b</sup>	.	.	,000
	employment_fulltime	. <sup>b</sup>	.	.	,000
	membership_yes	. <sup>b</sup>	.	.	,000

a. Dependent Variable: NCAmoney\_difference

b. Predictors in the Model: (Constant), membership\_no, education\_UniversityBachelorDegree, income\_4000to6000euro, employment\_retired, employment\_student, education\_IntermediateVocationalEducation, income\_over6000euro, employment\_notdefined, gender\_female, employment\_unemployed, income\_rathernotsay, education\_HighSchoolGraduate, education\_MasterDegreeWO, employment\_parttime, income\_less than2000euro, education\_CollegeBachelorDegree, Age