Impact Study of Wind Power on Tourism on Gotland

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Abstract

This study investigates the impact of wind power on tourism on Gotland. The main objective is to identify how tourists on Gotland during their holidaying perceive the visual features associated with wind turbines in the landscape. Additionally, it is sought to establish whether tourists plan to return to Gotland despite the presence of wind power installations, with a special focus on first-time tourists. Using a structured questionnaire technique on a sample size of 735 respondents, this study reveals that 8% of tourists perceive wind turbines negatively. Next, the study identifies that the decision to return to Gotland of absolute majority of tourists, including first-time visiting tourists, is not impacted by the presence of wind turbines. Lastly, it has been concluded that a potential on the island exists to develop a form of 'wind power tourism'.

Key words: wind power, tourism, Gotland, impact

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Statement of original authorship

I certify that this is my own work and that the use of material from other sources has been properly and fully acknowledged in the text.

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1 Introduction

Chapter 1 will lay foundations for the current thesis. Research problems will be introduced together with justification of the research. Additionally, research relevant definitions will be included, the methodology will be briefly described, the study outlined and delimitations provided.

1.1 Background to the research and objectives

The current study has been carried out on Gotland, a popular Swedish island, which a number of tourists find an attractive holiday destination. With the arriving tourists the island starts flourishing, which boosts the local economy.

Not only does the tourism industry contribute to the local economy, but so does also wind power, which is abundant over the island as Gotland is blessed with favourable wind conditions to harvest wind energy. The energy generated by approximately 150 wind turbines covers almost 40% of Gotland's electrical energy demand. The goal for onshore and offshore wind power expansion within the Gotland Municipality is set to reach an annual production of approximately 2.5 TWh of electricity, i.e. 1,000 MW installed capacity onshore, which implies that more space will be needed for approximately 250 new wind turbines at certain locations on Gotland. Gotland has already witnessed a significant wind power development, both onshore and offshore, while the proposed new projects will lead to a significant increase in the number of wind turbines. The situation is a subject of debate on the island, including concerns about the potential impact on tourism, particularly as a result of the effect of the wind turbines on the landscape attractiveness.

Therefore, the main objective of the present thesis is to identify how tourists who have encountered a wind park on Gotland during their holidaying perceive the visual features associated with wind turbines in the landscape, and whether the tourists plan to return to Gotland despite having noticed wind power installations. An additional goal is to establish whether wind farms can become a tourist attraction so that tourists decide to visit wind parks for the sake of wind power experience and excursion, for instance through visitor centres. Investigating the impact of wind turbines on tourism seems relevant, particularly in a market context where wind power installations on Gotland are planned to grow.

The following subchapters will investigate further details of tourism on Gotland together with general characteristics of wind power on the island.

1.1.1 Tourism on Gotland

Gotland is Sweden's largest island and the largest island located in the Baltic Sea. According to Statistiska Centralbyrån (Statistics Sweden, 2011), the population counts 57,241 inhabitants of which

about 22,200 live in Visby, the central town. Based on Region Gotland (2012), 18.2 people live per km^2 on Gotland. Land area of Gotland counts 3 151 km^2 in total.

The main sources of income to the island are tourism, agriculture and aggregate and concrete production from locally mined limestone (GeoExPro, 2010). The travel and tourism industry on Gotland represented turnover of SEK 1.4 billion and provided employment for approximately 1,315

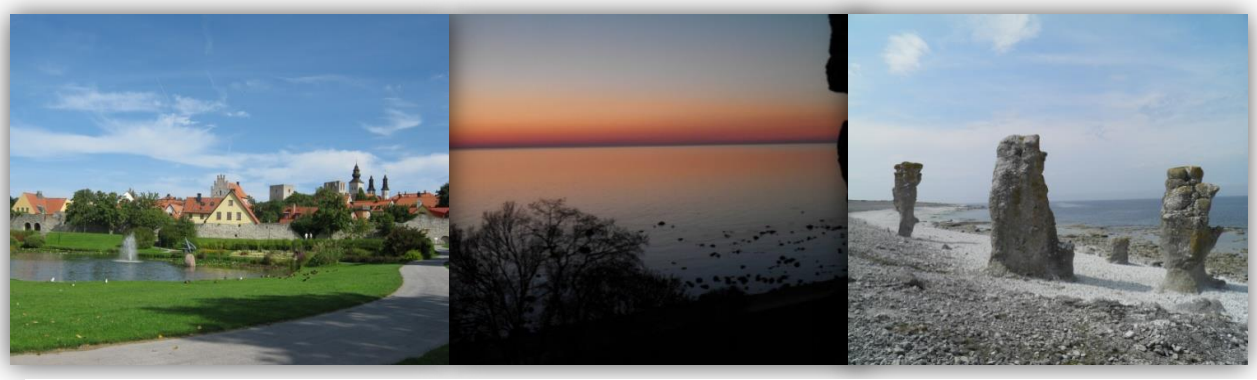

Figure 1. Beauties of Gotland. Visby, Almedalen; sunset on a beach; karst formation called "rauks" on Fårö. Source: author, 2013.

full-time employees in 2011 (Inspiration Gotland AB).

According to Gotland University (2011), more than a million tourists per year come to visit the island each year, with the aim of exploring the landscape and interesting geological sites among other motivations. Figure 1 illustrates three attractions on Gotland and provides an example of the natural landscape that is popular with tourists.

The visitors who originate from Sweden represent 85% of all tourists visiting the island and the Swedish tourists come predominantly from Stockholm. The remaining 15% are foreign nationals, particularly of Finnish, Norwegian, Danish and German origin. Eriksson (2013) also adds that the predominant age group of the tourists visiting Gotland is 'over 50'.

The visitors can be divided into three groups that are represented by tourists, meeting attendees coming for business and visitors. Based on Eriksson (2013), four reasons among others why visitors come to the island are:

- Seaside and weather
- History
- Cultural heritage
- Unique landscape

All mentioned purposes of visit fall within a wide range of the main motives for travel and tourism discussed by Middleton and Clarke (2001) who state six main reasons: business/work-related motives, physical/physiological motives, cultural/psychological/personal education motives,

social/interpersonal and ethnic motives, entertainment/amusement/pleasure/pastime motives, and religious motives.

Eriksson (2013) adds that accommodation tourists usually stay in is distributed as follows: 27% stay in private houses, 37% in cottages or summer houses, 25% with family and friends while 7% decide for camping.

Over the Gotlandic summer, there are three thematic weeks that drive tourists and visitors to the island. During Midsummer people who stay predominantly in summer houses come to Gotland. In July, week 27 is called Almedalsveckan and attracts mainly politicians, PR and business representatives, authorities, and organizations interested in promotion. Tourists and visitors usually stay in hotels, cabins, houses or with relatives or friends during Almedalsveckan.

Week 29 is known as Stockholmsveckan and during that week Visby experiences young adults and youth, aged between 20 and 30 years. The third thematic week is called Medeltidsveckan, i.e. Medieval week, and takes place at the beginning of August, i.e. week 32. Despite weeks 28 and 30 not being thematic, mainly couples and families come to visit. In the course of the summer, up to 150,000 tourists come to Gotland on a weekly basis (Visby Tourist Office, 2013).

Based on Eriksson (2013), the destinations that are visited by tourists coming to Gotland are not precisely known. A significant number of tourists stay in hotels in Visby, travel to Fårö or visit the northern, southern and eastern part of the island. Based on Gotland´s Comprehensive Plan *Bygg Gotland 2010 – 2025*, Figure 2 depicts in detail valued areas on Gotland from a touristic point of view. The Comprehensive Plan is a planning document for Gotland's future development. *Bygg Gotland* covers the entire island of Gotland, both land and water areas. As per Region Gotland (2013), the Comprehensive Plan is not legally binding on agencies or individuals. However, if the municipality´s or other authorities´ decisions deviate from the Comprehensive Plan, the reasons for such deviation should be given.

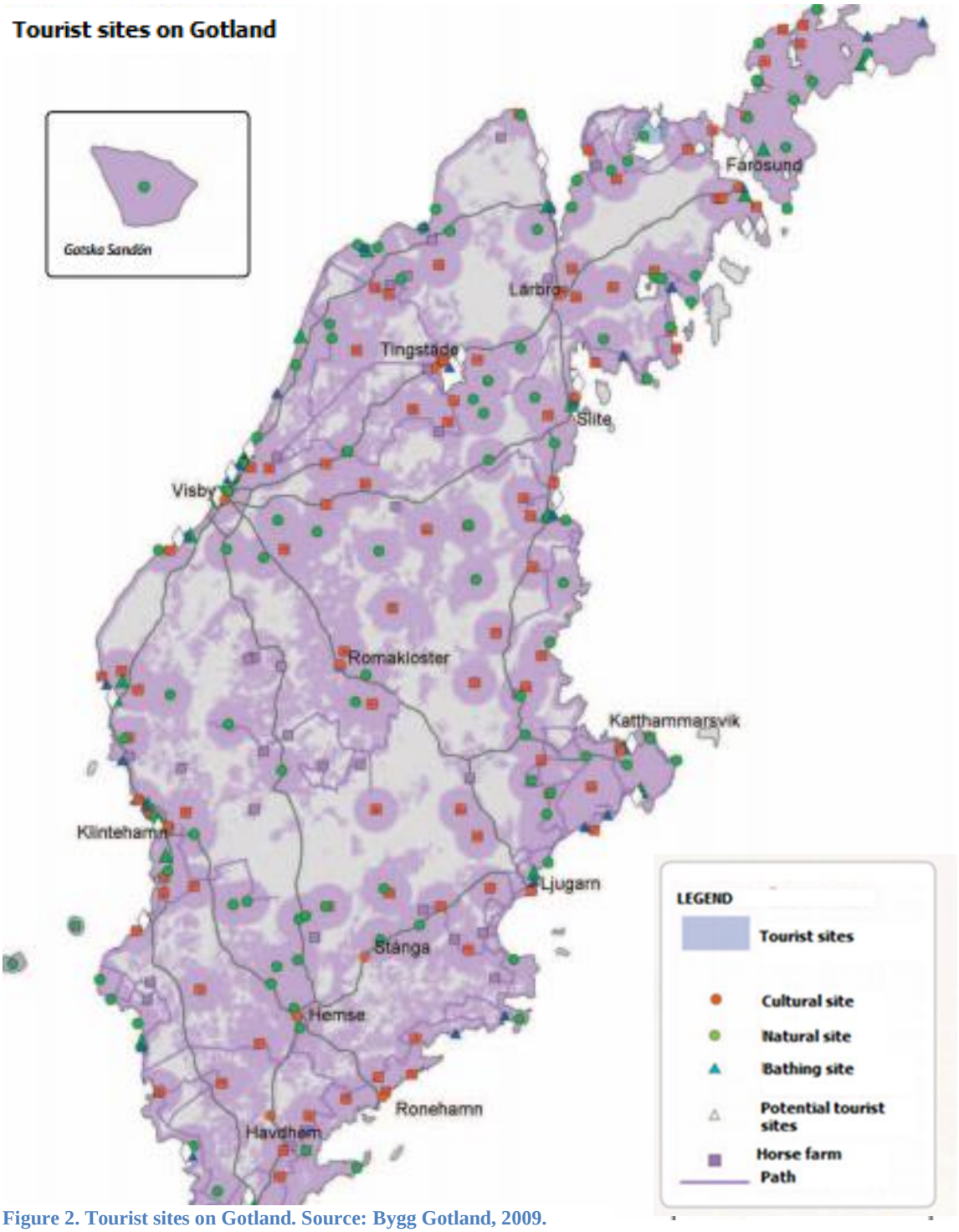

Figure 2. Tourist sites on Gotland. Source: Bygg Gotland, 2009.

In the following section it is of our interest to discover whether wind power installations overlap with any of the mentioned touristic destinations mentioned by Eriksson (2013).

1.1.2 Wind power on Gotland

The current wind power situation has been outlined in Section 1.1. Based on Region Gotland (2012), wind farms are located at various areas around the island, which is demonstrated in Figure 3. The map in Figure 3 shows where existing, granted and proposed wind power installations are located on the island. Almost half of the wind turbines are located in Näsudden in southern Gotland.

Regarding the height of most wind turbines on Gotland, their hub height reaches 80 or 90 m. There is a wind turbine whose hub height reaches 100 m as per Vindlov (2013). However, new wind turbines that are planned to be installed on Gotland will be higher, which will affect the landscape characteristics and potentially the tourist areas in terms of the wind turbine visibility.

To obtain suitable sites for onshore wind farms on Gotland, the following starting points need to be considered, however, minor deviations from the strict regulations might occur. As per the Comprehensive Plan called *Bygg Gotland* (2010), building permits can be granted considering the ten points below:

1. A minimum distance of 1 000 meters from the existing and abandoned homes is recommended and to be granted a permit, it is needed to prove that the sound limitations are within 40 dBA regardless of distance to building.
2. 2 000 meters are needed between wind turbines and church.
3. 2 000 meters are needed between wind turbines and combined buildings or plans for housing development.
4. 3 000 meters are recommended across distinct establishment of wind turbines.
5. Comprehensive plan strategies and policies for building development on the island shall be considered.
6. Comprehensive plan strategies and policies for urban development shall be considered.
7. Comprehensive plan strategies and policies for the general industry development and the *tourism industry*, agriculture and forestry development in particular shall be considered.
8. Natural and cultural environments and active outdoor life interests in general and its national interests in particular shall be considered.
9. National interests shall be taken into account.
10. Areas of *touristic values* shall be considered.

Figure 3. Wind farms on Gotland. Source: Vindlov, 2013.

Although points 7 and 10 above both consider tourism development on Gotland when obtaining suitable sites for onshore wind farms, we can observe in Figure 4 that certain areas might result in areas of overlapping interests as these represent locations with both wind power and tourism plans, for instance the northern part of Gotland.

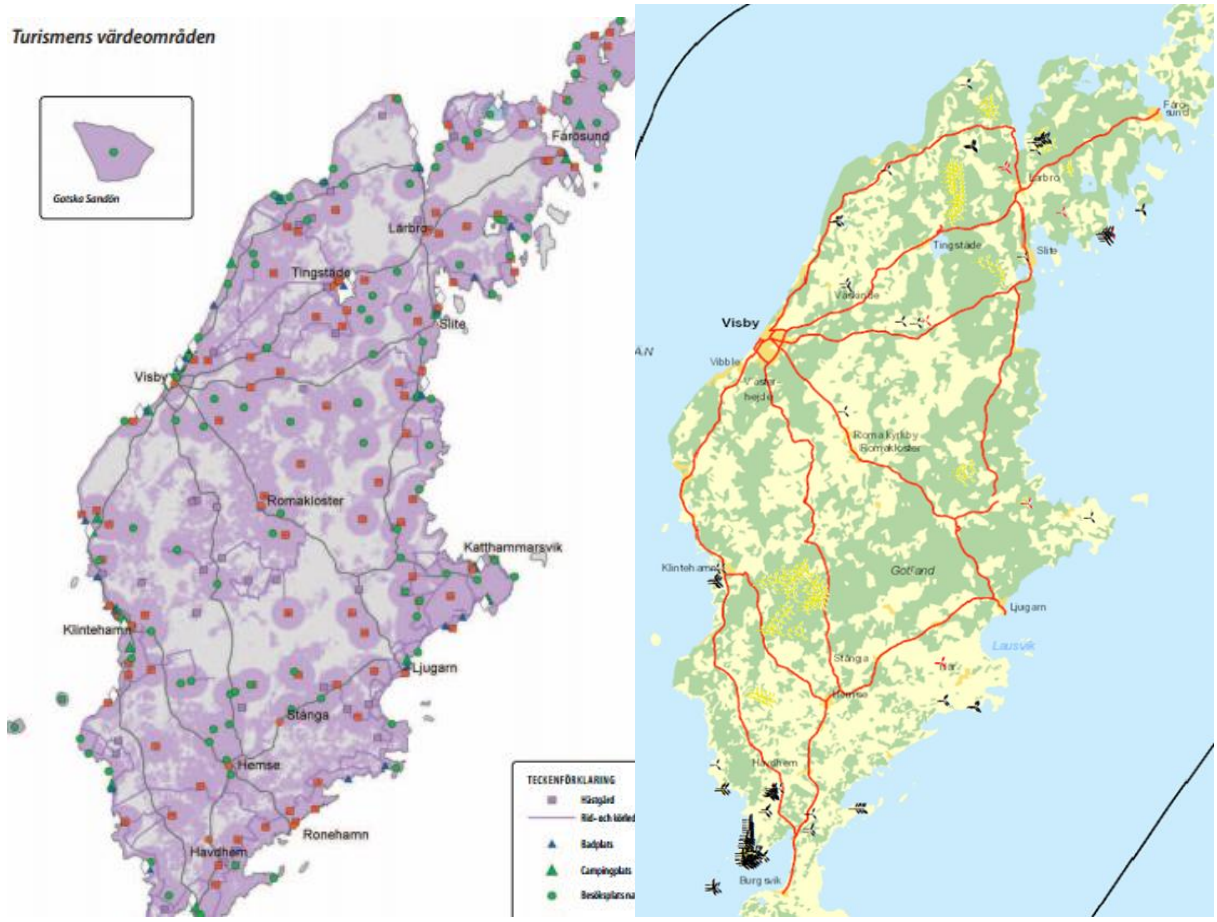

Figure 4. Wind power and tourist areas on Gotland. Source: Bygg Gotland and Vindlov, 2013.

The next section will shed light on formulating our research problem and assumptions behind the study.

1.2 Research problem

Based on the previous sections, this study aims at investigating the impact of wind power on tourism on Gotland. It is desired to identify whether the existence of wind farms on the island influences future decisions of tourists to return to the island and what financial consequences that would imply. Therefore, a questionnaire for tourists leaving the island has been designed with the aim to investigate tourist perspective upon wind turbines via a qualitative method.

Additionally, certain assumptions have been established on the results of other related studies that are reviewed in Chapter 2.

1.3 Justification for the research

On Gotland, being both a site with good wind conditions and a popular tourist resort, there is a risk for a conflict of interests. Therefore, as in certain attractive holiday areas around the world several surveys have been made to find out if wind farms scare away tourists (Earnest & Wizelius, 2011), the time has come to conduct a similar survey on Gotland.

Hypothetically, if 20% of tourists say that they would not return to Gotland due to the presence of wind farms, we should estimate the financial loss of such a situation and recommendations on how to solve or optimize the potential problem should be provided. Additionally, we assume that establishing visitor centres at wind farms could facilitate tourists' decisions to visit wind farms as a tourist attraction.

Simultaneously, the survey results should serve as evidence to local entrepreneurs that there is no need to feel threatened by wind turbines on the island, assuming that the current wind power situation is not perceived negatively by tourists. Therefore, investigating the impact of wind turbines on tourism on Gotland is relevant, particularly in a market context where expansion of wind parks has been planned.

1.4 Methodology

The literature review, relevant research method, i.e. structured questionnaire, type of data needed and procedure of collecting the data via questionnaire are described in detail in Chapters 2 and 3.

1.5 Outline of the thesis

The outline of the thesis follows accordingly: Chapter 2 deals with literature review, Chapter 3 presents the methodology of the survey, Chapter 4 focuses on a data analysis and results. Further, Chapter 5 presents the discussion and recommendations while Chapter 6 states the conclusions and implications.

1.6 Definitions

As definitions adopted by researchers are often not uniform, key and controversial terms will be defined in the current section to establish positions taken in the research. We shall define terms related to tourism, statistics and designing questionnaire, landscape, and visual impact of wind power.

1.6.1 Definitions related to tourism

Based on Middleton and Clarke (2001), we deal with three main types of tourism, i.e. inbound tourism, outbound tourism and domestic tourism. *Inbound tourism*, also known as *domestic tourism*, involves residents of one country who travel within the one identical country for tourism purposes.

International visitors, also known as *outbound tourists*, are residents of a country visiting other countries and travel for tourism purposes.

According to the World Tourism Organization (WTO), there are three essential terms to consider:

- *Visitors* encompass all travellers who fall within agreed definitions of tourism.
- *Tourists* or staying visitors describe visitors who stay overnight at a destination.
- *Same-day visitors*, also called excursionists, include visitors who arrive and depart on the same day. The group predominantly involves people who leave home and return there on the same day. However, there might be also tourists who make day visits to other destinations away from the places where they are staying overnight.

From the point of economic growth, travel and tourism and their associated sectors of hospitality and catering, conferences, exhibitions, entertainment and visitor attractions are also known as the "experience economy" (Middleton and Clarke, 2001). As a result of growing consumption in developed countries (both growing income and/or resources together with higher standard of living), a number of consumers choose to engage in frequent travel for leisure purposes as they have sufficient disposable income and leisure time to indulge in non-essential purchases. Another relevant market condition in the 21st century addresses sustainable development requirements post-1992 AGENDA 21, a process that will increasingly have to be embraced and reflected in marketing decisions. Therefore, it is pertinent to consider wind energy as a part of sustainable development, within whose framework visiting wind farms as a tourist attraction could contribute to sustainable tourism in general.

1.6.2 Definitions related to statistics and questionnaire

According to Shao (1999), a *questionnaire* is a formal set of questions or statements designed to gather the information from respondents that will accomplish the goals of the research project. Questionnaires measure people´s attitudes, behaviour, and feelings toward a specific matter. Questionnaires also provide a uniform structure that allows responses to be analysed and compared (Shao, 1999).

A *bias free questionnaire* is such a questionnaire that has been carefully designed not to lead respondents and to reduce bias – biases arising from the sequence in which subject matter is presented, from any unintentional omission of questions, from unrepresentative sampling, and from an uncontrolled over- or under-representation of subgroups among the respondents (Jankowicz, 2005).

Response rate is the percentage of the total attempted questionnaires that are completed. In other words, the number of respondents who returned the questionnaire, as a proportion of the intended sample size, taking into account the size of the population as a whole (Shao, 1999).

Sample size refers to the number of people to be included in the study (Malhotra et al., 2012). That means the number of respondents that will be evaluated as representing the entire population to a greater extent. In the present study, we know that the population of tourists on Gotland in July reaches up to 400,000 tourists. Thus, we wish to identify how many of these tourists' responses we need in order to achieve a given level of statistical accuracy.

Population is a complete set of people, from which a sample is drawn. Population relates to a group of people sharing some common set of characteristics, in our case these are all tourists, about which analytic generalizations will be drawn based on the sample. In other words, conclusions relating to the whole population will be drawn on a number of tourists that is smaller (sample) than the real population.

Confidence interval is the range into which the true population characteristics will fall, assuming a given level of confidence. A confidence interval is an educated guess about some characteristics of the population. A confidence interval contains an initial estimate plus or minus a *margin of error*, i.e. the amount by which one expects the results to vary, if a different sample was taken, to indicate the reliability of an estimate. Confidence intervals are commonly calculated so that this percentage is 95% (Jankowicz, 2005).

Confidence level is the probability, in principle percentage, that a confidence interval will include the desired population characteristics (Malhotra et al., 2012).

1.6.3 Definitions related to landscape and visual impact of wind power

According to the European Landscape Convention (2010), *landscape* means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. The concept expresses the desire to confront the theme of the quality of the surroundings where people live. This is recognized as a precondition for individual and social well-being, understood in the physical, physiological, psychological and intellectual sense, and for sustainable development as well as a resource conducive to economic activity. Moreover, visual perception of landscape by an individual depends on the gender and personality differences among other factors.

Visual impact of wind power encompasses three main parameters: technical, weather and light, and emotional aspects (Aldén, 2013). The technical parameters deal with topography, size of the turbine, distance from the turbine or contrast. Regarding the weather, on a sunny day the visibility of

Figure 5. Stafva turbine on Gotland on a foggy day. Source: M. Veenstra, ISAWE, 2013.

turbines increases, which is less remarkable on a foggy day (see Figure 5).

However, the most relevant aspect for the purposes of the current paper is the emotional aspect, i.e. people's attitudes, their environmental stand point or experience. Figure 6 illustrates an attempt to make a grey turbine more aesthetic in the landscape by painting on the tower. The event of painting on a wind turbine, organized by ISAWE (International Student Association of Wind Energy), not only brought general public to a wind turbine, but also raised the awareness of wind energy on Gotland.

Figure 6. Painting on a wind turbine. Source: ISAWE, 2013.

1.7 Delimitations of scope and key assumptions

The present thesis identifies the impact of wind power on tourism on Gotland, a Swedish island in the Baltic Sea. In order to address the research objectives, a structured questionnaire has been developed and employed. The questionnaire was distributed to tourists leaving Gotland during the course of July 2013. Only tourists leaving on a ferry have been interviewed.

As time and resources have been limited, only the current impact of wind power on tourism has been researched, i.e. before the further wind power expansion on Gotland. It is outside the scope of the current paper to address the impact of wind power on tourism after the planned wind power expansion.

Moreover, the current survey does not represent a truly random sample of tourists in the sense that the research surveys tourists on an island with a relatively high concentration of wind farms in Sweden. However, the one specific group that this survey intends to test for, i.e. tourists with an aversion to wind turbines, would supposedly not choose Gotland to holiday in this area and would thus be excluded from the sampling.

1.8 Conclusion

Chapter 1 laid the foundations for the thesis. Research problems have been introduced together with the research justification. Furthermore, research relevant definitions have been presented, the

methodology has been briefly described, the study has been outlined, and the delimitations have been given. On these foundations, the thesis can proceed with a detailed description of the research, starting with literature review in Chapter 2.

2 Literature review

Having introduced the objectives and aims of the current thesis in the first chapter, the second chapter aims at building a theoretical foundation upon which the research is based by reviewing relevant literature. The purpose of the literature review is to identify relevant research issues that relate to, and assist in developing a suitable structure for the current study.

2.1 Introduction

The literature review chapter starts with revising Westerberg's et al. article (2012) on offshore wind farms, artificial reefs and sustainable tourism in the French Mediterranean, which was reviewed at the beginning of the thesis planning process. The methodology of the literature review continued with a comprehensive web-based search using consumer facing and academic search engines. The search focused on key words related to tourism with wind energy/power, wind farms/parks/turbines and impact or influence.

A crucial identified document involved in the literature review deals with the impact of wind turbines on tourism that was prepared for the Isle of Anglesey County Council by a tourism company (2012). The material identified online was further verified for references and cross-checked with Westerberg et al.'s report. As a number of reports occurred in the material repeatedly, a core literature to review has been established.

According to TPNW (Tourism Partnership North Wales, 2012), publicly available written material on the impact of wind turbines on tourism is not extensive, however, a number of reports, articles and studies related to the topic are accessible. Primarily, such literature originates in the UK, however, one may identify reports from other locations as well, e.g. France, Quebec, Czech Republic, Sweden or Australia and Denmark. Within the UK, the following studies have been compiled

- Scotland 2002: NFO System 3 (NFO stands for the company´s name) study for VisitScotland in 2002
- Wales 2003: NFO study for VisitWales in 2003
- Ireland 2007: Landsdowne study for Failte Ireland and NITB (Northern Ireland Tourist Board) in 2007
- Scotland 2008: Glasgow Caledonian study for the Scottish Government in 2008.

The limited evidence from Denmark is important in that it is based on a community which already has very extensive experience of wind farms (The Scottish Government, 2008).

Moreover, access to scientific, meaning evidence-based, knowledge is limited, partly due to the fact that a number of studies have qualitative deficiencies and that few systematic studies illustrate the wind power development process both before and after the expansion (Henningsson et al., 2013).

Regarding the status of the written available material, TPNW (2012) summarizes that the coverage of the topic in peer reviewed academic journals or publications is rather limited and predominantly relates to the wider context rather than specifically to tourism impacts.

Before individual reports are examined, we remind that Earnest and Wizelius (2011) provide a brief overview of surveys conducted among tourists around Europe. In 2003, a German survey showed that 27% thought that wind farms spoiled the landscape. A survey on tourism in Schleswig Holstein showed that the wind industry did not affect tourism in the region. Similarly, a survey conducted in 2002 by the West Flemish Economic Study Office, Belgium, showed that 78% of the public were either positive or neutral to a planned offshore wind farm.

In general, permanent residents on the countryside consider the landscape as a natural resource that should be utilized in a sensible way, while tourists, who use the landscape for recreation purposes predominantly, have a more aesthetic view and consider it as 'picture postcard' that should remain unchanged (Earnest & Wizelius 2011). However, the time might have come to accept wind turbines as an element in the tourists' landscape postcards.

The following subsections will review literature dealing with our subject matter originating in various locations, beginning in Scotland and finishing in France. Table 1 at the end of the current chapter summarizes the methodology, main findings and limitations of the particular studies.

2.2 Studies with evidence of impact of wind power on tourism

Scotland

We commence our literature review chapter with an independent Scottish survey called *Tourist Attitudes towards Wind Farms* (2002) that was performed by MORI (Market & Opinion Research International) and commissioned by BWEA (British Wind Energy Association) and the Scottish Renewables Forum. This frequently cited and established survey provides strong evidence that wind farms do more to benefit than harm tourism (AWEA, 2004). Almost half (48%) of the respondents who came to the area reported doing so for the scenery, as opposed to 10% who came for music festivals, the next most reported reason.

Concerning the survey methodology, MORI interviewed 307 tourists face-to-face in five locations, i.e. Tarbet, Inverary, Oban, Campbeltown and Lochgilphead during the weekends of 21 – 23 and 27 – 29 September 2002. The area was chosen due to its greatest concentration of wind farms in Scotland

in 2002. Furthermore, the area also has a tourism industry reliant on the area's high landscape value. In particular, the survey investigated the following

- Frequency of visits to Argyll & Bute
- Reasons for being attracted to visit the area
- Aspects of the area which are of most interest to tourists
- Aspects of the area which tourists found unattractive
- Level of awareness of wind farms in the area
- Recall of location of wind farms
- Effect of presence of wind farms on tourists' impression of Argyll as a place to visit
- Propensity to visit Argyll again in the future
- Potential interest in visiting a wind farm should it be opened to the public with a visitor centre.

As for the survey findings, it would appear that a number of tourists visit Argyll & Bute because of the landscape, i.e. its beautiful views and scenery. Forty per cent of tourists interviewed were aware of the existence of wind farms in the area and when asked whether this presence had a positive or negative effect, two in five (43%) claimed that it had a positive effect, while a similar proportion (43%) felt it made no difference. Less than one in ten (8%) felt that it had a negative effect. Consequently, while majority of tourists have visited the particular areas in which wind farms are located, a number of them have nevertheless not been aware of the existence of close by wind farms. The majority of tourists who knew about the wind farms left with a more positive image of the area because of the presence of wind turbines.

Overall, the research reveals that wind farms are not seen as having a detrimental effect on the tourists' visits and would not deter them from visiting the area in the future. Moreover, the research has shown that the majority viewed the prospect of having a visitor centre at the site of wind farms favourably and would be interested in visiting and subsequently finding out more information on wind farms and their operation. These data suggest that tourism and wind farms can co-exist, and that wind farms can influence tourism positively by promoting a positive image of an area and by encouraging repeated visits.

Regarding the study limitations, one could possibly question the population of the survey and the methodology. The Beacon Hill Institute at Suffolk University (2005) even claims that

> "the MORI survey is flawed because, in addition to some poorly framed questions, it suffers from selection bias and thus does not represent a truly random sample of tourists. This is because it surveyed tourists in the midst of the highest concentration of wind farms in

> Scotland. But the one specific group that this survey intends to test for, i.e. tourists with an aversion to wind turbines, would certainly not choose to vacation in this area and would thus be excluded from the sampling."

The Beacon Hill Institute continues with their critique towards MORI

> "instead of a truly random sample of tourists, MORI Scotland actually sampled a group of tourists that have positive feelings towards wind turbines, have no strong feelings either way, or do not know the turbines exist. In fact, this third group is actually well represented. Despite the fact that this area has the highest concentration of wind farms in Scotland, 60% of respondents replied that they were not aware of any wind turbines in the area. Only 20% of respondents to the survey had seen a wind turbine in the area."

Wales

The study is called *Investigation Into The Potential Impact Of Wind Farms On Tourism In Wales* (2003), in which NFO World Group (2003) investigated, on behalf of the Wales Tourist Board, potential impacts of wind farms on tourism in Wales.

Concerning the survey methodology, in total, eight Hall Tests were undertaken with visitors to Wales during August 2003. Not only were the locations chosen based on their proximity to existing and planned developments, it was also important to obtain a geographical spread across Wales and to take account of different environments, particularly onshore versus offshore. Consequently, eight locations reflected these factors. A total of 266 interviews were accomplished.

The specific subject matter of the research, wind farms, was not revealed to the respondents when they were recruited. Respondents were simply told that they would be asked some questions about visiting the Welsh countryside and coast. All respondents recruited for hall tests described the natural landscape and countryside scenery as important factors when deciding to visit an area. In addition, quotas were set to ensure that there was a balance of staying visitors vis-à-vis day-trippers, overseas visitors vis-à-vis Welsh and other UK visitors, and 'active' countryside visitors as opposed to those who were more 'passive' in nature.

Regarding the findings, among the 266 respondents in a survey 77% said that the beautiful landscape was an important reason why they visited Wales. 23% of the respondents felt that visible wind turbines would have worsened their experience of the visit, while 17% felt that visible wind turbines would have improved their experience. The majority of the tourists were in favour of wind power as an energy source and there was a strong preference for offshore wind power (83%). 43% of tourists disagreed with the claim that wind farms destroyed the visual impact of rural Wales, while 43% agreed that wind farms destroyed the visual impression of the coast of Wales. 68% said they would be

interested in visiting a wind farm if there was a visitor centre, but only 21% felt that wind farms could be a tourist attraction if they were placed in 'tourism areas". 68% of respondents stated that it would not make any difference to their willingness to visit the Wales countryside if the number of wind farms increased, while 11% said they would not return again. NFO made the interpretations that new wind power projects can have negative consequences for the tourism industry in the future. They also noted that none of the respondents reported that more wind farms would increase the likelihood that they would visit Wales again (Vindval, 2013).

Regarding the survey limitations, Hall Tests could be questioned as this is a research technique that involves hiring a venue and recruiting respondents on an adjacent street. Moreover, respondents are often offered incentives to encourage participation, which might reduce credibility of the whole survey.

Australia

The Australian Wind Energy Association (AusWEA, 2004) published two studies on wind farms and tourism called *Wind Farms and Tourism* and a fact sheet *Wind Farming and Tourism*. AusWEA (2004) mentions that "research from overseas and anecdotal evidence within Australia indicates that wind developments do not negatively influence tourism, and may in fact be having a positive effect." One potential explanation for this is stated by West Wind Energy (2004): "utility scale wind energy is relatively new for most Australians. However, we need to remain aware of differences – Australian landscapes are generally more impressive and Australian perceptions of environmental values may be different."

The two mentioned reports draw back to the international research, mainly Denmark and Scotland. Despite the lack of easily obtainable impartial surveys in Australia, there is evidence of tourists visiting wind farms either in the form of a self-guided tour, commercial tour or virtual tour on the web.

Although most Australian wind farms are located on private land and it is not always possible to walk up to the wind turbines, every utility scale wind farm has a viewing area at which members of the public are able to safely pull off the road and learn more about the project. A number of wind farms have visitor information centres, such as the Visitor Information Centre for the Toora wind farm in Victoria, which was visited by over 5,000 visitors between September 2002 and April 2003. Consequently, the number of visitors has increased since 2003 as the Toora Information Centre was only open 20 hours a week during that period. Additionally, the Toora Information Centre is a regular stop for three tour companies to Gippsland, which results in extended opening hours of the Toora Information Centre.

Another frequently visited wind park is located in Western Australia: a major Wind Discovery Centre for the Albany wind farm has been built by the Albany Council to attract additional tourists to the region. According to the city's economic development manager, traffic counters indicate that about 100,000 people visited the wind farm in 2003. The site has "the potential to be a premier Western Australia's tourism icon based on the sheer size of the structures and magnificent coastal setting" as Figure 6 also suggests (AusWEA, 2004: 4).

Upon completion of the current thesis, one market study has been located. In 2007, one of the most detailed studies of the costs and benefits of wind farms appeared, by the name of *Socio Economic and Tourism Final Report: Potential Impact of Wind Energy on Regional Tourism* by Sinclair et al.[1]

Figure 7. Albany Wind Farm, Western Australia. Source: Flickr, 2008.

[1] This study that thoroughly incorporates tourist activity was undertaken for Pacific Hydro and analysed wind farm development on the capes at Portland and Yambuk in Victoria State. The market analysis identified the size and likely reactions of the key segments of the market. The most affected "eco-tourist" market was relatively small and consequently the research suggested any impact would be small. Against that they found that the wind farm could be a positive factor in the tourist experience for other larger segments provided the experience was organized and marketed. Even assuming that there was a substantial (50%) loss of tourists, the number of jobs would still increase as a result of the wind farm development. Moreover, Sinclair et al. specify that there was no impact on tourism of two wind farms in the Esperance region of Western Australia.

Quebec

The study is called *Marketing Study Towards Tourists Visiting Gaspésie to Identify their Attitudes To Wind Turbines* (2004) [2], in which Guay Marketing Group investigated, together with local TechnoCentre, potential impacts of wind farms on tourism in Gaspésie.

Regarding the methodology, the TechnoCentre designed a survey proposed by a consultant in the field in accordance with a sampling plan and using an answer sheet prepared for this purpose. Four sites of investigation were used in the cities of Cap-Chat (wind farm), Gaspe (Forillon Park), Percé (wharf) and Bonaventure (Acadian Museum). In total, 599 questionnaires were completed, 7 rejected for a total of 592 valid, by a team of students hired for the job, trained and supervised.

Figure 8. Wind farm in Quebec.

As for the findings, it has been revealed that wind turbines are known and appreciated. The turbines are intimately related to the environment and ecology. The following points reflect the level knowledge and positive perception of wind turbines. Nearly half of respondents (42.9%) said they had seen the turbines but in the distance. A third would even stop and see the wind turbines up close. Approximately 85% of the tourists who visit Gaspésie have seen wind turbines. The tourist attitude to wind power is positive: 42.3% share an excellent impression and 94.7% find the turbines 'good', therefore positive. It is apparent that the introducing additional wind installations in Gaspésie will not have a negative impact on tourism provided that the wind turbines are deployed with respect to the traditional Gaspésie landscapes and popular natural attractions.

As for the survey limitations, one might be uncertain about the achieved number of respondents in the four locations. Perhaps the number should have been identical for each location in order to "counterbalance" the tourists who experienced the wind farm. Within the four locations, 82 respondents were surveyed at the wind farm, 198 respondents at Forillon Park, 226 respondents at the wharf, and 86 respondents at the museum, which does not represent an equal distribution of the number of participants per location.

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[2] Title translated by the author from a French original *Étude de marketing auprès des touristes de la Gaspésie afin de connaître leurs attitudes face à l'installation d'éoliennes.*

Denmark

According to AusWEA (2004), Denmark has 6, 000 turbines giving it the highest density of wind turbines of any nation. Yet tourism in Denmark has increased by some 50% since 1980. While there are no systematic studies, wind farms appear to have had no major impact on the country's tourism, either positive or negative. Nevertheless, it has been observed that in general wind turbines tend to be tourist attractions when the wind turbines are new in an area. The general opinion within the wind industry is that wind farms are not perceived as a problem for tourism in Denmark.

Figure 9. Offshore wind farm in Denmark. Source: Wind Power Monthly, 2013.

Wind farms are used for marketing in certain areas of Denmark, particularly to the German market, where the public is known to have a high level of interest in both environmental issues and new technology. Hotels, guest houses, and camp sites may use wind turbines for promotion of 'green tourism'.

Sweden

2009

The first study that has been identified in Sweden is called *Wind power in Jämtland, a study related to tourism* (2009), in which Bodén investigated potential impacts of wind farms on tourism in one Swedish region called Jämtland.

The study is based on previous research, interviews and discussions with representatives of the tourism and building interests. These sources are used as the basis to identify issues of strategic importance for tourism and recreational interest, which are related to eleven wind power projects that are located in different landscape types. Interview questions that address both aspects of each case appear to be essential to consider, together with four different perspectives: the general level, visitors, tourism providers and the local community.

Regarding the methodology, ten interviews with the tourism and wind power industry representatives have been conducted, including both face-to-face and phone interviews. Additionally, two meetings with tourism entrepreneurs have been organised.

Figure 10. Wind turbine landscape in Jämtland. Source: C. Mustad, 2009.

Concerning the findings, it has been revealed that from a visitor's point of view, focus should be directed towards different individual wind power projects and their impact on the landscape also in a wider geographical context, i.e. considering cumulative effects of the development. Visitors with a static landscape view, and for whom the journey is a goal in itself in the pursuit of 'pristine' nature and cultural experiences, are considered to be a group that is more likely to reject wind energy landscapes compared to tourists for whom the journey is a means to an end such as music or sports events.

The implications for tourism as a whole can thus be better elucidated and taken into account in the planning and consultation processes prior to wind power expansions. Another point is that the perspective moves the focus away from their own region's players to the potential visitors who reside in regions that generate tourism. For the tourism industry, the landscape attractiveness is crucial as it is dependent on the fact that 'the customer comes to the shop', which differs, for instance, from the operating conditions of wind power industry.

Given the uncertain knowledge background and deployment of wind farms that can be located on more or less challenging locations, the conclusions should be rather interpreted as a hypothesis than a fact. As a result, this note might represent a potential limitation of the study.

2010

The second Swedish document compiled by Länsstyrelsen Dalarnas Län (2010) investigated landscape, wind power and tourism in a study called *Wind Power around Siljan – a landscape assessment. Planning and Preparedness Unit.*

Three different wind power development scenarios in the Siljan area have been presented in the report. Scenario A, which is called "Already built and granted", emphasizes that wind power should be a part of the landscape around Siljan. However, the applications that are already granted are not in accordance with the other landscape values. Scenario B, which is called "Prioritizing wind", assumes that wind power should be given priority over other landscape values around the lake of Siljan and believes that granting approvals can continue. Scenario C, which is called "Landscape custom development", is based on the fact that wind power is one of several values and should be given place in the landscape. However, all the values in the landscape and the complex relationships that exist between these values should be carefully considered.

The scenarios with different visibility analyses and photomontages show that wind turbines should be located in distance from Siljan´s landscape values, including popular tourist locations around Siljan. The tourism industry is of great importance for the area around Siljan, therefore, the extent and the manner in which the landscape forms the primary attraction for tourism matters. Being aware of the important tourist and outdoor recreation locations is a prerequisite for understanding their role in wind power planning and development. A key strategic issue in a local socio-economic perspective is how local interests should be involved so that the potential revenue from tourism and other economic activities are not affected negatively, which is to ensure local socio-economic benefits of wind power in the longer term.

The study concludes that wind power development in the investigated area of Siljan can result in conflict with the tourism industry and that around the lake of Siljan, there are no conflict-free areas for wind power development.

As a recommendation, we suppose that it might be beneficial if the county administrative board of Dalarna organized an official survey on tourists´ perceptions of wind turbines in order to identify the impact of wind power on the Siljan tourism industry.

Czech Republic

The Czech study is called *Wind Turbines in Tourism Landscapes. Czech Experience* (2010) by Frantál and Kunc.

This study proposes to assess and empirically verify possible negative effects from the construction of wind turbines on the landscape image and tourism potential of affected areas, using the example of two comparative recreational localities in the Czech Republic: one with the construction of a wind farm planned and the other with an already existing farm.

Figure 11. Wind farm in the Czech Republic. Source: Czech Wind Energy Association, 2013.

Emphasis was placed on the subjective perception of the phenomenon by tourists and local business representatives from the sphere of tourism.

Concerning the survey methodology, the research consists first of a standardized questionnaire of tourists in the study areas completed via on-site interviewing by trained interviewers and secondly of focused, semi-structured interviews made by the authors themselves with representatives of local business subjects from the sphere of tourism (specifically accommodation and catering establishments). The sample comprised together 229 respondents: 156 tourists and 73 entrepreneurs, with approximately half coming from each area. The tourists were selected for questionnaire interviewing by semi-quota sampling in proportion to their basic demographic characteristics (gender, age, place of residence). The aim was to include an approximately equal gender representation, a complete age spectrum, and respondents from a variety of regions. The analysis focuses also on the socio-geographical factors that shape tourists attitudes to the wind energy development dilemma.

As for the findings, the survey indicates that construction of wind turbines in suitably selected locations may have only a minor or negligible negative impact on the tourists' perception and experience of landscape, and their destination choice. On the contrary, wind turbines could be used to support development of new forms of tourism with the support of proper marketing promotion. Generally, wind turbines are not perceived to be as disturbing as other industrial or infrastructural constructions as factories, mines, or telecommunication towers. Although for an absolute majority of tourists, the attractiveness of local nature and scenery is the most important aspect in their choice of destination, and accordingly they are sensitive to unfavourable interferences into the landscape, only a

minimum number (6%) of tourists offered a strict opinion against visiting locations with wind turbines.

It was also confirmed that most tourists (i.e., more than three quarters) do not regard the presence of wind turbines in landscapes as negative for their experience. According to a majority of tourists (over 90%) the presence of wind turbines in an area does not influence their destination choice. On the contrary, it seems that in many regions, particularly in East-Central Europe, wind turbines are still a relatively new phenomenon which tourists may be quite interested in; almost two thirds of respondents expressed an interest in visiting a wind park as long as there would be an information centre.

Concerning the survey limitations, the authors mention that the study cannot be regarded as representing the general public opinion but as a case-study dealing specifically with the segment of tourists who either prefer the nature-related tourism and active recreation or visit the rural recreational areas that are typical for the current wind energy development.

France

The French study that is called *The case for offshore wind farms, artificial reefs and sustainable tourism in the French Mediterranean* has been compiled by Westerberg et al. (2012).

Concerning the survey methodology, a questionnaire was developed by the authors. Data collection took place during the summer of 2010 from late July to late September on the beaches in Languedoc Roussillon. Westerberg et al. used personal interviews in which the four interviewers (including the author) guided the respondent through the survey. Interviews took place in English and French. The population from which the sample was chosen was defined as those of 17 years and upwards, sleeping at least one night either in the resort community at which they were interviewed, or in the neighbouring coastal resort community. In total 370 respondents were interviewed of which 15 questionnaires were not fully completed, and therefore not used for the final analysis. An additional 16 questionnaires were excluded from the final estimate because the respondents did not consider their responses relevant and/or reliable.

As for the survey findings, most respondents experience some visual nuisance associated with wind farms. The degree and thus their corresponding compensation requirements decrease when the tourists are: younger or mature, of Northern European origin, frequent visitors to the Languedoc Roussillon, and when their vacation is partly motivated by the objective of visiting friends and family or enjoying cultural and historical experiences, aside from ‘sun and sand’ tourism.

Figure 12. Wind farm in France. Source: Green Tourism, 2013.

Moreover, the research reveals that there is considerable scope for 'greening' the tourist communities, a strategy which could be boosted by the presence of a wind farm.

Regarding the survey limitations, face-to-face interviews and guiding the respondent through the survey could be questioned due to the bias that could be potentially introduced by the interviewers.

Table 1 below summarizes the methodologies, main findings and limitations of the nine reviewed studies.

Table 1. Reviewed studies summarized. Source: author, 2013.

Studies with evidence of impact of wind power on tourism: comprehensive review					
Year	***Location***	***Authors***	***Methodology***	***Findings***	***Limitations/ Drawbacks***
2002	Scotland: Argyll and Bute	MORI Scotland	307 tourists interviewed face-to-face in five locations.	Wind farms are not seen as having a detrimental effect on tourists' visit and would not deter tourists from visiting the area in the future.	Unsure about the methodology.
2003	Wales	NFO World Group for VisitWales	8 Hall Tests were undertaken with 266 visitors to Wales during August 2003.	68% of respondents stated that it would not make any difference to visit the Wales countryside if the number of wind farms increased, while 11% said they would not return again.	Hall Tests could be questioned.

2004	Australia	AusWEA	N/A	Wind farm visitor centres are a popular tourist attraction in the landscape.	One existing market analysis. Official survey on tourists´ perceptions of wind turbines has not been carried out.
2004	Denmark	AusWEA	N/A	Wind farms are not perceived as a problem for tourism in Denmark.	No systematic studies on the impact of tourism and wind farms.
2004	Quebec	Richard Guay Marketing	599 questionnaires were completed in four locations of Quebec (a wind farm, Forillon Park, wharf, Acadian Museum).	New wind installations in Gaspésie will not have a negative impact on tourism provided that the wind turbines are deployed with respect to the traditional Gaspésie landscape and popular natural attractions.	The number of respondents in the four locations should have been identical for each location: 82 respondents were surveyed at the wind farm location, 198 at Forillon Park, 226 at the wharf, and 86 at the museum.
2009	Sweden	Bodén	Scientific literature, interviews and discussions with local representatives of both tourism and wind power.	Visitors with a static landscape view (‘pristine’ nature) are more likely to reject wind turbine landscapes compared to tourists for whom the journey is a means to an end (music or sports events).	The conclusions should be rather interpreted as a hypothesis than a fact.
2010	Sweden	Läns-styrelsen Dalarnas Län	Three wind power development scenarios, "Already built and granted", "Prioritizing wind", and "Landscape custom development", are described and accompanied by maps and photomontages.	Wind power development in the investigated area can result in conflicts with the tourism industry. There are no conflict-free areas for wind power development around Siljan.	Official survey on tourists´ perceptions of wind turbines would be beneficial.

2010	Czech Republic	Frantal and Kunc	Standardized questionnaire survey of tourists together with semi-structured interviews with representatives of local business subjects from the sphere of tourism. 229 respondents surveyed in total.	The survey findings indicate that construction of WT in suitably selected locations may have only a minor or negligible negative impact on the tourists' perception and experience of landscape, and their destination choice.	The survey cannot be regarded as representing the general public opinion but as a case-study.
2012	France	Westerberg et al.	370 respondents interviewed by a questionnaire.	Some visual nuisance associated with wind farms, the degree decreases when tourists are: younger or mature, of Northern European origin, frequent visitors to the Languedoc Roussillon, and when their vacation is motivated by visiting friends and family or enjoying cultural and historical experiences, aside from 'sun and sand' tourism.	Guiding the respondent through the survey.

As for the limitations or drawbacks related to methodological concerns in general, TPNW (2012) suggests that it is important to be aware of a debate on the methodological approach of the main UK studies in the last ten years. Doubt has been casted on the suitability of Hall Tests when implemented, the sample size of respondents, the filtering of respondents interviewed and the use of potential leading questions. This criticism was taken verbatim from earlier views expressed by the British Wind Energy Association that may not have been impartial.

However, TPNW (2012) believes that the concerns appear sufficiently sound for the results to be fully accepted as evidence when properly interpreted, and to be at least as reliable as the results from other more recent studies. The Hall Test method is considered appropriate for investigating impact of wind power on tourism as well.

2.3 Conclusion

Chapter 2 reviewed nine studies dealing with wind power and tourism originating in various locations, beginning in Scotland while finishing in France. In summary to the chapter, we conclude that the coverage of the topic in peer reviewed journals or publications is rather limited and mainly relates to the wider context rather than specifically to tourism impacts. Overall, the studies conclude that wind power does not necessarily have detrimental effect on tourists' visits.

In order to provide accurate and reliable results for the current survey, we need to be aware of all the potentially questionable aspects of the reviewed studies and maximize the effort to eliminate such drawbacks. Thus, as a reflection to the literature review, the following chapters will draw attention to explicit and clear methodology for the current survey while keeping the research public, systematic and official, the question of the needed sample size will be addressed, guiding the respondents through the survey will be avoided, careful interpretation of the results will be conducted to the author's best efforts, and Hall Tests will not be included at all. Simultaneously, good research practice, for instance statistically correct sample size or concisely designed questionnaire, observed in the reviewed studies has been recognized and will be taken into consideration.

As noted in Chapter 2, various research methods have been employed in the nine reviewed studies. Consequently, Chapter 3 will shed light upon the method that has been specifically selected for the purposes of the current thesis.

As a final note, we conclude that no study specific to the case of Gotland has been identified and therefore, it is worthwhile to investigate the situation on the island in order to increase the current knowledge on the subject.

3 Methodology

To complete the aims and objectives outlined in Section 1.1, Chapter 3 defines which data are needed to be collected in order to address the research objectives. Additionally, the procedure of collecting the data is described.

3.1 Designing the questionnaire

For the purposes of the current survey, structured questionnaire has been used. The questionnaire design commenced early April 2013 and was finalized at the end of June 2013. The questionnaire was designed by the author, supervisors, advisors, related academics and verified by statisticians and psychologists. Two Gotlandic organizations, Inspiration Gotland AB, located in Visby, and Destination Gotland, also participated in the final preparations of the questionnaire. As for the latter mentioned, it was the company's condition to verify the questionnaire before the survey could be conducted within their premises.

Subsequently, the questionnaire was piloted for one week, during which time, resources, and response rate were tested. The pilot study preceded the field survey and took place after midsummer, from 24 June 2013 till 26 June 2013. The questionnaire itself was not changed, however, certain procedural changes, which are further discussed in Section 3.4, were introduced after the pilot study.

Concerning layout, the questionnaire comprises of three sections. The first section begins with addressing the number of tourist's visits, reasons for visit, length of stay, and accommodation type. The second section focuses on questions about tourists' attitudes towards wind turbines, followed by a third section addressing personal data, i.e. gender, age, nationality, and potential comments. All the before mentioned data are needed to be collected in order to address the research questions.

Regarding the design of the questionnaire, which is attached in Appendix A, it should be noted that the paper questionnaire was printed in colour in order to maximize the response rate, in other words, to increase the attractiveness of the questionnaire.

Firstly, the design of questionnaire instructions is examined in Section 3.1.1. The next Section 3.1.2 provides reasoning for the questionnaire items, i.e. questions, and explains which data ought to be collected for the final analysis.

3.1.1 Questionnaire instructions

From the design point of view, the instructions were attached to the questionnaire on the top with a tear-off tag so that the respondents could keep the information and the website link where the survey results have been posted.

UPPSALA UNIVERSITET

WIND POWER AND TOURISM QUESTIONNAIRE

For outbound tourists only.

Note: You may quit the questionnaire anytime you wish.

Did you know that there are around 150 wind turbines on Gotland? Although it is less than 3% of all wind farms installed in Sweden, the energy generated by wind turbines covers almost 40% of Gotland's electrical energy demand. In this questionnaire, The University's Wind Energy Department surveys how you, as a tourist, perceive wind farms. Thank you!

View our survey results 9 September 2013 by accessing the following link:

http://www.hgo.se/tourism

Figure 13. Questionnaire instructions.

The instructions as per Figure 13 were provided with a university logo to increase the credibility, trust and understanding of the overall context. In order to respect the ethical guidelines, the instructions explained that completing the questionnaire was voluntary and the respondent may quit the questionnaire anytime. Afterwards, the respondent learned certain facts about wind energy on Gotland in order to stimulate and motivate the respondent's willingness to complete the questionnaire. The aim of including the wind power information was to draw the respondents' attention to the questionnaire in an educative way.

As for the language of the questionnaire, it was printed both sided, where one side was in English and the other one in Swedish.

Moreover, two additional means of maximizing the response rate have been implemented. First, unlike the Wales study (see Chapter 2) the subject matter of the survey, i.e. wind power and tourism, was revealed to the respondents in order to increase their understanding and attract their attention towards the questionnaire. Secondly, the respondents were provided with a result website link so that they could view the survey results and felt motivated to complete the questionnaire.

3.1.2 Questionnaire items

Each question listed in the questionnaire is described and explained below.

Q 1. Please indicate how many times you have visited Gotland since 2008.

By asking Question 1, it is intended to discover whether the tourist was a returning visitor or a first-time comer. This information matters particularly in the data analysis as the more first-time comers there are, the more it matters to find out the impact on their decision to return. The time period has been defined 'since 2008' to specify how frequent the visit was during past five years.

Q 2. What was the main reason for having visited Gotland?

- ☐ Nature
- ☐ Culture & History
- ☐ Seaside & Weather
- ☐ Family & Friends
- ☐ Business/ Conference
- ☐ Other, please specify .....

If the choice in Question 2 is nature, it implies that these subjects should be sensitive towards objectionable interferences of wind turbines on the landscape character and visual impact of wind power (Frantál & Kunc, 2010: 10). The four main reasons for visiting Gotland have been based on information given in Section 1.1.1.

Q 3. Please indicate how long you stayed on Gotland.

- ☐ Day trip only
- ☐ 1 - 3 days
- ☐ 4 - 7 days
- ☐ 7 days +

The investigated length of stay in Question 3 has been established to learn the number of tourists who visited Gotland for less than 24 hours. Such a group is treated differently in the data analysis as day trippers who stay less than 24 hours cannot provide us with significant representative information.

Q 4. Please indicate what type of accommodation you used during your stay on Gotland.

- ☐ Hotel/ Hostel/ Guest house
- ☐ Summer house/ Cabin
- ☐ Camping
- ☐ Other, please specify .....

In Question 4, it is of our interest to find out the potential exposure to wind turbines from the accommodation perspective. It is assumed that tourists that were camping or had their own accommodation, most likely a summer house, or stayed with their family and friends, were more likely to be exposed to wind turbines and had therefore a more distinct opinion on wind power on Gotland. It is also assumed that such tourists are regular visitors of Gotland.

On the contrary, tourists who paid for accommodation, i.e. hotels, hostels, guest houses etc. were less likely to observe a wind turbine than campers or summer house dwellers. Additionally, a ground to measure the contribution to the local entrepreneurs dealing with accommodation has been prepared for potential future research.

Q 5. Did you see any wind turbines during your stay on Gotland?

☐ Yes ☐ Unsure

☐ No

Question 5 is crucial as it is desired to learn how many tourists have observed wind turbines in the landscape. If the respondents noticed wind turbines, we asked following Question 6 about the tourists' impression of the visual features in question.

Q 6. My impression of seeing wind turbines on Gotland may be described as

☹ Negative ☐ 😐 Neutral ☐ ☺ Positive ☐ ? Not applicable ☐

Next, Question 7 represents a combination of statements about:

- the respondents' change of attitude, if any:

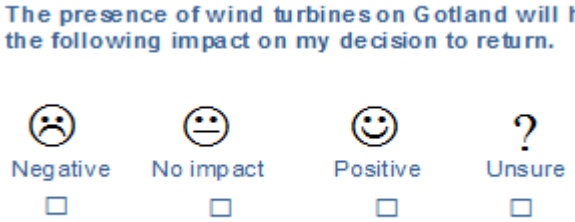
My attitude to wind turbines before visiting Gotland could be described as

☹ Negative ☐ 😐 Neutral ☐ ☺ Positive ☐

My attitude to wind energy after visiting Gotland could be described as

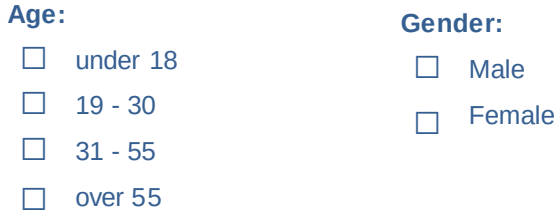
☹ Negative ☐ 😐 Neutral ☐ ☺ Positive ☐

- the tourists' decision to return based on the impact of presence of wind turbines on Gotland:



- whether the respondents would be interested in visiting a wind farm on Gotland as a tourist attraction:

The third section, Question 8, deals with personal data of the respondent. The first question about gender was asked to track differences in perception of wind turbines. The second question about age was included to track perception divergences, i.e. whether younger age groups tend to support wind turbines and the older group is more critical:



Lastly, the geographical variable has been surveyed in order to detect whether origin plays a role in perception of wind turbines:

The question was formulated as ‘country you most identify with’ instead of ‘nationality’, ‘where are

you from?' or 'country of origin' due to the fact that one might be born in a country, but lives somewhere else and therefore considers herself/himself as a different national. Such wording should provide sufficient comfort to answer the question.

Next, a field for respondents' comments was provided, for '*a professional interviewer is genuinely interested in the interviewee's perspective'* (Greener, 2008). Consequently, all the comments collected have been attached in Appendix C.

Last but not least, the respondents were thanked for their participation and rewarded with a small gift, a sticker of Gotland.

Thank you very much for your participation in this survey. As a small "thank you", we hope you will enjoy our small gift.

Having discussed the three questionnaire sections, the following subchapter is to identify the number of responses that are needed to be obtained in order to reach desired survey representativeness. The number of questionnaires that needed to be handed out is detected as well.

3.2 Determining the sample size

The sample size is an important feature of any empirical study, in which the goal is to make inferences about a population from a sample. The individuals in the sample representing the whole population are further referred to as a 'proportion' as the term proportion implies the fraction of the total that possesses a certain attribute (a sample of tourists). According to Townend (2002), it is impossible to be certain what the best sample size to use would have been. It only is after the study has been carried out, therefore, most methods for estimating the best sample size require us to estimate how variable we expect the populations to be. In practice, it is recommended to use methods that have been used in a similar way by other researchers. Thus, a number of respondents given in the related surveys overview in Chapter 2 will be considered for the current study as well. For instance, we know that almost 600 respondents were interrogated in the study from Quebec.

As Feurst (2009) suggests "when you increase the number of answers, you somewhat increase the level of certainty, but of course it costs more". Therefore, after the desired number of responses has

been reached, the data collection may continue for longer in order to secure the certainty. Although Townend (2002: 49) adds that larger sample size may provide us with stronger evidence of the same phenomenon.

To determine the sample size, this study has assumed a standard normal distribution and a confidence interval of 95%. This is standard statistical practice for survey data as per Malhotra et al. (2012), Pedersen (2011), Feurst (2009) or Jankowicz (2005) among others. Therefore, the formula for estimating the sample size, which is based on sample error *E* around estimates of proportions, is:

$$E = z\sqrt{\frac{p(1-p)}{n}}$$

Equation 1. Sample error.

where

E is the sample error in percentage,

z is the level of confidence in an absolute number,

p is the estimated proportion, between 0 and 1,

n is the sample size needed in an absolute number (Malhotra et al., 2012).

The value of *z* is based on the given or chosen level of confidence of 95%, which implies a z-value of 1.96. The value of *p* is the estimated proportion (pre-study estimate of the proportion) and *n* is the sample size needed. Given the *z* value $1.96 \approx 2$, we arrive at:

$$n = \frac{(2)^2 p(1-p)}{E^2}$$

Equation 2. Sample size.

Since this study deals with discrete data, the minimum sample size *n* required for estimating a proportion with a 95% confidence can be calculated using the following formula (Equation 3). We specify the confidence interval *d* with a +/- percentage point spread about the proportion we are estimating.

$$n = \left(\frac{2}{d}\right)^2 (p)(1-p)$$

Equation 3. Sample size for discrete data.

The *2* in the formula is the factor that provides the 95% confidence in the estimate of the proportion based upon the minimum sample size from the formula. A d-value of 0.05 means that the probability

of the difference having happened by chance is 0.05 in 1, which corresponds to 1 in 20. Since we are uncertain, the statistically conservative proportion to use is 50%, or a p=0.5. If the value of p from the sample becomes different, the margin of error will be smaller, which means that the worst case scenario will be calculated (Malhotra et al., 2012). We apply these chosen variables into Equation 3:

$$n = (2/0.05)^2 (0.5) (1 - 0.5)$$
$$\underline{n = 400}$$

As per the formula above, we require a minimum sample of 400 participating tourists.

After having determined the sample size, two statisticians Ekštein and Veselý (2013) have validated the figure of 400, which was also additionally approved by the marketing manager of Destination Gotland Per Evensen. Moreover, based on Table 1 given in the literature review, it has been proven that the number of interviewed tourists in other surveys is similar, i.e. ranging from 180 to 599 interviews.

Oppenheim (1968) cited by the University of Leeds (2013) mentions that to determine the sample size it is usual to work back from how many responses, meaning completed questionnaires, are required for the analysis – in our case we deal with 400. This number should be modified by the anticipated response rate to determine the target sample size. As it is rather common for survey response rates to be around 20%, it is recommended approaching five times as many tourists as the number of questionnaires we wish to be returned complete, i.e. 400 multiplied by 5. For the purposes of our survey, we assume that to obtain 400 responses, it will be needed to approach approximately 2,000 tourists.

As per common statistical practice when reporting the results of a statistical survey, we need to include the margin of error (Malhotra et al., 2012, Pedersen, 2011). As mentioned in Equation 4, the general formula for the margin of error for a sample proportion is:

$$z = \sqrt{\frac{p(1-p)}{n}}$$

Equation 4. Margin of error.

where

p

is the sample proportion, n is the sample size, and z is the appropriate z-value for the desired level of confidence, i.e. 1.96. The margin of error for results for our three objectives will be given in Chapter 4.

3.3 Reasoning behind the methodology

As the primary objective of the current survey is to learn about tourists' standpoints about wind turbines on Gotland, a paper questionnaire has been selected as a suitable tool to accomplish the goals of the research project. The questionnaire also allows standardizing our questioning to such an extent that a more numerate, statistically-based analysis is possible.

As all research methods, questionnaire has certain advantages and disadvantages. According to Jankowicz (2005), the main drawbacks of a questionnaire are that the format of questionnaire design complicates the examination of complex issues and opinions. Where the researcher is not present, it is challenging to know whether or not a respondent has understood a question properly. Moreover, it is not clear if the questions asked mean the same to all the respondents as they do to the researcher (Jankowicz, 2005). That goes hand in hand with the fact that a questionnaire assumes respondents have answers available in an organized fashion. It is also impossible to check the seriousness or honesty of respondents' answers and lastly, there is need for brevity and relatively simple questions.

On the contrary, the main positives are that a questionnaire permits to cover a significant number of respondents rather quickly, it allows respondents to think longer about their responses, it is anonymous and less costly to administer. Gillham (2007) adds that questionnaires avoid interviewer bias and offer a straightforward analysis of answers to closed questions.

Having considered a questionnaire as an appropriate research method for the current project, a fully structured questionnaire has been selected as the questionnaire content, layout, question sequence and answer format were possible to determine in advance. Consequently, the respondent could not deviate from a set pattern, in which all respondents received a standardized list of questions (Shao, 1999; Gillham, 2007).

3.4 Research procedure: data collection

The data collection commenced with piloting the intended survey. Regarding the procedural changes indicated in chapter 3.1, the following procedural amendments were introduced after the pilot study. Fundamentally, insufficient sampling was identified and improved. The deficiency was detected during the pilot data analysis when a number of questionnaires were completed identically by 'cluster' groups, for instance, families, couples or a group of teenagers who visited Gotland for confirmation purposes. A similar phenomenon appeared with respondents queuing in the car terminal. In other words, when all passengers in one car filled in the questionnaire individually, significant overlapping and/or identical responses were detected. Therefore, to maintain an unbiased, representative and impartial approach, such cluster effects were avoided in the course of the real study.

Not only did it show advantageous to test the data analysis, which was intended for carrying out the main study, but the selected approach also proved effective while a time-efficient method of entering the data into Excel was established. No major discrepancies between the pilot and real studies have been identified, however, if there is a point worth commenting, it is discussed in Chapter 4.

Thus, in the course of July 2013, field research was carried out in Visby by the author of this paper, in the area of the ferry terminal Destination Gotland, where the leaving visitors with or without cars queue to board on the ferry. The month of July was selected for data collection based on the following information given in Figure 14. The number of tourists coming to Gotland in July 2010 as per number of travellers per month 2010 reached 400,000. The population size of 400,000 travellers also included local residents as well as tourists. Based on updated information by Destination Gotland and Swedavia (2013), the number of travelling residents (this number excludes travellers having a summer house on Gotland) is approximately 50,000, which is deducted from 400,000. In result, the population of tourists per July reaches 350,000.

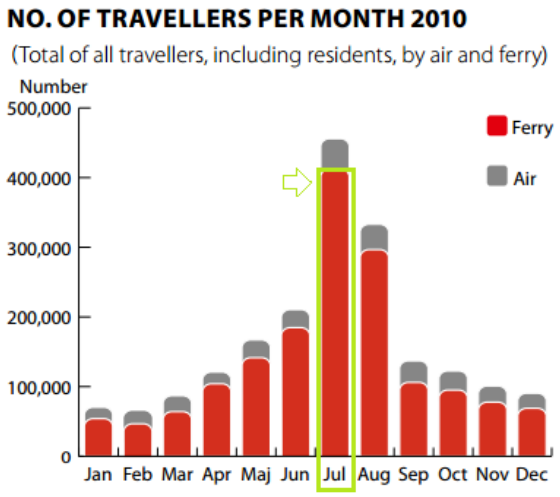


Figure 14. Number of travellers per month over 2010. Source: Region Gotland, 2012.

Both groups of passengers travelling with or without a car have been interviewed. The current research consisted of a standardized questionnaire survey of tourists in the study area. The challenge to distinguish tourists from other passengers, e.g. local residents, has been resolved by the introductory line:

Excuse me. I have got a questionnaire for tourists. (Have you been a tourist on the island?) --- Would you like to fill it in?

Tourists leaving Gotland on a plane have not been taken into account as the ferry terminal provided ideal conditions for the survey. Moreover, merely a small part of tourists travel from Visby by a plane.

As indicated in Chapter 1, the absolute majority of visitors coming to Gotland are of Swedish origin, therefore the primary language of interaction was Swedish.

Approximately every fourth respondent was interested to know the subject matter of the questionnaire. According to Gillham (2007), there is a curious convention that if the researcher tells respondents the subject of the survey, this will cause bias. However, in the current research, when the respondents were informed about the subject of the survey, i.e. wind power and tourism, it made the respondents more cooperative, which supports Gillham's hypothesis about respondents being more helpful.

The aim of the data collection was also to include approximately equal gender representation, a complete age spectrum, and respondents both from Sweden and abroad. This was achieved by an everyday effort to distribute the questionnaire to an equal number of men and women together with data check in the middle of the data collection. The population from which the sample was chosen was defined as those under 18 and upwards.

During July there were five ferry departures daily, three leaving from Visby to Nynäshamn and two to Oskarshamn. Mondays, Wednesdays and Fridays tourists with cars were approached, while Tuesdays and Thursdays, tourists without cars were interviewed. Each boarding lasted approximately twenty minutes, during which a conservative guess of receiving back ten fully completed questionnaires was estimated. Following this method, minimum ten filled in questionnaires per departure were accomplished with the maximal number reaching 38 completed questionnaires.

It is worth noting that higher numbers of completed questionnaires were acquired when tourists with cars were interviewed as these had to wait longer in queues to board and were more captured in comparison to tourists without cars who tended to be more in a hurry to board. However, when surveying the latter group, greater national variety was detected. Additionally, in the latter group, women were more cooperative to complete the questionnaire, for when surveying tourists with cars, it was commonly men who drove the car and therefore tended to fill in the questionnaire.

On average, every fifth person declined to complete the questionnaire. Each questionnaire completion lasted approximately 5 minutes. In total 743 responses have been acquired, of which 8 questionnaires were not fully completed, and therefore not used for final analysis.

3.5 Ethical considerations

As our survey deals with human beings, special rules apply. Therefore firstly, a copy of appropriate ethical guidelines was obtained, i.e. Gustafsson, B. et al. (2011) *Good research practice* by the Swedish Research Council recommended by Uppsala University Campus Gotland. Next, the guidelines were applied to the survey as explained in Section 3.1.1 in terms of anonymity and voluntary participation. Moreover, during the interaction with respondents no one was forced to fill in the questionnaire or pressurized into continuing. The participants were informed of the nature of the survey in a language they understood and anonymity was preserved.

3.6 Conclusion

The current chapter on Methodology addressed the method, through which the current survey was conducted so that the research could be replicated in the future, if necessary. The process of designing the questionnaire was discussed; the reasoning of the selected questions included in the questionnaire was given, the sample size was determined, and the procedure of collecting the data and ethical considerations were provided.

Reviewing the studies in Chapter 2 facilitated the design of our methodology so that the survey addressed the objectives as precise as possible. The data collected through the questionnaire were intended to achieve the thesis goals, i.e. in discovering how tourists perceive wind turbines in the landscape, the impact of wind turbine presence on tourists' decision to return to the island and the level of tourists' interest in visiting a wind farm as a tourist attraction.

Chapter 4 delivers the results, describes how the obtained data was analysed, and what types of inter-relations have been observed.

4 Analysis of data

4.1 Introduction

Having established methodology for the current survey in Chapter 3, Chapter 4 presents patterns of results and analyses them for their relevance to the research questions. The current chapter is restricted to presentation, analysis and interpretation of the collected data, without drawing general conclusions or comparing results to those of other studies, which were discussed in Chapter 2.

4.2 Subjects

The subjects of the data collection have been tourists leaving Gotland in the course of July 2013. The field research was carried out in Visby, Sweden, in the area of the ferry terminal Destination Gotland, where visitors with or without cars queue to board the ferry.

Approximately equal gender representation was included together with a complete age spectrum, and respondents both from Sweden and abroad. The aspect of respondents' education was not a priori controlled since certain studies, for instance Frantal and Kučera (2010), proved that education does not have a significant effect on opinion differences.

The population, from which the sample was chosen, was defined as those of under 18 and upwards, with taking into account how long the tourist spent on the island, and where, if applicable. Data collection for the full-scale study took place from 1 July to 31 July 2013 by the author of this paper.

Tourists leaving Gotland on a plane have not been taken into account as the ferry terminal provided ideal conditions for the survey. Moreover, rather insignificant ratio of tourists travels from Visby by a plane (as per Figure 14).

In result, total 743 responses have been acquired, of which 8 questionnaires were not fully completed, and therefore not used for the final analysis. Consequently, the total number of filled in questionnaires is 735.

4.3 General overview of the data question by question

Similarly to section 3.1.2, in which each question listed in the questionnaire has been described and accounted for, in the current chapter, the results of each question are presented.

By asking Question 1, it was intended to discover whether tourists were rather returning visitors or first-time comers. That is relevant as the more first-time comers there are, the more it matters to be aware of the impact of the presence of wind turbines on tourists' decision to return.

As Figure 15 demonstrates, first-time comers prevail in the category of number of visits to Gotland. 328 out of 735 respondents have visited Gotland for the first time, followed by the second group of respondents who have returned to the island more than five times (128 out of 735). Further, the third place is occupied by having visited Gotland 'twice' (100 out of 735), 'three times' (65 out of 735), 'four times' (56 out of 735), 'five times' (55 out of 735) and 'not stated' (3 out of 375).

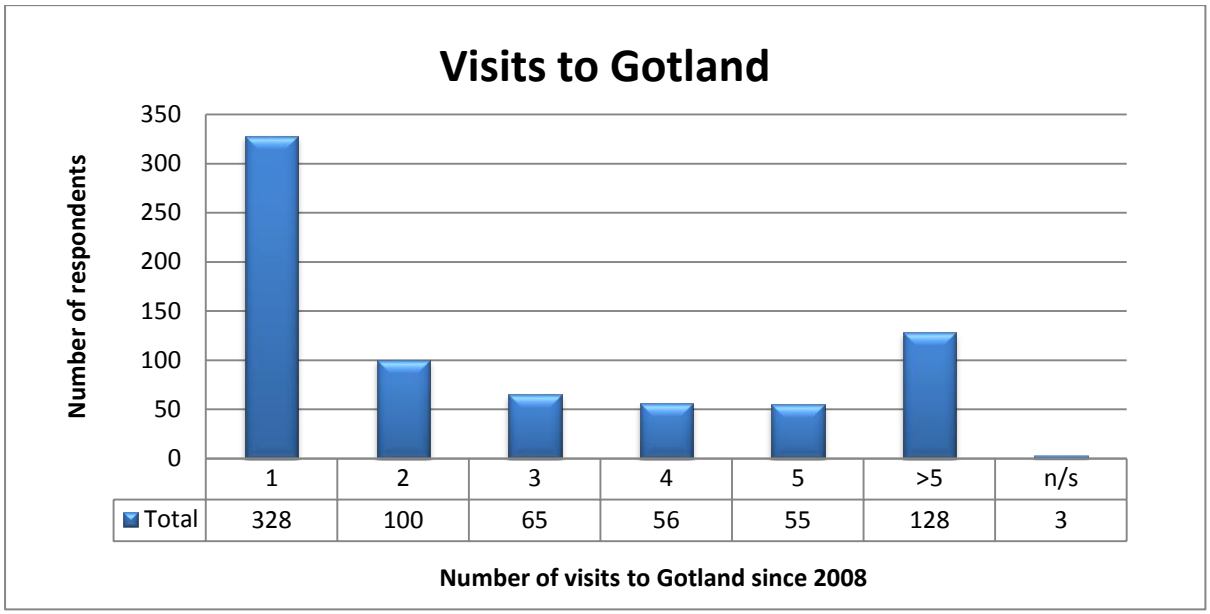


Figure 15. Results of Question 1.

Since the group of first-time comers is dominant, it is of great importance to address the second objective of the current project, i.e. to assess whether tourists plan to return to Gotland despite having observed wind turbines.

Regarding Question 2, it has been assumed in Section 3.1.2 that if the purpose of visit is 'nature', the respondents are expected to be sensitive towards objectionable interferences of wind turbines on the landscape character and visual impact of wind turbines. Yet 'nature' has not been selected as the prevailing purpose while mere 62 out of 735 respondents chose 'nature' as the main reason for having visited Gotland. However, one should bear in mind that the prevailing reason for visit, i.e. 'multiple', includes more than one reason selected. As no deep analysis of the category 'multiple' has been conducted, it is beyond the scope of the current chapter to provide an exact number of 'nature' ticks within the category 'multiple'.

The category 'multiple' was not included in the questionnaire itself, but introduced by the author in the course of the data entry due to re-occurring phenomenon when respondents selected more than one main reason for the visit. Primarily, respondents selected various combinations of reasons, starting with combining two ranging up to ticking all options. As demonstrated in Figure 16, the category 'multiple' is therefore dominating (206 out of 735 responses), closely followed by 'family & friends' (184 out of 735). 'Seaside & weather' occupies the third place in the results of Question 2

followed by ‘other’ (65 out of 735). ‘Other’ choice involves for instance summer house, wedding, orienteering, holidays, and sport such as horse-races, cycling or golf. ‘Business/conference’ (46 out of 735) and ‘culture & history’ (42 out of 735) categories occupy the last two places as the main reason.

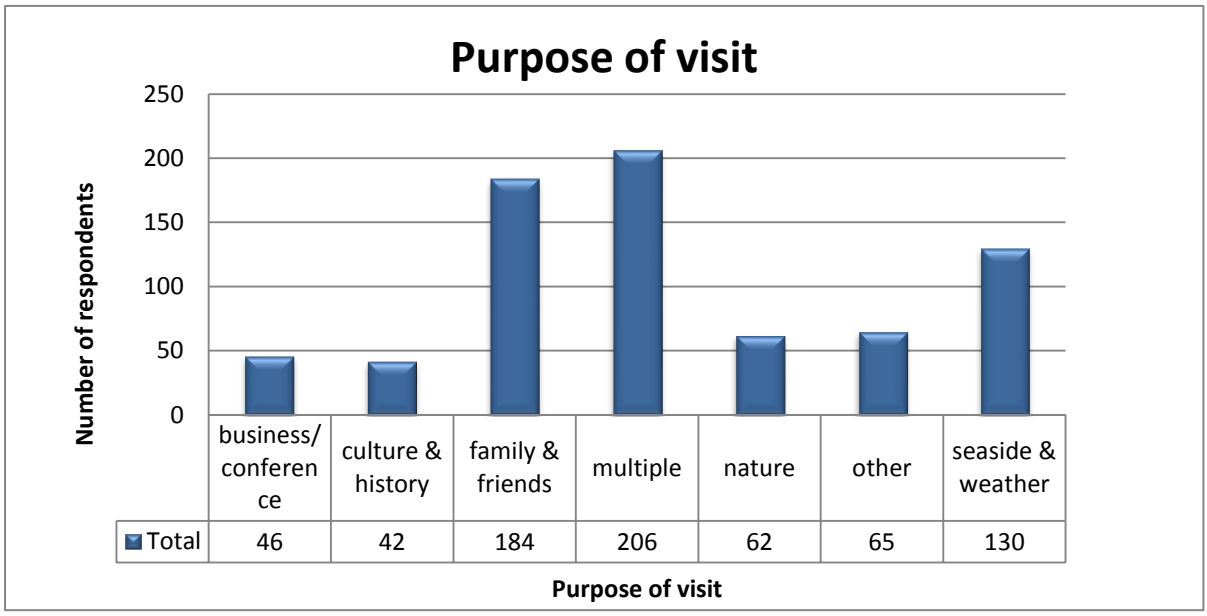


Figure 16. Results of Question 2.

The aim of Question 3 was to identify the most frequent length of stay. The group of ‘day trip only’ encompasses mere five respondents (out of total 735), which is advantageous for the current study as the information provided by visitors who stayed less than 24 hours could not be included into the significant representative information. Therefore, five responses have been considered negligible.

Contrariwise, the absolute majority of respondents stayed ‘4 – 7 days’ (406 out of 735), followed by ‘>7 days’ (221 out of 375) and ‘1 to 3 days’ (101 out of 735). Only two respondents did not state the length of stay. Figure 17 illustrates the overall view of the length of stay.

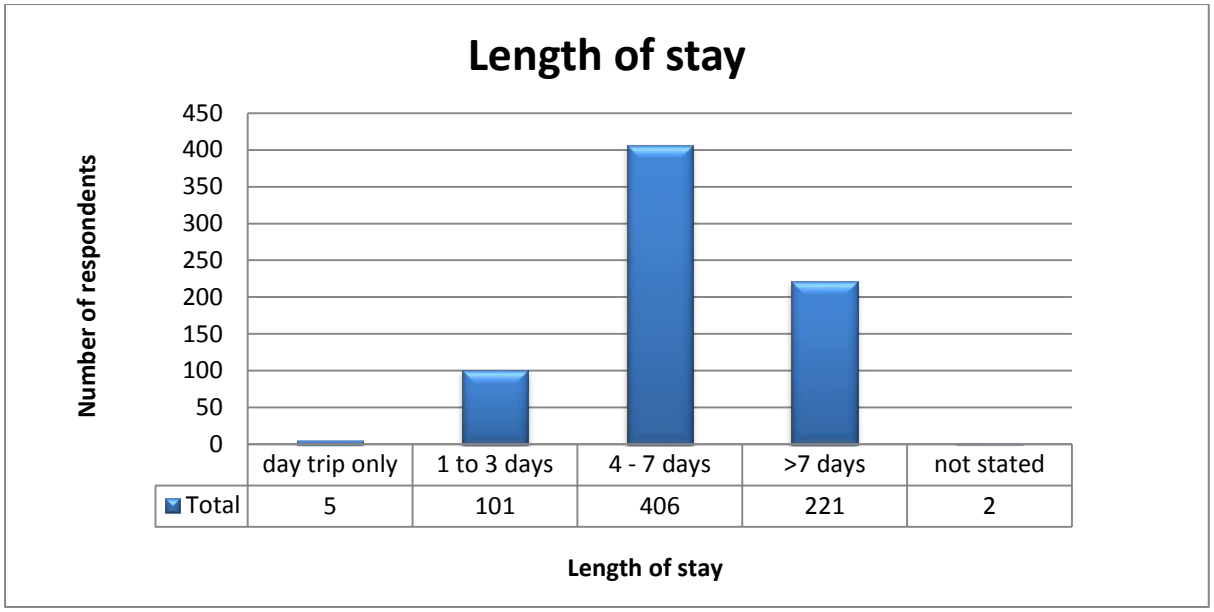


Figure 17. Results of Question 3.

As mentioned in Section 3.1.2, Question 4 aims at identifying potential exposure to wind turbines from the accommodation perspective. It was assumed that tourists that were camping or had their own accommodation, most likely a summer house, or stayed with their family and friends, were more likely to be exposed to wind turbines and had therefore more distinct opinion on wind turbines on Gotland.

Yet Figure 18 suggests that 'summer houses/cabins' have been selected most frequently (229 out of 735) while 114 (out of total 735) respondents camped. 'Other' (195 out of 735) type of accommodation and 'hotel/hostel/guest house' (162 out of 735) were more dominant than camping while 'multiple' (34 out of 735) type of accommodation was the least frequent. Similarly to Question 2 results, category 'multiple' was not included in the questionnaire, but introduced during the data entry. 'Multiple' implies that respondents ticked more than one accommodation option and combined more types, ranging from two to indicating all options. Additionally, category 'other' involved for instance staying with family & friends/relatives, own flat/house, campervan/caravan, eco village or forest. One respondent did not state the accommodation, which is considered negligible.

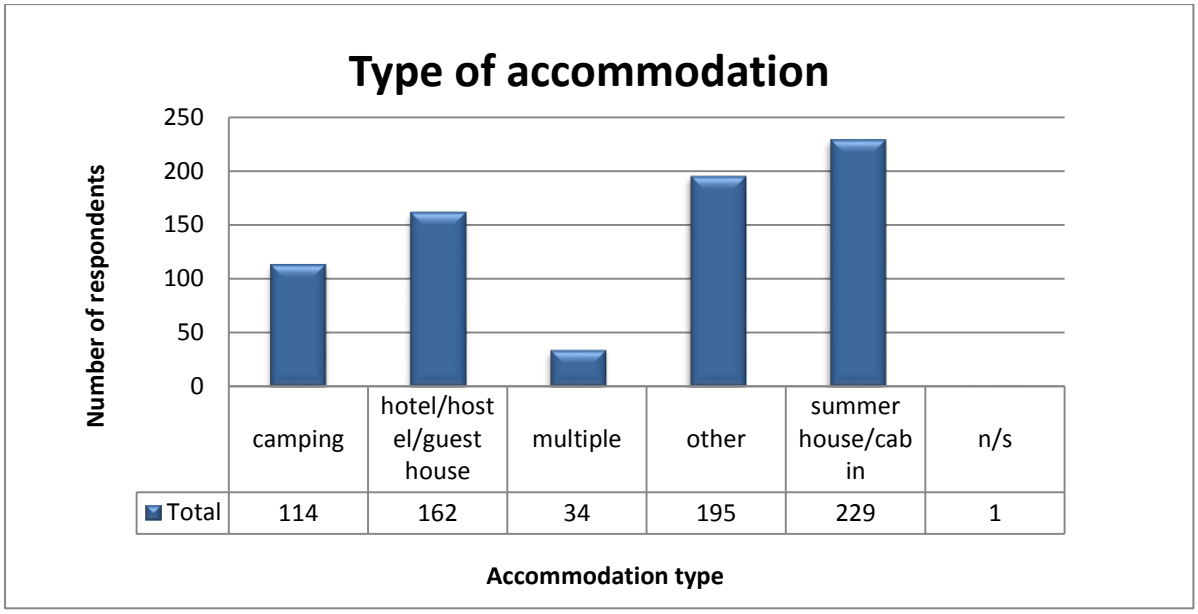


Figure 18. Results of Question 4.

Question 5 is regarded vital as the number of tourists who have observed wind turbines in the landscape matters for the current study as such respondents were able to share their impression of wind turbines, which addresses the first objective of the survey, i.e. how tourists perceive wind turbines.

As a result, Figure 19 shows that 611 tourists (83%) of the total of 735 respondents saw wind turbines during their stay on Gotland, 111 tourists (15%) of the respondents did not see any while 13 tourists (2%) were unsure.

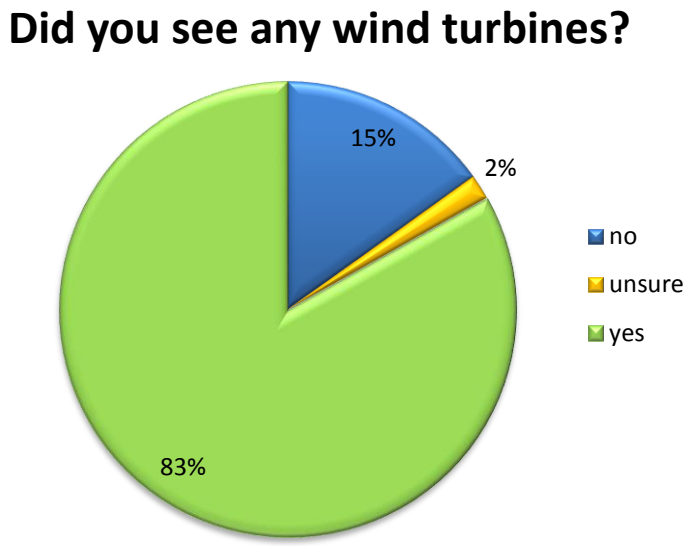


Figure 19. Results of Question 5.

Figure 20 is recommended to consult carefully as it is a result of the whole group of respondents. In other words, distinction between respondents who did or did not see wind turbines has not been done at this stage. Thus, having this point in mind, the overall picture suggests that 55% of respondents' impressions of seeing wind turbines on Gotland are positive, 31% neutral, 7 % negative, 1% did not state and 6% were not applicable. Addressing the first goal of the survey is further analysed in Section 4.3.1.

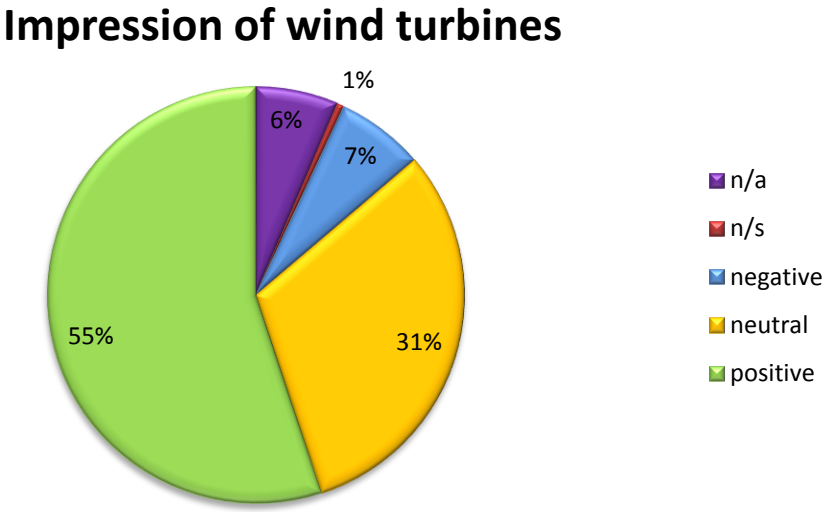


Figure 20. Results of Question 6.

Questions 7a and 7b are worth observing simultaneously as Figure 21 demonstrates. Respondents' change of attitude to wind turbines before and after the visit can be detected as insignificant. Sixty-two per cent of respondents were positive before the visit while 61% were positive after the visit, 33% of respondents were neutral before the visit while 32% were neutral after the visit, 5% of respondents were negative before the visit while 6% of respondents were negative after the visit. Negligible ratio of respondents did not state their attitude. Yet drawing any distinct conclusions is not desired in this case as margin of error of 1.6% applies[3] and therefore, the 'differences' fall within natural statistical variations.

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3 $E = z\sqrt{\frac{p(1-p)}{n}}$ ……formula for calculating margin of error E
z……1.96
p……39 (negative respondents before visit) ÷ 735 (total number of respondents)…….. ≈ 0.05
n……735
E……1.6%

The margin of error applies to the 5% of respondents with negative attitude (before visit) and 6% (after visit) as per Figure 21. Thus, 5% +/- 1.6% belongs to the range of 3.4% to 6.6% while 6% +/- 1.6% equals to the range of 4.4% to 7.6%. As the two ranges overlap, we deal with a natural statistical variation.

Additionally, the overview is general with all respondents being mixed and not dividing their distinct responses or whether they did or did not see wind turbines. In other words, tourists who were, for instance, neutral before the visit did not necessarily stay neutral after the visit and so forth. Deeper analysis follows in Section 4.3.1.

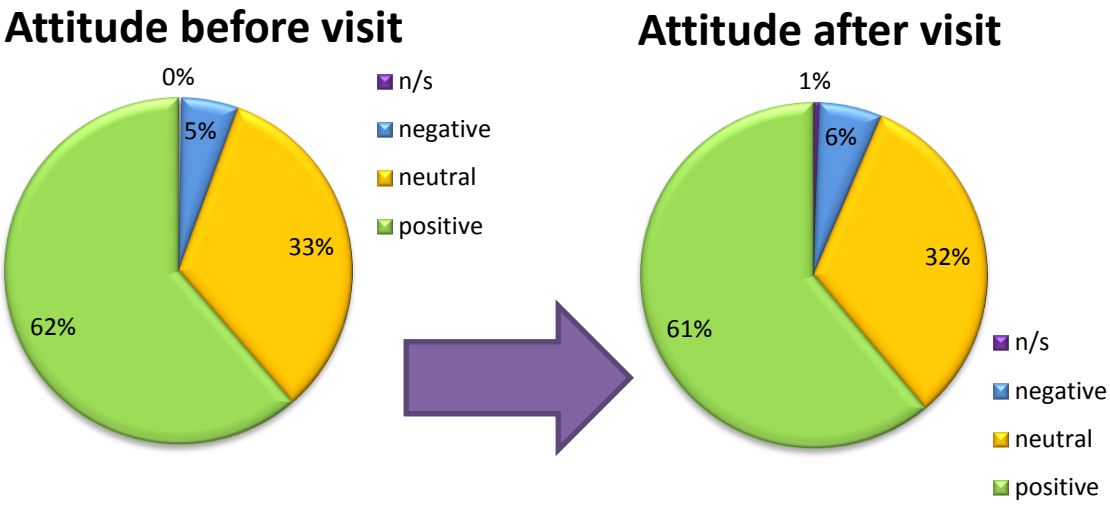

Figure 21. Results of Questions 7a and 7b.

The results contributing to addressing the second objective of the survey have been presented in Figure 22. It is again an overall vision of all respondents together whereas deeper analysis is carried out in Section 4.3.1. 'Positive' impact of the presence of wind turbines has been stated by 18% of respondents, 'no impact' by 76% and 'negative' impact has been selected by 2%. Four per cent of respondents were 'unsure' about the impact while negligible ratio of tourists did not state the impact.

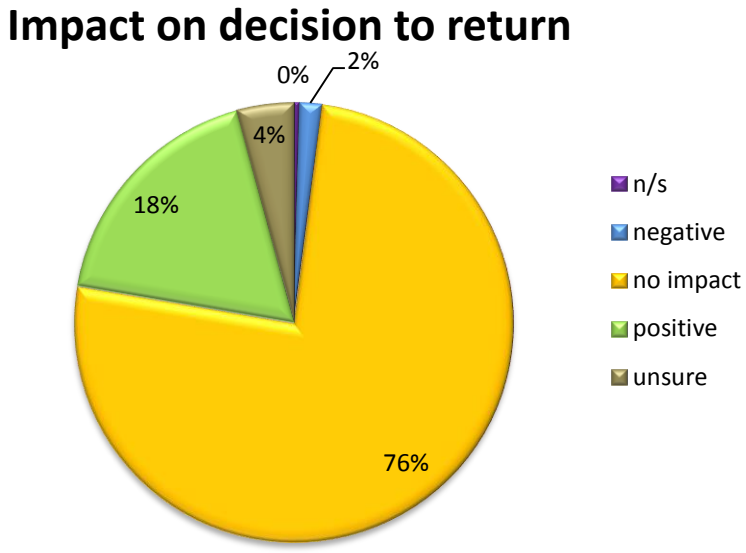

Figure 22. Results of Question 7c.

The third objective of the survey has been tackled by Question 7d, whose results are shown in Figure 23. Twenty-four per cent of respondents would be interested in visiting a wind farm as a tourist attraction, 44% selected ‘no’ while 32% stated ‘maybe’. Negligible ratio (4 out of 735 respondents) did not state their stand point.

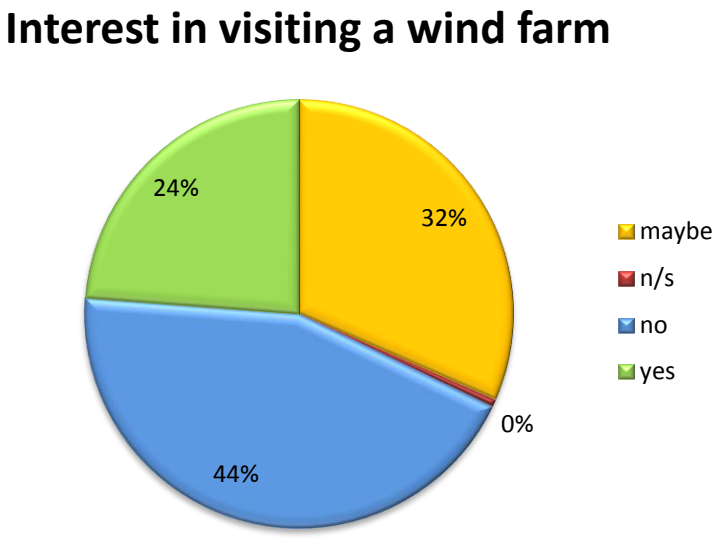

Figure 23. Results of Question 7d.

Figure 24 illustrates gender distribution in the conducted survey. ‘Males’ represent 55% of all 735 respondents while ‘female’ 40%. Five per cent of the respondents did not state their gender or selected both as they filled in the questionnaire as a couple together. However, the results of the pilot study were more equal gender wise (49% female, 48% male, 3% ´not stated´) as insufficient sampling was performed during the test study. As explained in Section 3.4, certain procedural changes might be the reason for the slightly more uneven gender distribution in the real survey.

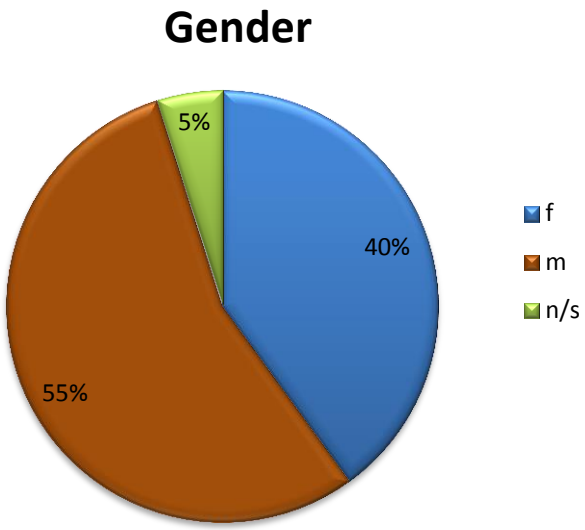

Figure 24. Gender distribution in the survey.

Regarding the national distribution, as suggested in Section 1.1.1, Swedish nationals prevail (646 out of 735). Foreign visitors identified themselves mainly as Norwegians (19 out of 735), Germans (13 out of 735), Finnish (9 out of 735) and Danish (8 out of 735). Category 'other' includes for instance the USA, Switzerland, France, Spain or Japan. Nineteen (out of 735) respondents did not state any country they would identify themselves with or contrariwise, selected more than one country (as per Figure 25).

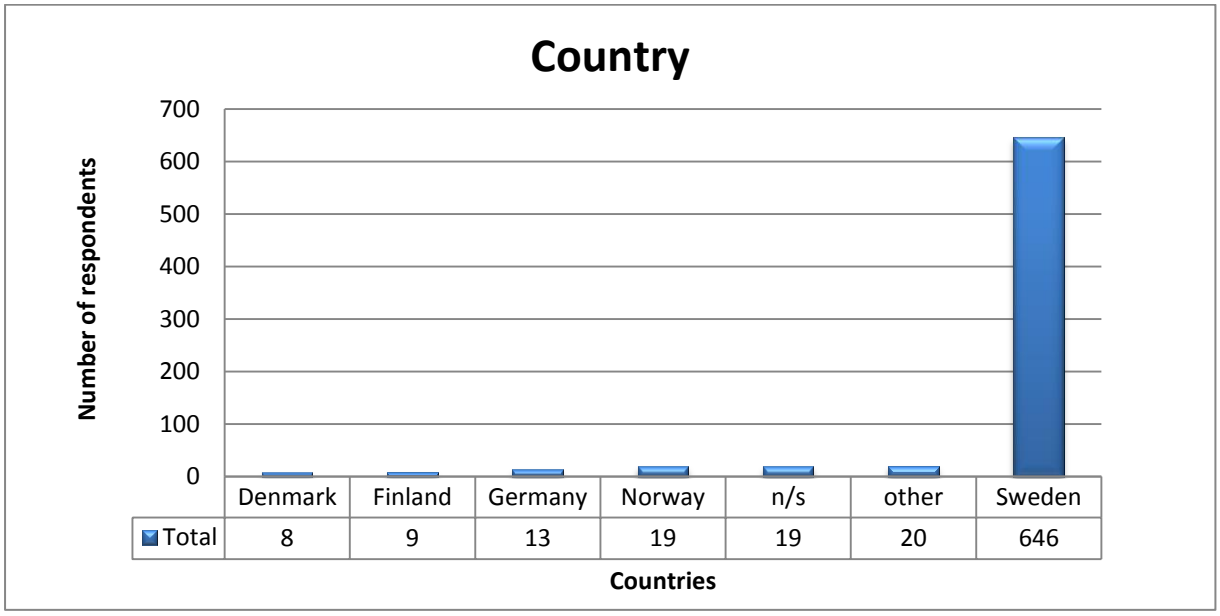

Figure 25. Country distribution in the survey.

Figure 26 illustrates the age distribution in the survey. The majority of respondents (432 out of 735) fit into the category '31 – 55' followed by 'over 55' (212 out of 735), '19 – 30' (67 out of 735) while mere twelve respondents were 'under 18'.

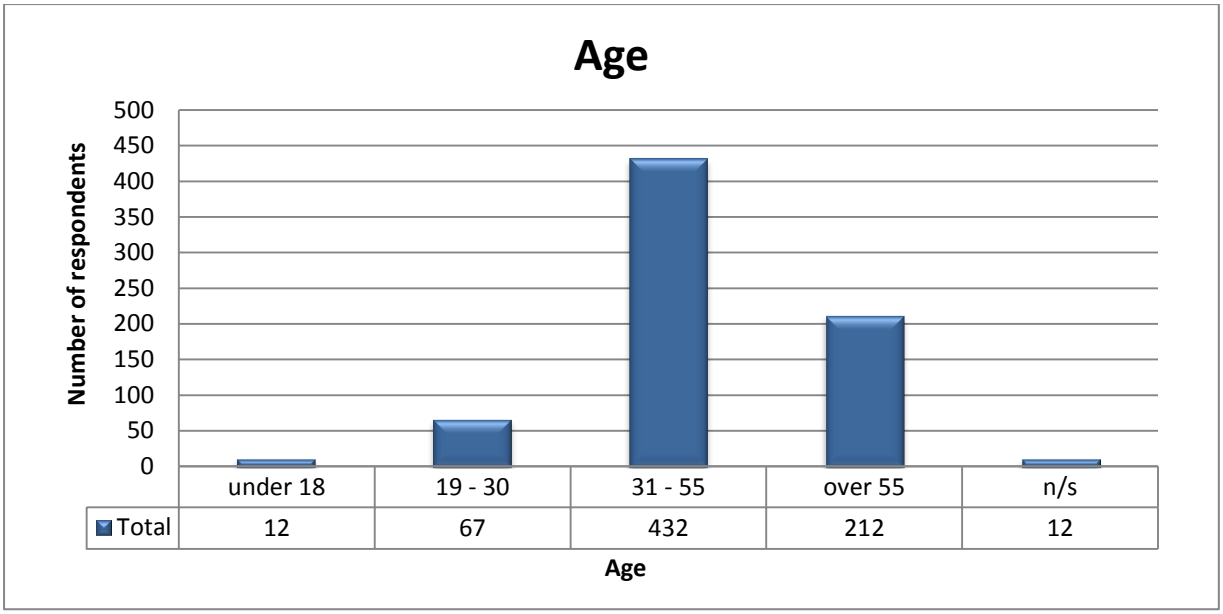

Figure 26. Age distribution in the survey.

Lastly, regarding the 'Any comments?' section, 79 out of 735 respondents expressed their opinion, wish, concern, impression, or recommendation. All the comments can be found in Appendix C.

In general, respondents´ comments may be summarized into the following categories: noise, wind turbines location or the decision about their deployment, birds, wind turbines as visual nuisance, Swedish subsidies for wind energy, idle wind turbines, and a number of positive comments about renewable energy and benefits for the environment.

4.3.1 Results interpretation

In this section, three main objectives of the present study are being addressed by considering only the data, in which respondents claim having seen wind turbines on the island during the stay. In other words, based on Figure 9 it is known that 611 out of 735 respondents saw wind turbines on the island, therefore we will focus on this particular group of respondents only.

The first objective has intended to identify how tourists who have encountered wind turbines on Gotland during holidaying perceive wind turbines in the landscape.
The second objective relates to whether tourists plan to return to Gotland despite having noticed wind power installations, i.e. impact on tourists´ decision to return to the island.
The third goal is to establish whether wind turbines can become a tourist attraction so that tourists decide to visit wind parks for the sake of wind power experience and excursion, for instance through visitor centres.

Objective 1

The first crucial interrelation is between the respondents who saw wind turbines during their stay and their impression of wind turbines as per Figure 27, which suggests that 59% respondents were positive, 32% neutral, 8% negative and 1% did not state while the ratio of 'not applicable' is considered negligible.

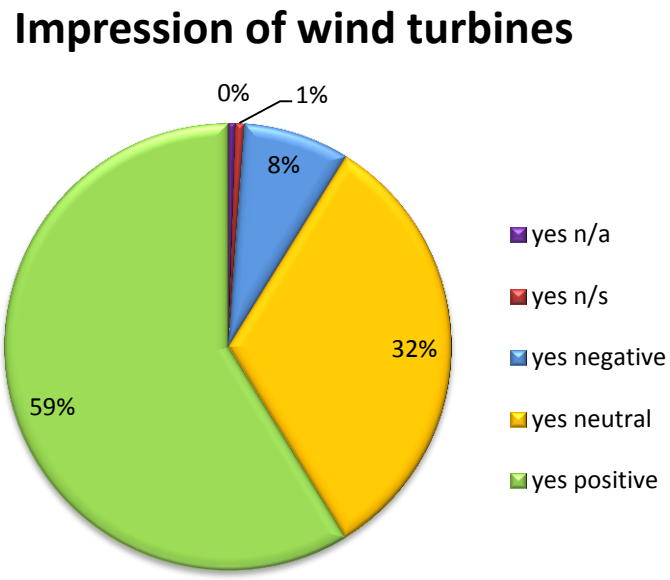

Figure 27. Impression of wind turbines by respondents who saw wind turbines.

To compare this 'yes, have seen' group of respondents to the whole group, we can see slight differences as per Figure 28. Yet drawing any distinct conclusions is not desired in this case as margin of error of 2%[4] applies and therefore, the 'differences' fall within natural statistical variations, which means that there is no statistical variation.

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4 $E = z\sqrt{\frac{p(1-p)}{n}}$ ……formula for calculating margin of error E
z……1.96
p……47 (negative respondents) ÷ 611 (total number of respondents)…… ≈ 0.08
n……611
E……2%

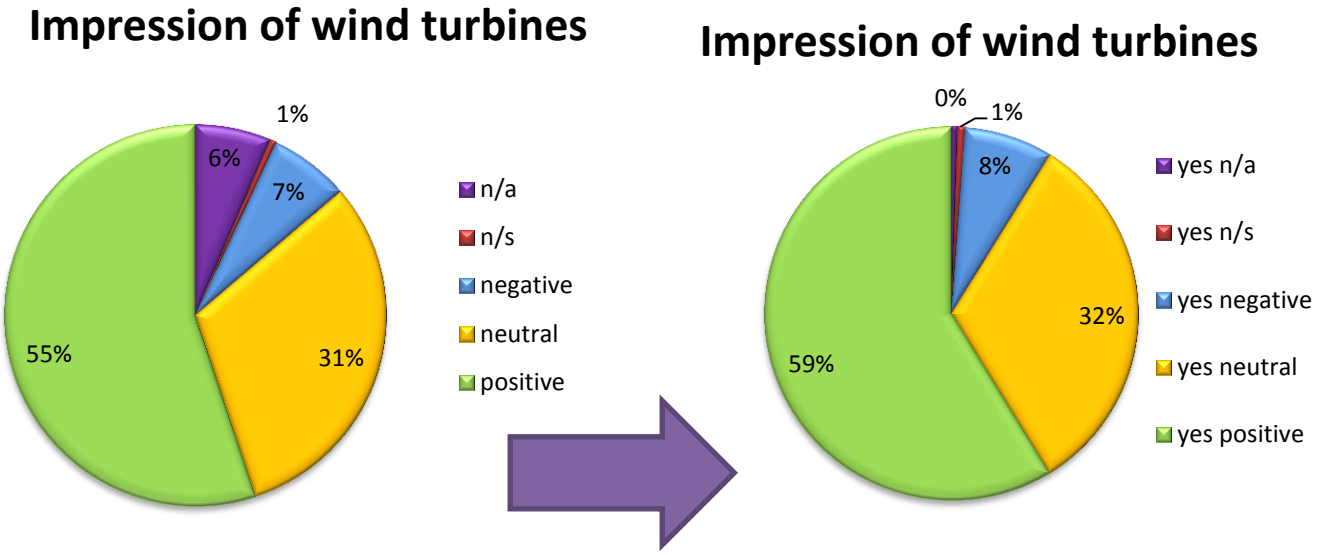

Figure 28. Impression of wind turbines: whole group of respondents vs. 'yes, have seen wind turbines' respondents.

Although 124 out of 735 respondents did not see any wind turbines or were unsure and therefore were supposed to select 'not applicable (n/a)' in Question 6, a number of the respondents have shared their impression regardless. Information in Figure 29 is not considered to have as much weight as Figure 27, however, the information is respected and appreciated. As a result, Figure 29 demonstrates that respondents who did not see wind turbines still felt rather positive or neutral about the wind turbines. Tourists who were 'unsure' about seeing wind turbines show identical tendency, i.e. rather positive or neutral about wind turbines.

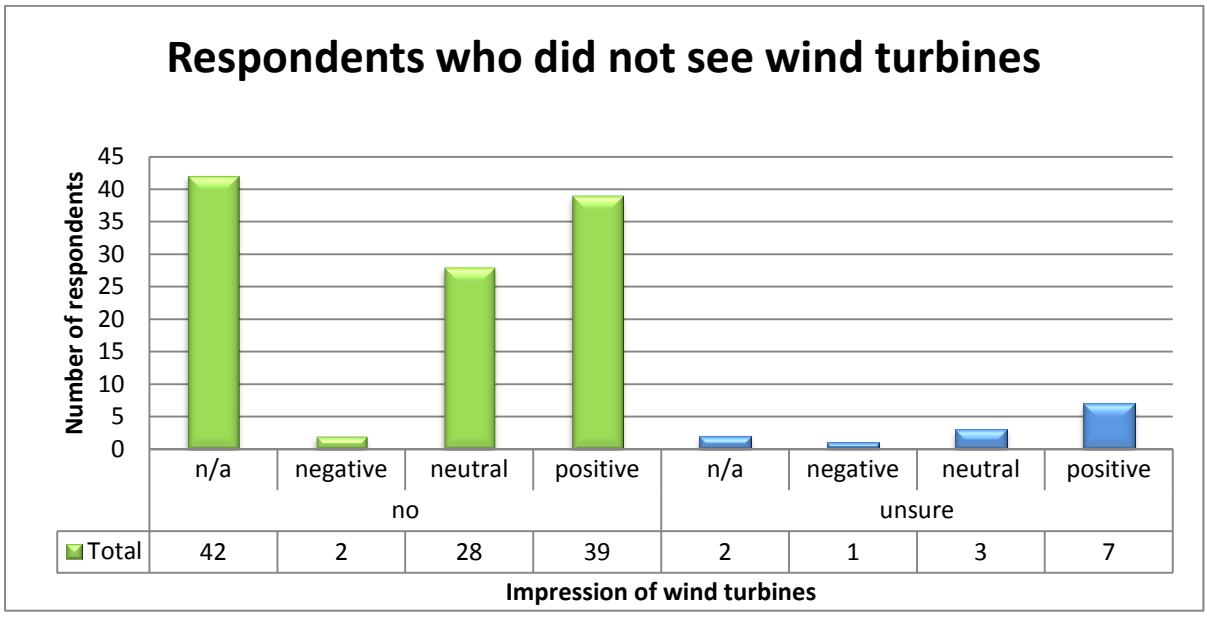

Figure 29. Impression of wind turbines by respondents who did not see wind turbines.

Lastly, the reasons for this 'error' - respondents sharing their impression despite not having observed wind turbines - vary. Firstly, the returning respondents might have referred to a previous visit, during

which the visitors noticed wind turbines. Therefore, we assume that the respondents have not seen a wind turbine this once, however, on the previous visits the participants probably saw wind turbines and therefore have the experience that they share in the questionnaire. Second reason for the aforementioned error is that Question 6 might have been misread and answered regardless.

Overall, as Figure 30 demonstrates, whether tourists have seen wind turbines or not, it does not affect the general impression of wind turbines in Question 6. In other words, whether tourists saw wind turbines, did not see or were ´unsure´, the group of respondents with positive impression prevails.

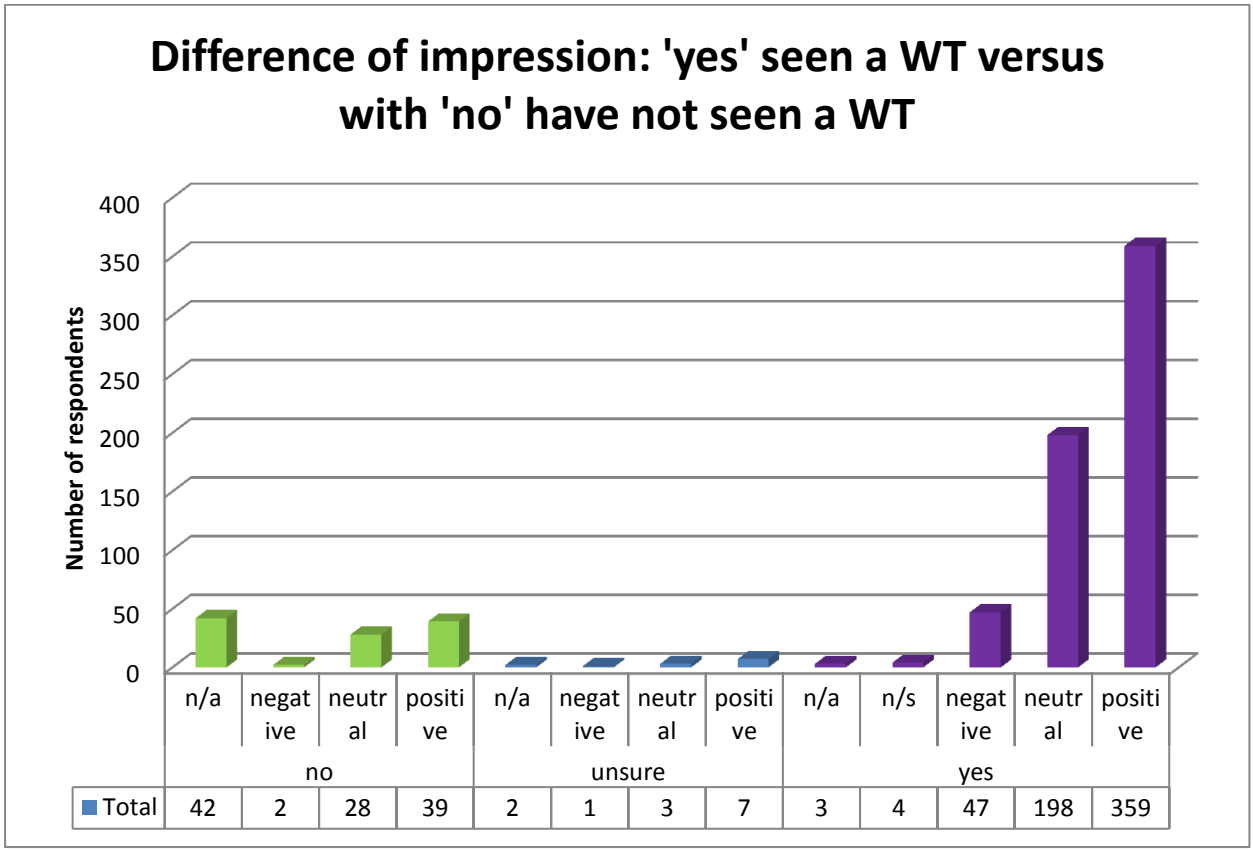

Figure 30. Overall view of respondents‘ impressions of wind turbines.

Looking at the impressions of wind turbines per purpose of visit, with a focus on ‘nature’, it can be concluded that respondents’ impressions do not significantly vary when assessing ‘nature’, ‘seaside & weather’ and ‘multiple’ as the purpose of visit. ‘Multiple’ has also been analysed as this category encompasses ‘nature’ in terms of purpose of visit. The category ‘nature’ implies that respondents selecting the category should be sensitive towards objectionable interferences of wind turbines on the landscape character and visual impact of wind power.

As per Figure 31, we can see that whether tourists´ motivation to visit Gotland was purely nature or combination of purposes, the percentages are rather consistent. Nature lovers show 10% negative impression of wind turbines (margin of error 2%), ‘seaside & weather’ 7% negative (with margin of

error of 3%) and ‘multiple’ 7% negative (with 3.6% margin of error). Considering the given margins of error and natural statistical variations, the differences seem to be rather minor.

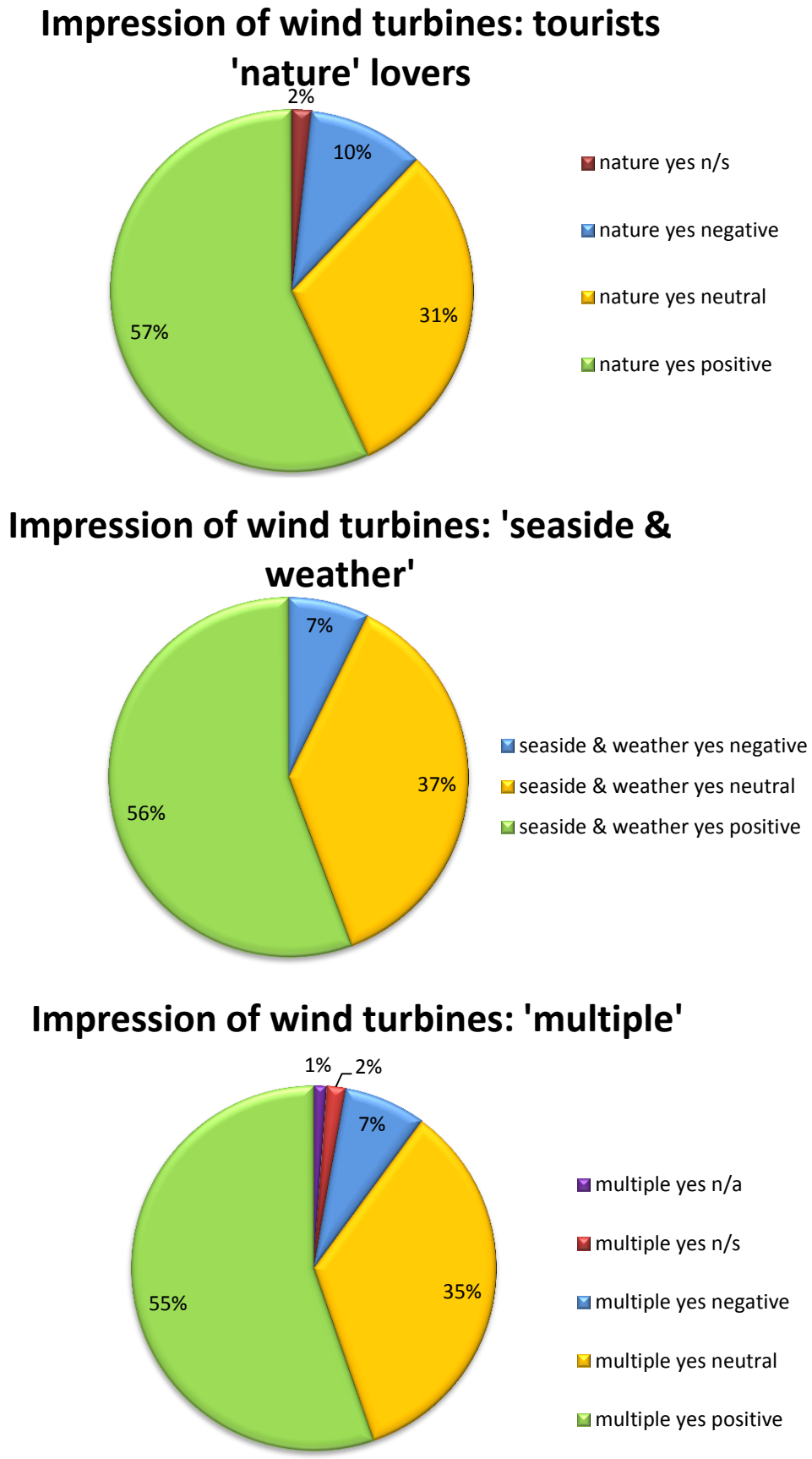

Figure 31. Impression of wind turbines by purpose of visit: nature, seaside & weather, multiple.

Looking at the impressions of wind turbines from the accommodation point of view, it can be concluded that respondents' impressions do not significantly vary when assessing the accommodation being 'camping' and 'summer house'. The categories 'camping' or 'summer house' imply that respondents selecting these categories were more likely to be exposed to wind turbines and had therefore more distinct opinion on wind power on Gotland.

As per Figure 32, respondents who camped show 6% negative impression of wind turbines (margin of error of 3%), respondents who stayed in summer houses were 9% negative (with margin of error of 3.7%). Considering the given margins of error and natural statistical variations, any comments on the differences can be merely intuitive. However, there is 7% difference in the respondents who stated positive impressions of wind turbines: 52% of positive campers including a margin of error of 3% result in 52% -/+ 3% (which corresponds to 49% – 55% respondents) and 59% of positive summer house dwellers including a margin of error of 3.7% result in 59% -/+ 3.7% (55.3% - 62.7%). From a statistical point of view, this difference is considered weak, however, we can still observe that summer house dwellers share more positive impressions of wind turbines (by 7%) than campers.

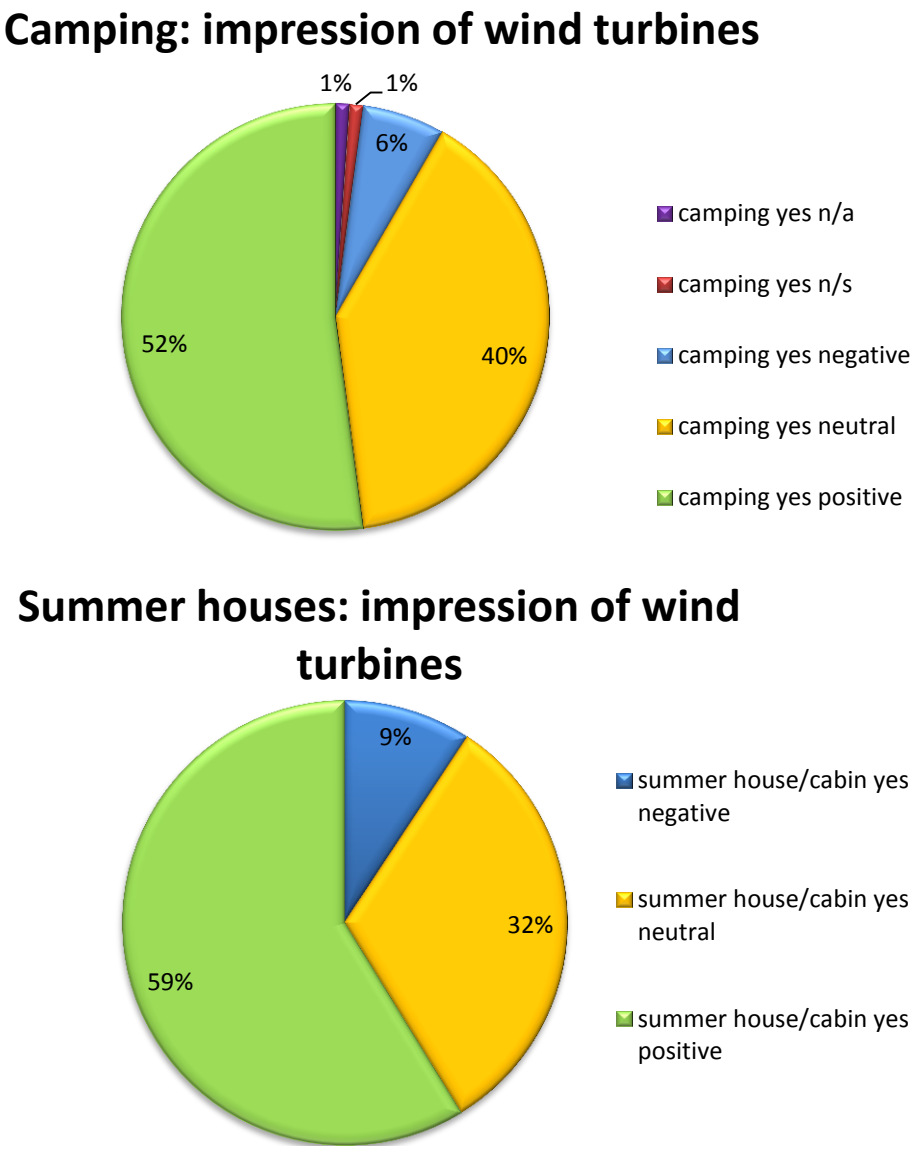

Figure 32. Camping and summer houses/cabins: impression of wind turbines.

Objective 2

The first crucial interrelation is between the respondents who saw wind turbines during their stay and the impact of the wind turbine existence on respondents' decision to return as per Figure 33. For 77% respondents there is 'no impact', 19% claim 'positive impact', 2% 'negative', 2% were 'unsure' while the ratio of 'not stated' is considered negligible.

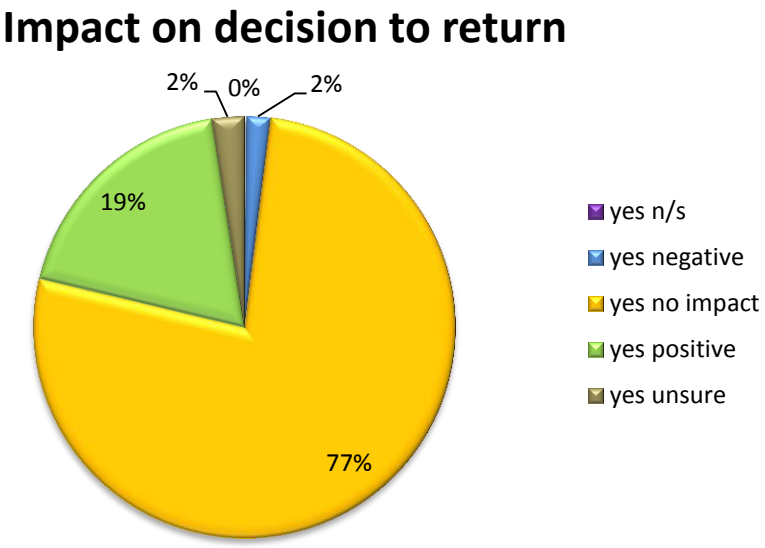

Figure 33. Impact on decision to return by respondents who saw wind turbines

To compare this 'yes, have seen' group of respondents to the whole group, we can detect insignificant differences as per Figure 34. Yet drawing any distinct conclusions is not desired in this case as margin of error of 1% applies and therefore, the 'differences' fall within natural statistical variations.

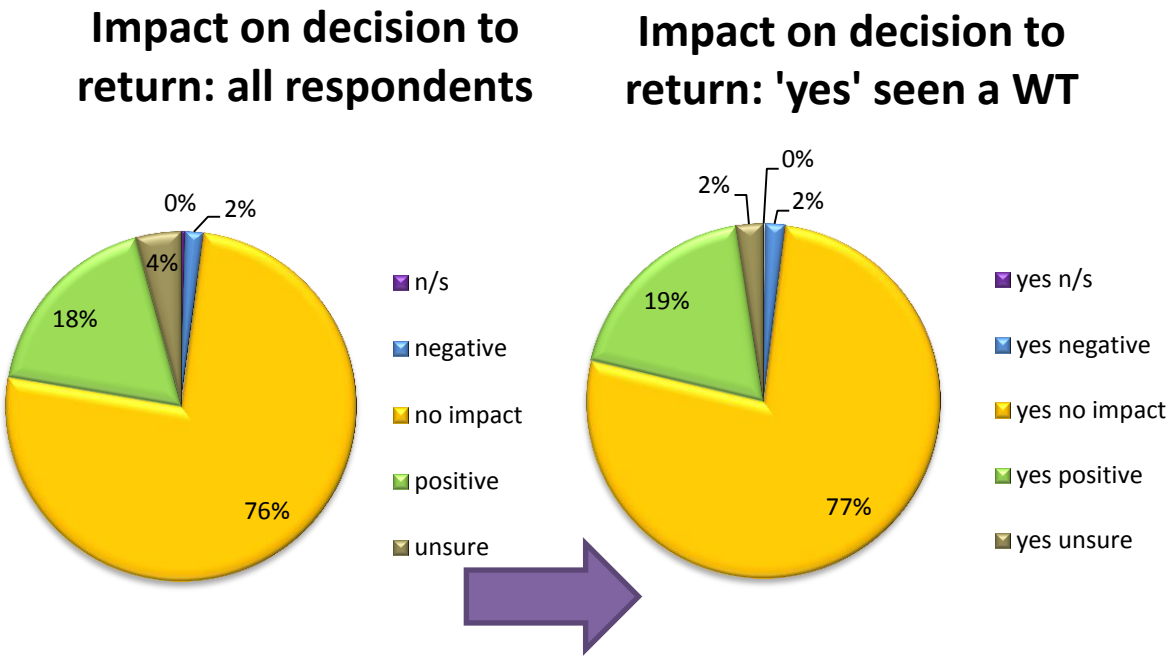

Figure 34. Impact on decision to return: whole group of respondents vs. 'yes, have seen wind turbines' respondents.

Figure 35 illustrates the impact on decision to return in first-time comers. In total there are 328 first-time comers, out of which 274 (84%) have seen wind turbines. Regarding the results, 73% of the first-time comers claim 'no impact' on their decision to return, 22% 'positive', 1% 'negative', 4% were

'unsure' while insignificant ratio of respondents did not state the impact. The results show that returning tourists are not really affected as they state positive or neutral impact on their decision to return.

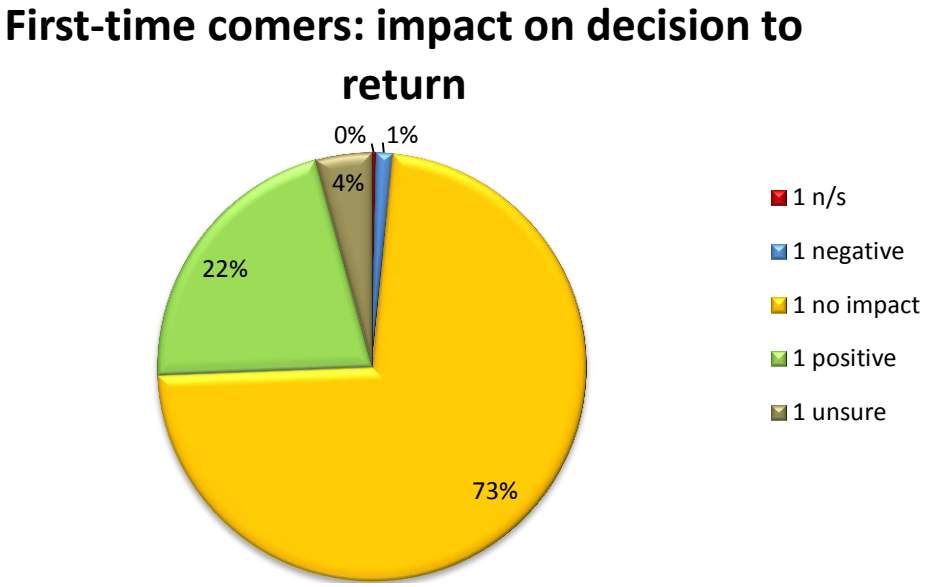

Figure 35. Impact on decision to return by first-time comers.

Objective 3

The first crucial interrelation is between the respondents who saw wind turbines during their stay and the level of respondents' interest to visit a wind farm on Gotland as a tourist attraction as per Figure 36. Out of 611 respondents, 43% of tourists did not express interest in visiting a wind farm as a tourist attraction, 25% stated 'yes', 31% 'maybe' while the ratio of 'not stated' is considered negligible.

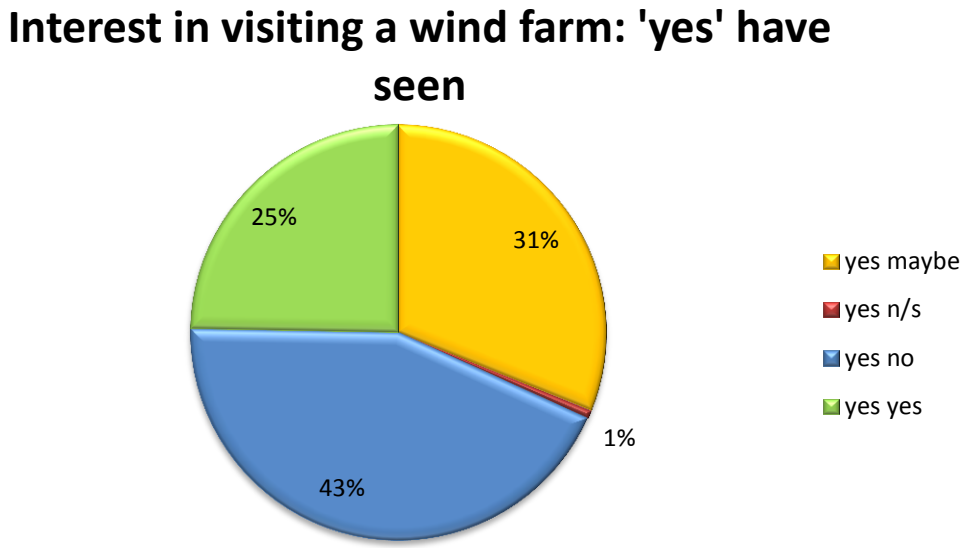

Figure 36. Interest in visiting a wind farm by respondents who saw wind turbines.

To compare this 'yes, have seen' group of respondents to the whole group, insignificant differences can be detected as per Figure 37. Yet drawing any distinct conclusions is not desired in this case as margin of error of 3.6% applies and therefore, the 'differences' fall within natural statistical variations.

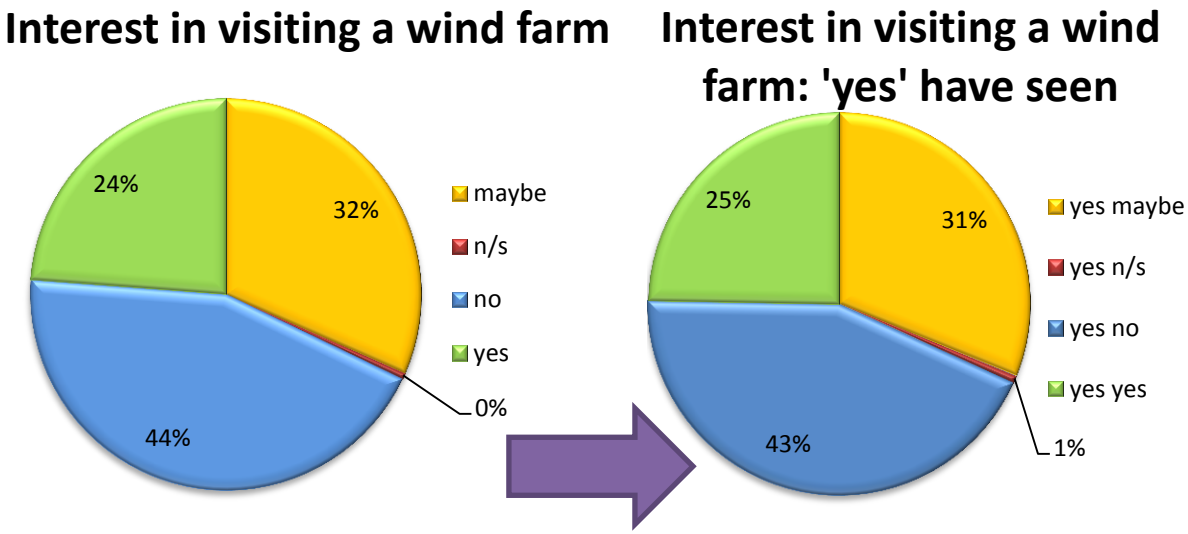

Figure 37. Interest in visiting a wind farm: whole group of respondents vs. 'yes, have seen wind turbines' respondents.

Looking at the **prevailing** features of the group 'yes' and 'maybe' interest in visiting a wind farm, which together reaches 56% of 611 respondents, the collected data state that the group includes predominantly first-time comers who come mainly for a combination of purposes and stay 4 – 7 days in Gotlandic summer houses or in 'other' types of accommodation. These respondents have predominantly positive impression of seeing wind turbines while coming to the island with positive attitude as well as leaving with positive attitude to wind turbines. The group is not impacted by the presence of wind turbines when deciding to return, male gender prevails, the respondents belong to the '31-55' age group while coming from Sweden.

4.3.2 Profiles of the positive and negative respondents

Examining the **prevailing** features of the group of respondents with *positive* impression of wind turbines, which together reaches 59% of 611 respondents, the collected data state that the group includes predominantly first-time comers who come mainly for a combination of purposes and stay 4 – 7 days in Gotlandic summer houses or in 'other' types of accommodation. These respondents with positive impression of seeing wind turbines come to the island with positive attitude as well as leave with positive attitude to wind turbines. The group is not impacted by the presence of wind turbines when deciding to return, male gender (56%) prevails (female 39%), the respondents belong to the '31-55' age group while originating in Sweden. The positive respondents are almost equally distributed in being interested in visiting a wind farm as a tourist attraction, i.e. one third 'maybe', one third 'yes' and one third 'no'.

Contrariwise, focusing on the **prevailing** features of the group of respondents with *negative* impression of wind turbines, which together reaches 8% out of 611 respondents, the collected data state that the group includes predominantly first-time comers who come mainly for a combination of purposes and stay 4 – 7 days in Gotlandic summer houses, which corresponds with the positive group. However, the respondents with negative impression of seeing wind turbines come to the island with negative attitude and leave with negative attitude to wind turbines. The group is not impacted by the presence of wind turbines when deciding to return, male (64%) and female (30%) gender, the respondents belong to the '31-55' age group while coming from Sweden. Absolute majority of the negative respondents are not interested in visiting a wind farm as a tourist attraction.

As we can see, the two main differences between positive and negative respondents are that tourists with negative impression of seeing wind turbines come to the island with negative attitude and leave with negative attitude to wind turbines. Secondly, absolute majority of the negative respondents do not express interest in visiting a wind farm as a tourist attraction.

4.3.3 Differences in gender, age and nationality

Regarding the differences in wind turbine impressions by gender, Figure 38 shows a similar tendency in both genders together with ‘not stated’. Women and men have mainly positive impressions of wind turbines followed by neutral and lastly negative. Women share positive impressions in 53%, neutral in 34% and negative in 5% of cases while men claim positive impressions in 56%, neutral in 29% and negative in 8%. As a result, conclusions about differences in wind turbine perceptions by gender can be drawn only intuitively given the margin of error of 6% for female and 5% for male.

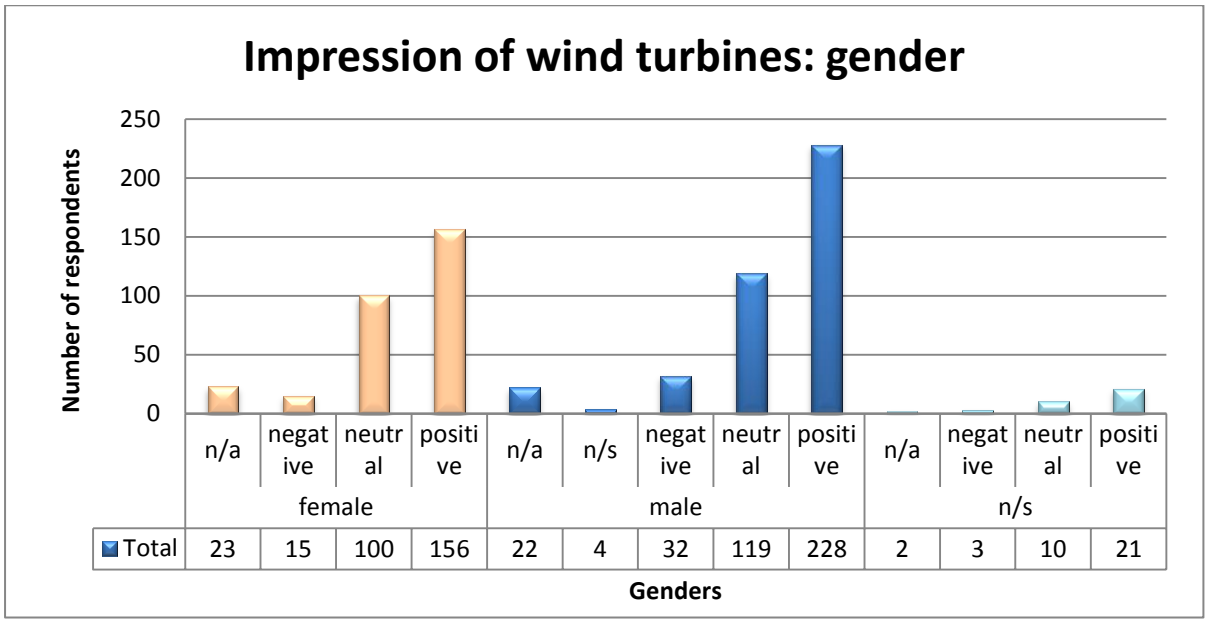

Figure 38. Impression of wind turbines by respondents‘ gender.

Concerning the differences in wind turbine impressions by age, Figure 39 demonstrates a similar tendency in all age groups. All age groups have mainly positive impressions of wind turbines followed by neutral and lastly negative. Age group ’under 18’ with only 12 participants in this category, which might not be a sufficiently representative number, share positive impressions in 58%, neutral in 8% and negative in 8% while age group ’19-30’ claim positive impressions in 52%, neutral in 31% and negative in 4% of cases. Age group ’31-55’ has positive impressions in 55%, neutral in 31% and negative in 7% of cases. Lastly, group ‘over 55’ state positive impressions in 55%, neutral in 32% and negative in 8%. Recurrently, margins of error apply and therefore drawing distinct conclusions can only be intuitive. Yet the tendency of predominantly positive impressions of wind turbines remains in all age groups and it cannot be concluded that one or another age group perceives wind turbines with a significant difference.

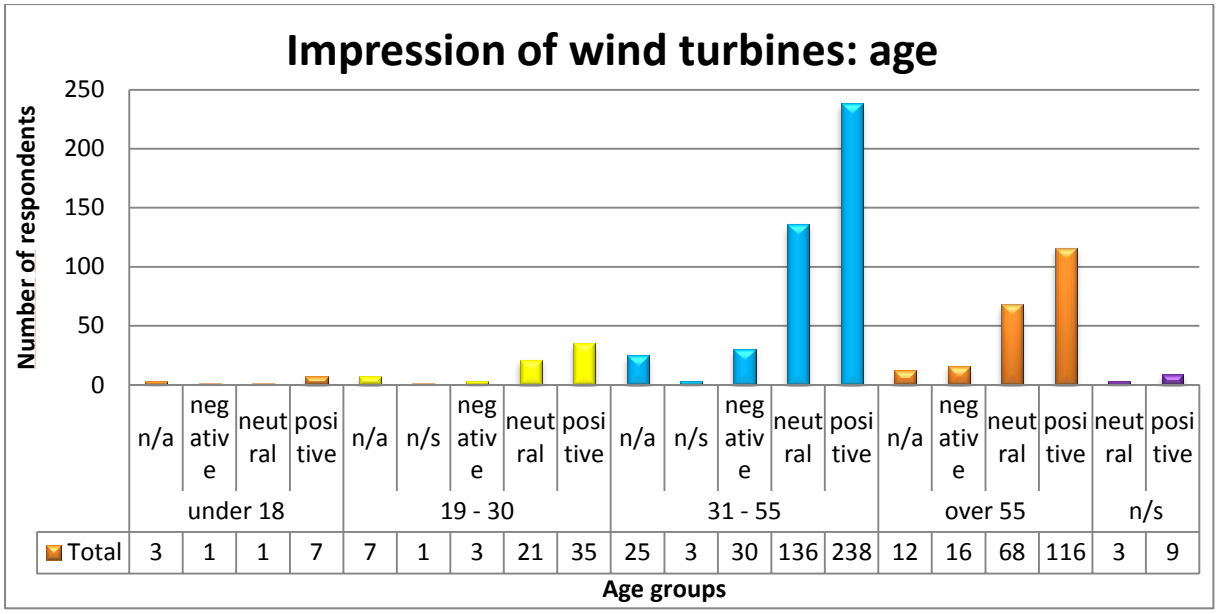

Figure 39. Impression of wind turbines by respondent's age.

Whether origin plays a role in perception of wind turbines is answered in Figure 40 and Figure 41. Swedish tourists show positive impressions of wind turbines in 59%, neutral in 32% and negative in 8% of cases.

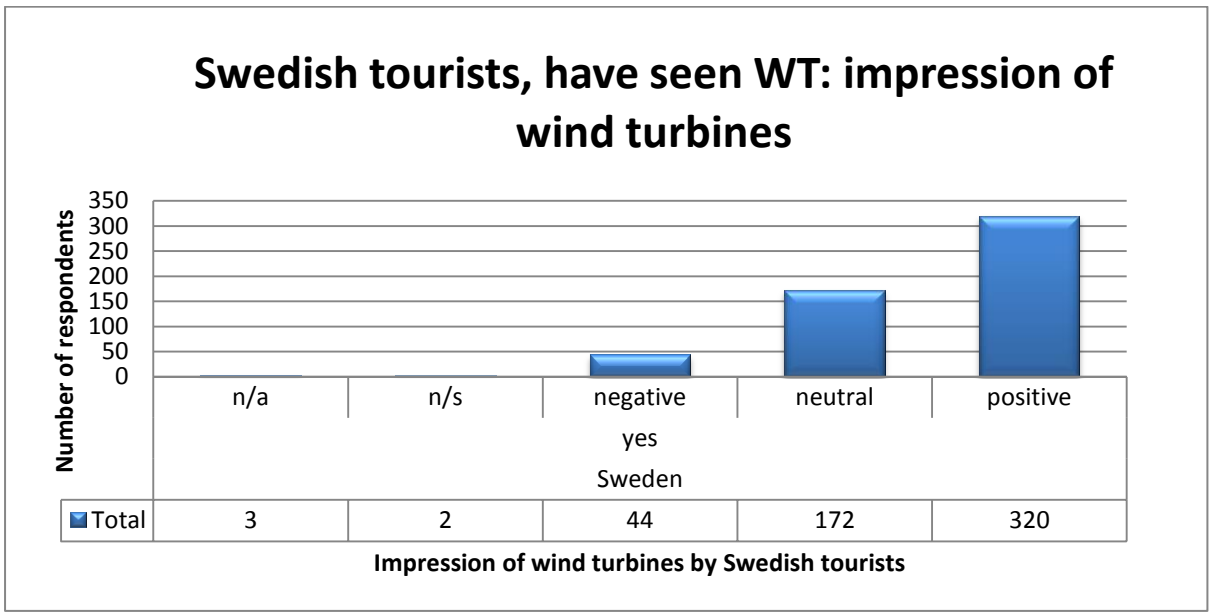

Figure 40. Impression of wind turbines by Swedish tourists.

All foreign tourists have mainly positive (54%) impressions of wind turbines followed by neutral (39%). Only two Norwegian tourists state negative impression of wind turbines, which represents 4% of negative responses in the international group of tourists. In summary, a significant difference in wind turbine perception by nationals has not been detected in the current study.

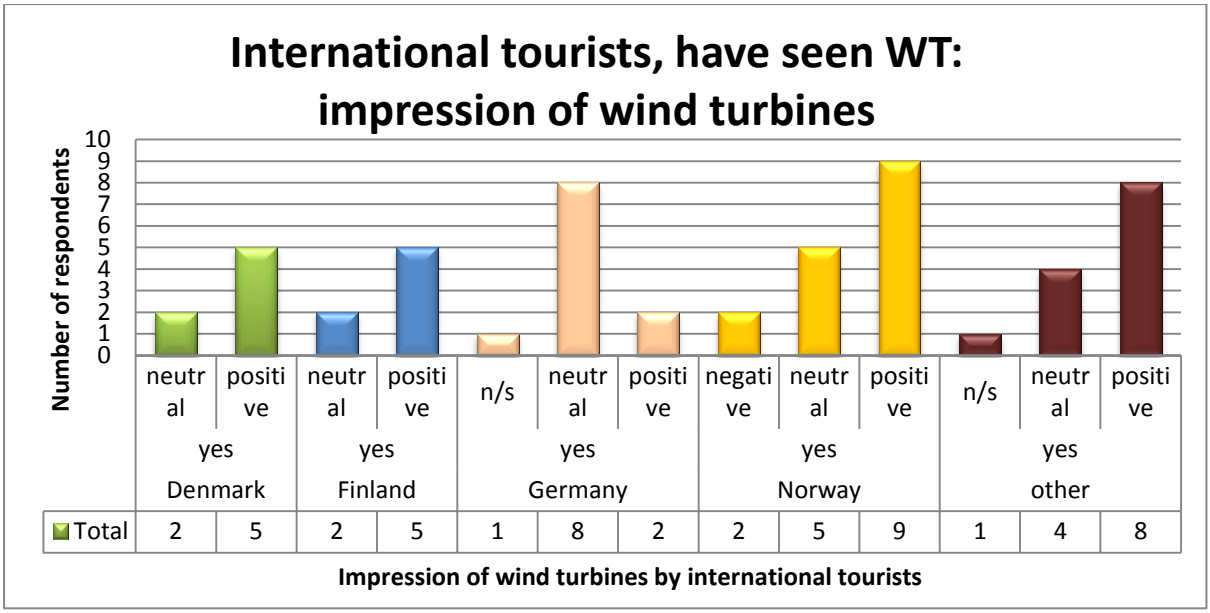

Figure 41. Impression of wind turbines by international tourists.

4.4 Conclusion

Although Gillham (2007) mentions that the strength of analysing questionnaire is in description, not explanation, the results have been not only described, but also interpreted. The outcomes have been presented question by question based on the designed questionnaire whereas addressing objectives of the current study has been performed consequently.

To sum up, the survey found that 8% of tourists perceive wind turbines negatively. Next, the study identified that the decision to return to Gotland of 98% of tourists is not impacted by the presence of wind turbines on Gotland. Moreover, the decision of 99% of first-time tourists to return is also not impacted by the existence of wind turbines on Gotland. Lastly, it was revealed that 56% of respondents stated ‘yes’ or ‘maybe’ to the interest in visiting a wind farm as a tourist attraction.

Since this figure of 56% is regarded as noticeable, a possibility of ‘wind power tourism’ development on the island will be discussed in the following section. Chapter 5 will also present challenges and dilemmas encountered and recommendations made.

5 Discussion and recommendations

As there are challenges and problems in every research, Chapter 5 focuses on discussing the dilemmas and the ways how these have been solved. The current section aims to contribute to the study's transparency. Additionally, the newly introduced concept of 'wind power tourism' on Gotland will be elaborated and accounted for.

5.1 Challenges and dilemmas encountered in the course of the field research

Firstly, one has to be aware of the advantages and disadvantages of a questionnaire in general, which has been discussed in the Methodology chapter. As Gillham (2007) points out, questionnaires are rarely sufficient as a research method on their own. When the results from questionnaire have been analysed, its limitations are particularly visible. A standardized, descriptive set of data has been obtained that might raise more questions than it answers. For instance, one would be fond of interviewing those respondents who expressed 'maybe' to visiting a wind farm as tourist attraction and ask what their 'maybe' is based on.

Additionally, researcher can never be sure how truly survey participants respond to questionnaires. In other words, the ratio of people who lie in such surveys, questionnaires or interviews remains unknown.

To balance the rather pessimistic information, we emphasize that a significant number of respondents were covered in relatively short period in the current study. The questionnaire allowed respondents to think sufficiently about their responses, avoided interviewer bias and offered straightforward analysis of answers to questions.

Another dilemma related to questionnaire as a research technique is whether we can assume, and if so to what extent, that the answers to the questionnaire measure specifically wind power versus tourism on Gotland, and not people's general attitude towards wind power, or even more generally, renewable energy sources. In other words, to what extent we can assume that respondents understood the questions precisely the way the researcher wanted them to understand.

For instance, if we distributed a questionnaire on 'the impact on tourism of nuclear power plants in the landscape', we suspect we would obtain different results before and after 26 April 1986, i.e. Chernobyl disaster, although the power plants were no more aesthetic before than after the accident. Relating to wind power, one might obtain different results just after the general press have reported news about wind turbines, either in positive or in negative terms. If our method was without any deficiencies, such newspaper articles would not influence the result by any means. Certainly, no methods are perfect, and therefore, this assumption might be a potential source of error.

Secondly, it was a challenge to distinguish tourists from regular travelling residents of Gotland. Although a strategy had been designed, some passengers considered themselves tourists when they visited their family and friends or stayed in summer houses, while others did not. While the former group was included in the questionnaire as they, for certain reasons, accounted themselves tourists, the latter group did not agree to complete the questionnaire. This problem could have been solved more accurately by providing a written definition of a 'tourist' to all respondents, which was not, however, possible. Therefore, the participants had been left with their own choice to decide whether they perceived themselves as tourists or not.

It is also noteworthy that particularly respondents staying in summer houses represented a problematic group as it is not unusual that these visitors stay on Gotland for approximately five weeks and are known as 'summer Gotlanders'. Some 'summer Gotlanders' considered themselves tourists while some others did not. Concerning the importance of first-time comers, the results have shown that 26% of the first-time comers had stayed in summer houses, which brings us to a conclusion that approximately one third of the summer house dwellers were first-time comers. Other 30% of first-time comers stayed in hotels and 24% camped.

Third point worth discussing is the response rate. Although the response rate was satisfactory, there is an uncertainty whether the approached passengers who did not wish to complete the questionnaire had different attitudes to wind turbines. This fact could not be verified as the participants were not asked why they did not want to fill in the questionnaire. Intuitively, this group consisted of people who were not tourists, people who never complete any types of surveys, and people who declined completion after the subject matter was revealed.

Fourth point that deserves commenting upon is called 'not stated' gender (5% of all respondents as per Figure 24) and Figure 42 illustrates the situation, i.e. in the section 'gender' not only both genders had been selected, but in certain cases also more 'countries'. When both genders were ticked, the questionnaire was not entered into the data analysis twice as an identical opinion, but only as one input with a 'not stated' gender. Consequently, we have not only lost one extra opinion, but also national variety as it was not clear which selected 'country' to operate with. Such phenomenon predominantly occurred with couples, but also other clusters such as groups or families, who decided to fill in the questionnaire together. The cluster group ticked therefore both genders, the respondents belonged to the same age group, but sometimes they were of different nationalities. As a result, certain national variety has been lost as the category of country has been treated as 'not stated' as well.

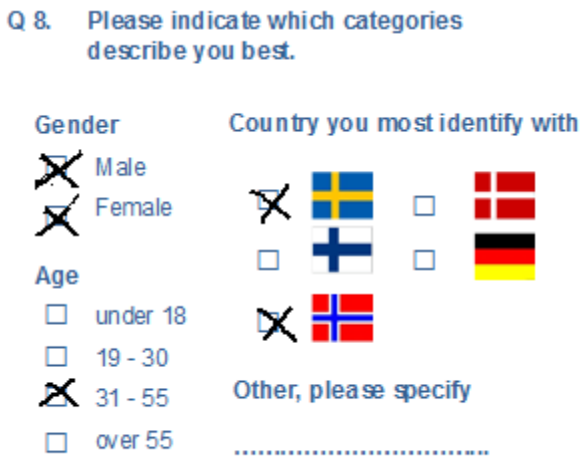

Figure 42. Example of a ´not stated´ gender dilemma.

The previous point goes hand in hand with the interviewer's influence and/or bias, her gender, and last but not least, her language skills. The interviewer had an impact, for instance, on the line of cars she decided to interview, her gender might have affected the number of men participating in the survey, and lastly, there is also space for error when it comes to the interviewer's proficiency in the Swedish language, which was limited to pre-intermediary level B1 (as per Common European Framework of Reference for Languages, 2013). Additionally, the author intended to cover age distribution as equal as possible, however, despite witnessing a number of tourists under 18 around the town of Visby during July 2013, mere 1.6% (12 out of 735) respondents claimed the age of 'under 18'. There is another uncertainty relating to whether these tourists were not captured due to their time of departure. In other words, in case the group 'under 18' was leaving Gotland after 5pm on weekdays or during weekends, it was impossible to interview them due to the interviewer's designated working hours.

The next dilemma encountered deals with addressing passengers with and without cars as equal as possible. Therefore, Mondays, Wednesdays and Fridays were designated to interview tourists with cars while Tuesdays and Thursday were kept for tourists without cars. It was observed that passengers with cars were always willing to cooperate, probably due to the fact that they were captured in the queue. In comparison, passengers without cars often rushed and were less willing to fill in the questionnaire. However, with tourists without cars there was more national variety and it came to the interviewer's attention that women were more accessible to participate in the survey. Yet the difference in respondents with and without cars has not been analysed as it is considered beyond the scope of the thesis and not particularly beneficial to the objectives.

Last note relates to *Figure 33. Impact on decision to return by respondents who saw wind turbines*, which indicates that 2% of the respondents claim that the presence of wind turbines on Gotland will have negative impact on their decision to return. 2% (including a margin of error of 1%) out of

350,000 tourists (Figure 14) represents 7,000 tourists. In case these 3,500 to 10,500 tourists, given the margin of error, whose decision to return is impacted negatively, belong to the richest tourists who spend considerable amount of money on Gotland, the negligible percentage could become noticeable. However, taking into account the assumption that 10,500 tourists, as a worst case scenario, do not return to Gotland as a matter of fact, an upper estimate 11,000,000 SEK could be potentially lost per year (calculated with input data from 2011).[5] Considering all these assumptions, in case 2% of tourists do not return to Gotland at all, 200 SEK per capita could be lost on Gotland.

This number has been derived using a precautionary principle as we assumed that tourists whose decision to return is impacted negatively, would not return to the island at all. However, that is probably not the real situation as some tourists impacted negatively still return to Gotland equally. Based on the current survey, 8 out of 407 returning tourists (2%) to Gotland expressed negative impact on their decision to return. As a result, the upper estimate of 11,000,000 SEK represents a ceiling, which in reality might not be that high. That means the real figure is almost certainly lower than 11,000,000 SEK.

5.2 'Wind power tourism' potential on Gotland with focus on Näsudden's wind farm visitor centre

This subchapter discusses the current state of a wind farm visitor centre at Näsudden and suggests how to bring the idea of 'wind power tourism on Gotland' further to set up a potential business. The reason for considering the idea is that in total 56% of respondents stated 'yes' or 'maybe' to the interest in visiting a wind farm as a tourist attraction, which is regarded as a noticeable figure.

To start addressing the concept of 'wind power tourism' on Gotland, Figure 43 shows an advertisement in a Gotlandic magazine for tourists, in which one learns about the visitor centre in Näsudden and the related exhibition. The centre was open for five weeks over summer 2013, the entrance was free of charge. One might question whether the advertisement was a sufficient form of promotion though. Moreover, as a matter of fact, an interested tourist needed to have a means of transport to visit Näsudden from Visby as there is no public transport to the wind farm. Additionally, information on the visitor centre provided by the tourist office in Visby was rather limited. In other words, it would be beneficial if the potential ´wind power tour organizer´ cooperated with the tourist office and established a link between the tourist office and wind power together with more exhaustive advertising to attract the desired public.

[5] *Calculation*. Input data: travel and tourism industry turnover: 1.4 billion SEK; tourists to Gotland per year: 1,500,000; inhabitants of Gotland: 57,000

(1) 1 400 000 000 ÷ 1 500 000 ≈ 1 000 SEK ……..expenditure per tourist per year 2011
(2) 1 000 x 10 500 (not returning tourists) = 11 000 000 SEK…..…..worst case scenario for gone contribution
(3) 11 000 000 ÷ 57 000 ≈ 200 SEK……..…potential financial loss on a per habitant basis

Figure 43. ´Learn more about wind power´, advertisement to visit Näsudden wind farm. Source: Gotlands guiden, 2013.

The following Figure 44 illustrates the journey to the visitor centre, which is easy to navigate through and clearly marked for all interested visitors.

Figure 44. Signs to the visitor centre. Source: M. Menin, 2013.

Based on Wenzer (2013), over the summer of 2013, approximately 25 visitors came per day reaching total number of approximately 620 visitors per five weeks out of which circa 50 were of foreign origin. The exhibition was in Swedish with an English speaking guide available upon request. The visitor centre is a rather small, but cosy building owned by Vattenfall (Figure 45).

Figure 45. Visitor centre at Näsudden wind farm. Source: Wenzer, 2013.

A visitor coming to Näsudden wind farm centre could enjoy a coffee break while learning about wind energy from available documents, brochures and files (Figure 46). Visitors could also educate themselves about their use of electricity.

Figure 46. Educational material at Näsudden visitor centre. Source: author, 2013.

Visitors had chance to not only learn from available panels and posters, but also from videos dealing with different aspects of wind power. The film in Figure 47 depicts decommissioning and recycling of a wind park, the posters explain ´when wind turbines produce electricity´, ´we have to build wind turbines where the wind blows´ and ´from cradle to grave´, describing the whole process of planning and building a wind park.

Figure 47. Näsudden visitors centre. Source: author, 2013.

To conceptualize the idea of ´wind power tourism´ on Gotland, we shall start with reactions and comments left in the questionnaire, in which respondents claim having visited the visitor centre already and some respondents suggested ´having a fika there´, meaning to enjoy a coffee break at the visitor centre.

It is the author´s view that ´wind power tourism´ could take two forms, namely educational and/or experience. The educational aspects have been covered by the visitor centre at Näsudden extensively, however, opportunities to experience wind turbines in person seemed rather limited. For instance, organized (bus) tours could be arranged when the group of tourists is accompanied by a wind power guide who not only provides information, but also tailors the tour to the group´s needs.

As the case may be, some tourists could be interested in spending a whole day at a wind turbine to test the sound and shadows or learn about the bird and bat life, including an overnight camping stay to experience the sound at night. During the day, the group could be shown the interior of the wind turbine tower, if not even the wind turbine nacelle, which is costly though as the wind turbine has to be switched off and the financial loss of a non-producing turbine would have to be covered. Although such a tour would not be economically feasible, the spectacular views on the top would be appreciated.

Another option would be to use an old out-of-order wind turbine, which could serve as an ´industrial landmark´. In other words, the tour could view the interior together with the lift and nacelle, however, certain health and safety measures might apply, which could bring undesired additional cost.

Another potential for ´wind power tourism´ on Gotland lies also in offshore wind power tours as there are not only onshore wind farms on the island, but also some existing and planned offshore wind parks, such as Bockstigen or planned Klasarden (4coffshore, 2013). However, this might be a challenging area due to the related high cost. For instance, one German study has found out that a wind farm failed to become a tourist attraction, partly because it was hard to see and partly because a helicopter ride out to the wind farm reaches up to 100 euros or more per person (Morris, 2013). Yet a helicopter ride could be replaced by a less-costly boat ride. However, we assume that stricter rules and health and safety measures would apply than with onshore wind power tours, which would overall result in high costs.

Lastly, the question of overall funding of 'wind power tourism' on the island remains. In other words, should such 'wind power tours' be free of charge or should the tourists pay? What would the benefits of the tours be? Let us introduce an imaginary scenario: a group of tourists come and go for a wind farm tour on Gotland. After their holidays, the tourists return home to their original predominantly Swedish locations while knowing more about wind power. As a result, public awareness of wind power has been raised. In case there are new wind turbines installed in the area of the tourist's home, such a person should have a more distinct, educated, opinion on wind energy. Thus, potential wind power development could be less problematic. However, this does not mean that wind energy opposition would be resolved.

As it is the citizens of Sweden who visit Gotland the most, it should be the state funds that cover the costs of the 'wind power tours'. Such financing could be, for instance, secured by a combination of Vattenfall contributions together with hiring volunteers. Vattenfall could provide material support needed whereas involving volunteers would solve the problem of finding a suitable 'wind power guide', for example a student of wind power on Gotland.

However, does Sweden need to raise wind energy awareness? If so, would such ‘wind power tours’ bring the desired effect? Comparing the current wind turbine perception results from a tourist point of view (59% positive, 32% neutral, 8% negative), there is a certain level of correspondence with the SOM Institute survey results. The SOM Institute asked Swedish citizens what energy sources Sweden should invest in, which resulted in 73% of the respondents stating that Sweden should ‘invest more’ into wind power (Hedberg, 2005). The result is considered rather supportive in comparison with for example coal where 2% of Swedish citizens responded ‘invest more’. The proportion of people positive towards investing more in wind power by gender and age follows: male (72%), female (73%); age 15-30 (70%), 31-60 years (79%) and 61-85 years (63%).

Relating these figures to the results of the current survey, we can see only a slight difference between the genders and therefore it is not possible to draw any distinct conclusion. Regarding the age differences between the current results and the SOM Institute, the age group ‘31-60’ seems to be the most supportive one as per the SOM Institute whereas the current survey suggests that both groups of tourists ’31-55’ and ‘over 55’ share positive impressions of wind turbines. As mentioned, comparing these two studies only indicates a similar tendency of positive/supportive attitude, and further research is encouraged in terms of comparative studies on wind power acceptance in Sweden.

In summary, the current section has provided certain suggestions on ´wind power tourism´ on Gotland, which are certainly not covering the full range of possibilities and potential on the island, but could serve as a starting point.

6 Conclusions and implications

6.1 Introduction

This chapter will provide conclusions about the research problem, list research limitations and conclude with future research suggestions.

This study's distinct contribution to the body of knowledge lies in identifying the impact of wind power on tourism on Gotland.

6.2 Conclusions about the research problem

The principal aim of this study was to investigate the impact of wind power on tourism on Gotland. To conclude the study, we firstly draw our attention back to the literature review in Chapter 2 in order to establish whether the current findings are consistent with the literature. If needed, reasons for potential inconsistencies will be provided.

Thus, current findings stated in Section 4.4 seem overall consistent with the literature reviewed in terms of impact of wind power on tourism. Consistently with studies conducted in Scotland, Wales, Australia, Denmark, Quebec, Sweden (2009), the Czech Republic and France, also on Gotland wind turbines are not perceived as having a detrimental effect on the tourism industry. Only in Dalarnas Län (Sweden, 2010), the research concludes that wind power development in the investigated area can result in conflict with the tourism industry. In contrast to Dalarnas Län, in Quebec and the Czech Republic, the surveys conclude that new wind installation will have only a minor or negligible negative impact on tourism. Regrettably, the current thesis cannot provide any conclusion in this respect as it is beyond the scope to research the impact after the planned wind power expansion. Therefore, this topic has been recommended for future research (see Section 6.4). The Gotlandic survey also corresponds to Australia and Sweden (2009) in terms of the potential of wind turbines to be a tourist attraction.

Next, we shall incorporate qualitative findings about the research problem developed during the current survey. Some of those insights discovered in the course of the survey have not been considered in the literature reviewed in Chapter 2. Yet all the current notes have been discussed in Section 5.1. A summary of the main points follows:

- Firstly, the interviewer has to be constantly aware of the advantages and disadvantages of a questionnaire as a research tool. It is uncertain whether we can assume, and if so to what extent, that the answers to the questionnaire measure specifically wind power versus tourism on Gotland, and not people's general attitude towards wind power.

- Secondly, it has been identified that to distinguish tourists from regular travelling residents of Gotland can be a complex process.
- Particularly respondents staying in summer houses represent a problematic group as many of them belong to the group known as ‘summer Gotlanders’ who at times consider themselves tourists while some others do not.
- An uncertainty remains whether the approached travellers who did not wish to complete the questionnaire had negative attitude to wind turbines.
- The relatively high ratio of ‘not stated’ (5%) in the category gender was not anticipated. This phenomenon appeared due to tourist’s decisions to fill in the questionnaire not individually, but together as a couple or a group.
- Hypothetically, in case 2% of tourists who stated a negative impact on their decision to return to Gotland do not return to Gotland at all, 200 SEK per capita could be lost on a yearly basis. Although ‘not returning at all’ to Gotland has not been investigated, the precautionary principle of a ‘worst case scenario’ has been applied. As a result, the gone amount would represent 11,000,000 SEK for the island’s population, however, the real figure per year is almost certainly lower than 11,000,000 SEK. The lost contribution hypothesis is the last qualitative finding about the research problem that occurred in the course of the current study.

Lastly, a summary listing of the contributions of the current research follows:

- A minimum number (8%) of tourists perceive wind turbines negatively.
- Whether tourists have seen wind turbines or not, it does not affect the general impression of wind turbines, i.e. the group of respondents with positive impression prevails.
- Whether tourists´ motivation to visit Gotland was purely ‘nature’ or combination of purposes, the percentages are rather consistent. Nature lovers show 10% negative impression of wind turbines, ‘seaside & weather’ 7% negative and ‘multiple’ 7% negative.
- From the ‘accommodation’ point of view, it can be concluded that respondents’ impressions do not significantly vary when assessing the accommodation being ‘camping’ and ‘summer house’. Respondents who camped show 6% negative impression of wind turbines, respondents who stayed in summer houses were 9% negative. Considering the given margins of error (3%) and natural statistical variations, any comments on the differences can be merely intuitive.
- Two main differences between respondents with positive and negative impressions of wind turbines are that tourists with negative impression of seeing wind turbines come to the island with negative attitude and leave with negative attitude to wind turbines. Secondly, absolute

majority of the negative respondents do not express interest in visiting a wind farm as a tourist attraction.

- Both women and men have mainly positive impressions of wind turbines followed by neutral and lastly negative impressions. Women share positive impressions in 53%, neutral in 34% and negative in 5% of cases while men claim positive impressions in 56%, neutral in 29% and negative in 8% of cases. Conclusions about differences in wind turbine perceptions by gender can, therefore, be drawn only intuitively.
- All age groups have mainly positive impressions of wind turbines followed by neutral and lastly negative impressions. The tendency of predominantly positive impressions of wind turbines remains in all age groups and it cannot be concluded that one or another age group perceives wind turbines with a significant difference.
- A significant difference in wind turbine perception by nationals has not been detected in the current study.
- The decision to return to Gotland of absolute majority (98% with a margin of error of 1%) of tourists is not impacted by the presence of wind turbines on Gotland.
- Moreover, the decision of absolute majority of first-time tourists (99%) to return is also not impacted by the existence of wind turbines on Gotland.
- Approximately half of respondents (56%) expressed interest in visiting a wind farm as a tourist attraction, therefore, wind turbines could be used to support development of a new form of tourism on Gotland, i.e. 'wind power tourism', with the support of proper marketing promotion.
- Universally speaking, we conclude that wind power does not significantly affect tourism on Gotland.

6.3 Limitations

As Section 1.7 has previously outlined major limitations of the research that were a deliberate part of the research, this section discusses other limitations that became apparent during the progress of the research, particularly certain questionnaire results that may indicate a limitation.

Firstly, as mentioned in Section 1.7, the current survey did not represent a truly random sample of tourists in the sense that the research had surveyed tourists on an island with approximately 150 wind turbines. Naturally, these wind turbines can be more or less visible in the landscape depending, for example, on the technical parameters of the particular wind power installation. However, the one specific group that this survey intended to test for, i.e. tourists with an aversion to wind turbines, did not seem to have chosen Gotland to holiday in this area and were thus excluded from the sampling. Additionally, as concerns the selection of our sample of tourists, this survey cannot be regarded as

representing the general public opinion but as a case-study dealing specifically with the segment of tourists who were leaving Gotland by ferry.

Yet the survey findings have a predicative value and we can deduce certain generally true verdicts from them as listed in Section 6.2.

Regarding the questionnaire results, age and gender of respondents indicate a limitation, which was also discussed in Section 5.1. As per Figure 26, distribution of participants in age groups 'under 18' and '19 – 30' was considerably lower than in age groups '31 – 50' and 'over 50'. However, Section 1.1.1 mentioned the prevailing age of tourists and therefore, the age limitation was anticipated and afterwards proven during the course of the survey. As per Figure 24, another limitation of the study is the slightly unequal gender distribution. Section 5.1 provided potential reasons for the limitation.

The last paragraph in Section 5.1 brings us to the last limitation of the current study, i.e. missing economic analysis and financial figures. To address all potential concerns of local entrepreneurs and others, it would be beneficial to know more details regarding tourists' expenditures on Gotland. For instance, the value that either returning or first-time coming tourists bring to the island, and how the purpose of visit, length of stay and accommodation affect the tourists' expenditure. As a matter of fact, as far as the current study investigates the impact of wind power on tourism on Gotland, the full impact has not been assessed. As a result, an economic analysis has not been addressed.

6.4 Further research

This final section is to assist other researchers in selection and design of future research. Further research suggestions refer to both the topic and the methodology.

As mentioned in Section 1.7, only the current impact of wind power on tourism has been researched, i.e. before the further planned wind power expansion on Gotland. This fact provides an opportunity for further research in terms of identifying how tourists perceive wind turbines on Gotland after the planned wind power expansion in order to understand the impact fully and completely. One could also continue investigating the challenging relation between the maximum planned wind power expansion on Gotland, the level of impact, financial implications and/or the tourists' experience.

Regarding the other point in Section 1.7 that the current survey does not represent a truly random sample of tourists in the sense that the research surveys tourists on an island with approximately 150 wind turbines, the point also provides an opportunity for further research. For instance, research could be conducted with Swedish nationals who have never been to Gotland and investigate their motivation to (not) visit the island.

As a matter of fact, it would be beneficial to expand the current study by economic analysis focusing on the value that wind turbines bring to Gotland. That means job creation value, investment, economic benefits, electricity independence, the costs, loss of usable lands among others. With such economic extension, certain hypotheses could be tested as well for the current survey operated without any stated hypotheses. Additionally, more detailed financial figures concerning the value that tourism industry brings to Gotland should be introduced. Afterwards, a cost-benefit analysis could be conducted to identify both values of the wind and tourism industries.

Lastly, the study would benefit from certain methodological amendments including a more in-depth analysis of the interrelations in the survey. Although Excel proved itself to assist with the data analysis sufficiently, a real statistical software package, for instance SPSS (Statistical Package for the Social Sciences), would enable the researcher to identify potential correlations or analogies. Moreover, involving a larger research group would be beneficial as well.

This more detailed analysis should afterwards serve to establish whether ‘wind power tourism’ development on Gotland is needed and would bring the desired effect of increased wind power acceptance.

7 References

4coffshore (2013). *Bockstigen.* http://www.4coffshore.com/windfarms/bockstigen-sweden se02.html (retrieved 1 October, 2013)

Alden, L. (2013). *Visual impact of wind power.* Lecture notes, Högskolan på Gotland, 2012.

Australian Wind Energy Association (AusWEA, 2004). *Wind Farms and Tourism*. Australian Wind Energy Association.

Bodén, B. (2009). *Vindkraft i Jämtland. En studie relaterad till turism*. Turismforskningsinstitutet ETOUR. http://miun.diva-portal.org/smash/record.jsf?pid=diva2:284819 (retrieved 17 October 2013)

BOLD Educational Software (2011). *Sample Size Calculator.* http://bold-ed.com/calculator.htm. Instructional Technology University of Southern California School of Education (retrieved 9 April 2013)

Bygg Gotland. *Wind Power on Gotland*. http://www.gotland.se/50628 (retrieved 22 May, 2013)

Curtis et al. (2000). *Approaches to sampling and case selection in qualitative research: examples in the geography of health*. Elsevier Science Ltd.

Drechsler, M. et al. (2011). *Combining spatial modeling and choice experiments for the optimal spatial allocation of wind turbines*.
http://www.sciencedirect.com/science/article/pii/S0301421511002989 (retrieved 22 February, 2013)

Earnest, J. and Wizelius, T. (2011). *Wind Power Plants and Project Development.* New Delhi, 2011.

Edberg, K., Personal Communication (August, 2013). *On questionnaire located at visitors centre in the wind park of Näsudden.* PhD. Candidate at Södertörns Högskola, Sweden.

Ekštein, K., Personal Communication (April, 2013). *On statistics, population and sample size. Reviewing and approving the sample size.* Department of Computer Science and Engineering, Faculty of Applied Sciences, University of West Bohemia, Pilsen, Czech Republic.

Eriksson, D., Personal Communication (17 April, 2013). *On tourism on Gotland, visitors profile, purpose of visit, accommodation.* Communications Officer, Inspiration Gotland AB.

European Landscape Convention (2013). *Landscape and Values*.

Evensen, P., Personal Communication (12 April, 2013). *On tourism on Gotland, relevancy of the intended survey, sample size and questionnaire design.* Marketing Manager, Destination Gotland.

Feurst, O. (2009). *Marketing Research Fundamentals Handout*. Business Art Technology, Sweden.

Frantál, B., Kunc, J. (2010). *Wind Turbines in Tourism Landscapes. Czech Experience*.http://www.sciencedirect.com/science/article/pii/S0160738310001271 (retrieved 2 April, 2013)

GeoExPro (2010). *GeoTourism: Gotland.*

http://www.geoexpro.com/article/GeoTourism_Gotland/33dc9e9b.aspx, 2010, (retrieved 15 May, 2013)

Gillham, B. (2007). *Developing a Questionnaire.* Continuum International Publishing Group.

Gotland University (2012). *Student Handbook.* http://www.hgo.se/education/3680-hgo/version/1/part/5/data/StudentHandbook.pdf?branch=main&language=en (retrieved 17 May, 2013)

Greener, S. (2008). *Business Research Methods.* Dr. Sue Greener &Ventus Publishing ApS.

Guay, R. (2004). *Étude de marketing auprès des touristes de la Gaspésie afin de connaître leurs attitudes face à l'installation d'éoliennes.* Richard Guay Marketing, Quebec.

Gupta, J. (2011). *The Art and Science of Interviewing in Qualitative Research Design.* University of Amsterdam.

Gustafsson, B. et al. (2011). *Good research practice.* Swedish Research Council http://www.vr.se/inenglish/ethics/publications.4.325716ea11d7602a6d180008726.html (retrieved 22 April, 2013)

Hammarlund, K., Personal Communication (3 April, 2013). *On representative sample, sample size and questionnaire design.* Ramböll, Sweden.

Hedberg, P. (2005). *Swedish People's Opinion on Sun and Wind.* SOM Institutet, Goteborgs Universitet.

Henningsson, M. et al. (2013).*The Effects of Wind Power on Human Interests.* Vindval: *A synthesis report.* http://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-6545-4.pdf (retrieved 3 May, 2013)

ISAWE (International Student Association of Wind Energy), 2013.

Jankowicz, A.D. (2005). *Business Research Projects.* Fourth edition, Thomson.

Koehler, R., Personal Communication (May, July and August, 2013). *On tourism on Gotland, developing questionnaire, marketing, and data analysis.* Gotland University, Visby, Sweden.

Länsstyrelsen Dalarnas Län (2010). *Vindkraft kring Siljan - en landskapsbedömning. Plan- och beredskapsenheten.*

Lynn, P.A. (2012). *Onshore and Offshore Wind Energy*. *An Introduction.* John Wiley & Sons Ltd.

Malhotra, N.K. et al. (2012). *Marketing Research. An Applied Approach.* Fourth edition. Pearson Education Limited.

Mels, S. (2013). *Landscape analysis, environmental knowledge and wind power planning. Landscape analysis for wind power: A participatory approach.* Lecture notes, Gotland University, 2013.

Mels, S., Personal Communication (26 March, 2013). *On representative sample, sample size and questionnaire design.* Energy Engineering with Specialization in Wind Department of Culture, Energy and Environment, Energy Technology, Gotland University, Visby, Sweden.

Middleton, V.T.C., Clarke, J. (2001). *Marketing in Travel and Tourism*. British Library Cataloguing in Publication Data.

MORI Scotland (2002). *Tourist Attitudes towards Wind Farms*. Research Study conducted for Scottish Renewables Forum and the British Wind Energy Association.

Morris, C. (2013). *Impact of wind turbines on tourism.* http://www.renewablesinternational.net/impact-of-wind-turbines-on-tourism/150/505/71736/ (retrieved 30 September, 2013)

NFO World Group (2003). *Investigation into the Potential Impact of Wind Farms on Tourism in Wales*. Summary Report. Prepared for Wales Tourist Board. http://www.ecodyfi.org.uk/tourism/Windfarms_research_eng.pdf (retrieved 3 May, 2013)

Oppenheim, A.N. (1968). *Questionnaire Design and Attitude Measurement*, Heinemann.

Pedersen, E. (2011). *Health Aspects Associated with Turbine Noise – Results from Three Field Studies.* Halmstad University and University of Gothenburg.

Parfitt, J. (2005). *Questionnaire design and sampling in Methods in Human Geography: A Guide for Students Doing a Research Project. Pearson* Education.

Perry, C. (1995). *A Structured Approach to Presenting Phd Theses: Notes for Candidates and their Supervisors*. University of Sydney.

Powel, K., Personal Communication (June, 2013). *On unbiased questionnaire and leading questions. Reviewing and approving the questionnaire.* Psychologist at University of Queensland, Australia.

Region Gotland, Holm, U. (2012). *Gotland in Figures 2011. Facts and Statistics.*

SCB. Statistics Sweden. *Population statistics.* http://www.scb.se/Pages/TableAndChart_350653.aspx (retrieved 15 May 2013)

Shao, A.T. (1999). *Marketing Research: An Aid to Decision Making.* University of North Carolina at Charlotte. South-Western College Publishing.

Slavíčková, T., Personal Communication (June, 2013). *On unbiased questionnaire and leading questions. Reviewing and approving the questionnaire.* Faculty of Social Science - Psychology, Charles University, Prague, Czech Republic.

The Beacon Hill Institute (2005). *Comments on the Draft Environmental Impact Statement for the Cape Wind Energy Project.* Suffolk University, Boston. http://www.beaconhill.org/BHIStudies/WindMills2005/BHIWrittenComment22205Final.pdf (retrieved 3 October, 2013)

The Scottish Government (2008). *The Economic Impacts of Wind Farms on Scottish Tourism.* http://www.scotland.gov.uk/Publications/2008/03/07113554/7 (retrieved 2 October, 2013)

Tourism Development on Gotland. *ByggGotland*. www.gotland.se/50622 (retrieved 22 May, 2013)

Tourism Partnership North Wales (TPNW, 2012). *The impact of wind turbines on tourism – a literature review.* http://www.tpnw.org/docs/strategies/Literature%20review%20wind%20turbines%20and%20tourism.doc (retrieved 10 March, 2013)

Townend, J. (2002). *Practical Statistics for Environmental and Biological Scientists.* British Library Cataloguing in Publication Data, University of Aberdeen, UK.

Turist Byran, Inspiration Gotland AB (2011). *Ekonomiska och sysselsättningsmässiga effekter av turismen på Gotland inklusive åren 2002-2010.* Resurs för Resor och Turism i Norden AB.

University of Leeds. *Guide To The Design Of Questionnaires.* Information Systems Services. http://iss.leeds.ac.uk/info/312/surveys/217/guide_to_the_design_of_questionnaires/3 (retrieved 8 April 2013)

Uzunoglu, B., Personal Communication (April, 2013). *On statistics, online statistical calculators, population and sample size.* Energy Engineering with Specialization in Wind Department of Culture, Energy and Environment, Energy Technology, Gotland University, Visby, Sweden.

Veselý, P., Personal Communication (April, 2013). *On statistics, population and sample size. Reviewing and approving the sample size.* Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic.

Vindlov (2013). *Wind Power on Gotland.* www.vindlov.se/sv (retrieved 20 April, 2013)

Walsh. A. (1990). *Statistics for the Social Sciences with Computer Applications.* Harper & Row, Publishers, Inc.

West Wind Energy (2004*). Wind Farming & Tourism. Fact Sheet 4.* http://www.w-wind.com.au/downloads/CFS4Tourism.pdf (retrieved 23 April, 2013)

Westerberg, V. et al. (2012).*The case for offshore wind farms, artificial reefs and sustainable tourism in the French Mediterranean.* INRA, Laboratoire Montpelliérain d'Economie Théorique et Appliquée.

World Tourism Organization (UNWTO). http://www2.unwto.org/en/content/who-we-are-0 (retrieved 23 May, 2013)

8 Appendices

Appendix A

WIND POWER TOURISM QUESTIONNAIRE

Please take a few moments to complete this questionnaire.

UPPSALA UNIVERSITET

Q 1. Please indicate how many times you have visited Gotland since 2008.

1 2 3 4 5 > 5

Q 2. What was the main reason for having visited Gotland?

- ☐ Nature
- ☐ Culture & History
- ☐ Seaside & Weather
- ☐ Family & Friends
- ☐ Business/ Conference
- ☐ Dining & Gastronomy
- ☐ Other, please specify .....

Q 3. Please indicate how long you stayed on Gotland.

- ☐ Day trip only
- ☐ Overnight stay
- ☐ 1 - 3 days
- ☐ 4 - 7 days
- ☐ 7 days +

Q 4. Please indicate what type of accommodation you used during your stay on Gotland.

- ☐ Unpaid or own accommodation
- ☐ Paid accommodation
- ☐ Camping either paid or unpaid

Q 5. Did you see any wind turbines during your stay on Gotland?

- ☐ Yes
- ☐ No
- ☐ Unsure

Q 6. My impression of seeing wind turbines on Gotland may be described as

☹ Negative	😐 Neutral	☺ Positive	? Not applicable
☐	☐	☐	☐

Q 7. Please indicate to what extent you agree with the following statements.

My attitude to wind turbines before visiting Gotland could be described as

☹ Negative	😐 Neutral	☺ Positive
☐	☐	☐

My attitude to wind energy after visiting Gotland could be described as

☹ Negative	😐 Neutral	☺ Positive
☐	☐	☐

The presence of wind turbines on Gotland will have the following impact on my decision to return.

☹ Negative	😐 No impact	☺ Positive	? Unsure
☐	☐	☐	☐

I would be interested in visiting a wind farm on Gotland as a tourist attraction.

- ☐ Yes
- ☐ Maybe
- ☐ No

Q 8. Please indicate which categories describe you best.

Gender

- ☐ Male
- ☐ Female

Age

- ☐ under 18
- ☐ 19 - 30
- ☐ 31 - 55
- ☐ over 55

Country you most identify with

☐  ☐ 

☐  ☐ 

☐ 

Other, please specify

.....

Any comments? .....

Thank you very much for your participation in this survey. As a small "thank you", we hope you will enjoy our small gift.

Appendix B

VINDKRAFT OCH TURISM PÅ GOTLAND

Var vänlig och fyll i detta frågeformulär.

UPPSALA UNIVERSITET

F 1. Hur många gånger har du besökt Gotland sedan 2008?

1 2 3 4 5 > 5

F 2. Vilken var den främsta anledningen till ditt senaste besök på Gotland?

- ☐ Natur
- ☐ Kultur & Historia
- ☐ Sol & Bad
- ☐ Familj & Vänner
- ☐ Affärer/ Konferens
- ☐ Annat, nämligen .....

F 3. Hur länge varade din vistelse på Gotland?

- ☐ Endast över dagen
- ☐ 1 - 3 dagar
- ☐ 4 - 7 dagar
- ☐ > 7 dagar

F 4. Hur bodde du under din vistelse på Gotland?

- ☐ Hotel/ Vandrarhem/ Pensionat
- ☐ Stuga
- ☐ Camping
- ☐ Annat, nämligen .....

F 5. Såg du några vindkraftverk under din vistelse på Gotland?

- ☐ Ja
- ☐ Nej
- ☐ Vet ej

F 6. Ditt intryck av att se vindkraftverk på Gotland kan beskrivas som

Negativt	Neutralt	Positivt	Inte tillämplig
☐	☐	☐	☐

F 7. Välj det alternativ som bäst avspeglar dina åsikter.

Min inställning till vindkraftverk före besöket på Gotland kan beskrivas som

Negativ	Neutral	Positiv
☐	☐	☐

Min inställning till vindkraftverk efter besöket på Gotland kan beskrivas som

Negativ	Neutral	Positiv
☐	☐	☐

Förekomsten av vindkraftverk på Gotland kommer att ha följande påverkan på mitt beslut att återvända

Negativ	Ingen påverkan	Positiv	Vet ej
☐	☐	☐	☐

Jag skulle vara intresserad av att besöka en vindkraftspark på Gotland som turistattraktion.

- ☐ Ja
- ☐ Nej
- ☐ Kanske

F 8. Vänligen ange vilka kategorier som beskriver dig bäst

Kön

- ☐ Man
- ☐ Kvinna

Ålder

- ☐ under 18
- ☐ 19 - 30
- ☐ 31 - 55
- ☐ över 55

Land du mest identifierar dig med

☐ ☐ ☐ ☐ ☐

Annat, nämligen

.....

Eventuella kommentarer .....

Tack för din medverkan i denna undersökning. Vi hoppas att du uppskattar vår lilla present.

Appendix C

Nr.	Comment
	Pilot study comments
1	Trevligt att vistas på Gotland.
2	Jag tyckte mycket om Gotland! Jag vill komma tillbaka!
3	I knew University of Michigan/Uppsala has a wind power program here. I was wondering % of power produced was 40%!
4	I hear most energy on Gotland is renewable and I feel very happy about that!
5	Gotland = fantastiskt!
6	Tycker att vindkraft är ett bra energi alternativ.
7	Subvention till vindkraft? Hur mycket?
8	No nuclear
9	Hur mycket subventioneras vindkraften gentemot andra kraftverk.
10	Fult.
11	Go windpower!
1	Jag vill gärna ser mer vindkraft på Gotland. Googla: 'King Island Wind Farm Debate'
2	It was nice/great here!
3	Bra att vi använder vinden!
4	Positiv till vindkraft om den finns på avstånd från bebyggelse.
5	Bra för miljön.
6	Ljudet från vindkraftverk är negativt.
7	Beautiful island.
8	Jag vill inte se vindkraftverk på Fårö/Sudersand, men på andra ställen (ej populära turistmål) går det bra.
9	Mycket bra.
10	Ren energi.
11	Mer vindkraft & förnybar energi! :-)
12	Vi gillar Gotland!!!!!!
13	Better wind park on the Baltic sea.
14	Gotland är gott & glatt.
15	Jag hoppas att det blir fler vindkraftverk på Gotland & i hela Sverige i framtiden.
16	Bara inte få nära bebyggelse.
17	Bra för miljön med vindkraftverk.
18	Bra med alternativ energi.
19	Har sett vindkraftverk förut, men aldrig nära min semesterort. Skulle de förekomma nära min semestervistelse, skulle jag byta ort/ställe vid nästa tillfälle.
20	Bra placerade störde ej.
21	Har besökt Näsudden vid tidigare Gotlandsbesök.
22	Det var jätte roligt att besöka Gotland :-) Hejdå!
23	Bra alternativ.

24	Trodde det skulle vara fler vindkraftverk.
25	Take positive experience with me. Expensive accommodation.
26	Vi elsker Gotland.
27	Svindyra resor till Gotland!!!!
28	Wonderful island!
29	Tycker de är vackra och smäckra.
30	Jag tycker de är vackra!! Låt konstnärer dekorera dom!!!
31	Trist med vindkraftverken så nära kusten.
32	Gotland is a great opportunity for wind turbines. Go for it!
33	I love Gotland.
34	Vindkraft är nödvändigt för att sluta använda våra ändliga resurser.
35	Antalet vindkraftverken på Näsudden gjorde mig negativt inställt till så många snurror på ett och samma ställe. Man vänder bort blickar och åker någon annanstans. Tacksamhet för att slippa snurrorna på Fårö. De få snurrorna i Lickershamn var helt OK!
36	Vindkraft är en dyr energiform som klarar sig enbart via subventioner.
37	Oerhört viktigt att placera dessa verk, utifrån hänsyn till orörd horisont, natur- och kulturvärden och öns känsliga fågelarter.
38	More free showers on the beach please.
39	Fula.
40	Angenämnt och fjantet.
41	Det borde blåsa så det räcker till.
42	Fler ställplatser för husbilar.
43	Fula men behövs.
44	Överföring - fungerar ej - subventionerat av svenska staten - minus.
45	Vindkraften är ful. Bullrar och kan inte leverera el när den behövs.
46	Hellre vindkraftsparker är mycket utspridda verk.
47	De står stilla oförklarligt ibland.
48	Dåligt med återvinnings ställen.
49	Överdådliga vyer.
50	Är mycket nöjd med min vistelse på Gotland.
51	I det här antalet och med de här placeringarna stör de ej. Fler skulle bli en olägenhet.
52	Kul att se på.
53	Det finns alternativ på sikt avvecklas vindkraften.
54	Hade varit kul att se att man utnyttjar naturen.
55	Positiv till förnyelsebar energi, negativ till oljud, olägenhet för fåglar och missprydande i landskapsbilden.
56	Positiv
57	Samlar dem i parken.
58	Bra att det är miljövänligt, akta fåglarna bara.
59	Finns massor av vindkraftverk där vi kommer ifrån.
60	Positivt att se att naturliga energi källor används.
61	Jag tror på solceller.
62	Det räcker som det är! Ej bra för fåglar! Bullerproblem!
63	Mycket positivt att se att man utnyttjar vinden som energikälla.
64	På norra Gotland ok, södra Gotland inte snyggt.

65	Mer vindkraft i världen, speciellt på Bahamas!
66	Ser illa ut!
67	Bra med vindkraft!
68	Ren energikälla.
69	Bra att utnyttja naturens krafter.
70	We have many wind turbines in the north of Germany! Enercon! Our home town will be called 'Enercon City' in the future!
71	Van vid dem på Östgötaslätten hemma….Bra om de ej än för många på samma ställe och ej på Fårö!
72	Vindkraft är opålitlig och både miljö- och kapitalförstörande.
73	Placeringen av kraftverk ACCO, hellre en park utanför än enskilda möller överallt, då börjar de störa vyerna.
74	Vindkraft subventionerad miljöbov.
75	Bra att placera vindkraft vid Gotland ring - buller stör ej.
76	We löv Gotland.
77	Placeras i hamnar och andra platser där det redan finns industri-inriktade byggnader t.ex. Klintehamn.
78	Borde kunna driva hela Gotland med vindkraftverk om det redan är 40%.
79	Hittegodsavdelningen borde ha öppet dagtid.