Interreg North-West Europe

Co-funded by the European Union

MONA

Resident surveys - Baseline

Document/Deliverable name	D.1.7.1 Resident surveys – Baseline
Author(s)	Neuts, B.; Nawijn, J,; Farkic, J.
Status (Final, Draft)	Final
Date	24 December 2024

Table of contents

1. ABOUT MONA 5
2. ABOUT THIS DOCUMENT 6
3. METHODOLOGY 7
3.1 Nature areas and interventions 7
3.2 Resident survey 7
3.2.1 Contents 7
3.2.2 Sampling 9
4. RESULTS FOR LOONSE AND DRUNENSE DUINEN 10
4.1 Characteristics of the sample 10
4.2 Visitation to the nature area 11
4.3 Transportation choices 13
4.4 Perceived impacts of the nature area 14
5. RESULTS FOR UTRECHTSE HEUVELRUG 18
5.1 Characteristics of the sample 18
5.2 Visitation to the nature area 19
5.3 Transportation choices 20
5.4 Perceived impacts of the nature area 22
6. RESULTS FOR SCARPE-ESCAUT 25
6.1 Characteristics of the sample 25
6.2 Visitation to the nature area 26
6.3 Transportation choices 28
6.4 Perceived impacts of the nature area 29
7. CONCLUSIONS AND RECOMMENDATIONS 32

8. REFERENCES 33
9. APPENDIX 1: MONA RESIDENT SURVEY 34
10. APPENDIX 2: FREQUENCY TABLES 45
11. APPENDIX 3: ADDITIONAL QUESTIONS PER NATURE AREA 52
11.1 Loonse and Drunense Duinen 52
11.2 Utrechtse Heuvelrug 52
11.3 Scarpe-Escaut 52

Table of tables

Table 4.1: Age categories of respondents (n = 605) 10
Table 4.2: Educational level of respondents (n = 605) 10
Table 4.3: Reasons for visiting (n = 605) 11
Table 4.4: Transportation choices (n = 605) 13
Table 5.1: Age categories of respondents (n = 102) 18
Table 5.2: Educational level of respondents (n = 102) 18
Table 5.3: Reasons for visiting (n = 102) 19
Table 5.4: Transportation choices (n = 102) 21
Table 6.1: Age categories of respondents (n = 74) 25
Table 6.2: Educational level of respondents (n = 74) 25
Table 6.3: Reasons for visiting (n = 74) 26
Table 6.4: Transportation choices (n = 74) 28

Table of figures

Figure 4.1: Activities conducted in Loonse and Drunense Duinen (n = 605) 12
Figure 4.2: Correlations between activities (n = 605) 13
Figure 4.3: Reasons for not selecting public transportation options (n = 605) 14
Figure 4.4: Perception of positive impacts (n = 605) 15
Figure 4.5: Perception of negative impacts (n = 605) 16
Figure 4.6: Pro-environmental behaviour of others (n = 605) 17
Figure 5.1: Activities conducted in Utrechtse Heuvelrug (n = 102) 20
Figure 5.2: Correlations between activities (n = 102) 20
Figure 5.3: Reasons for not selecting public transportation options (n = 102) 21

Figure 5.4: Perception of positive impacts (n = 102) 23
Figure 5.5: Perception of negative impacts (n = 102) 23
Figure 5.6: Pro-environmental behaviour of others (n = 102) 24
Figure 6.1: Activities conducted in Scarpe-Escaut (n = 74) 27
Figure 6.2: Correlations between activities (n = 74) 27
Figure 6.3: Reasons for not selecting public transportation options (n = 74) 28
Figure 6.4: Perception of positive impacts (n = 74) 29
Figure 6.5: Perception of negative impacts (n = 74) 30
Figure 6.6: Pro-environmental behaviour of others (n = 74) 31

1. About MONA

Nature areas in North-West Europe (NWE) face an increasing number of visitors (intensified by COVID-19) resulting in an increased pressure on nature, negative environmental impacts, higher management costs, and nuisance for local residents and visitors. The high share of car use exaggerates these impacts, including peak pressures. Furthermore, the almost exclusive access by car excludes disadvantaged people, specifically those without access to a car. At the same time, the urbanised character of NWE, its dense public transport network, well-developed tourism and recreation sector, and presence of shared mobility providers offers ample opportunities for more sustainable tourism.

Interreg NWE project "MOdal shift, routing and nudging solutions in NAture areas for sustainable tourism" (MONA) aims to ensure that sustainable tourism practices in and around nature areas benefit nature, the environment, visitors, and the local economy. MONA does so by encouraging a modal shift through a number of interventions, namely facilitating sustainable transport modes, providing inclusive routing to and within nature areas, and nudging visitors and stakeholders towards more sustainable behaviour.

2. About this document

The purpose of this document is to describe the results of the baseline resident surveys, carried out in 2024 at three nature areas in NWE, each representing one pilot group within MONA project. This report forms the baseline measurement for the follow-up visitor surveys at the end of the MONA project. These are going to be described in D1.7.2, focusing on the effects of the interventions.

The results of the baseline visitor surveys are reported in D1.6.1 and partly follow the same approach taken here. Therefore some parts of this report are identical or similar to those of D.1.6.1.

3. Methodology

3.1 Nature areas and interventions

As described in D.1.1.1, the MONA project's Pilot A group, brings together National Park Utrechtse Heuvelrug (the Netherlands), Grenspark Kalmthoutse Heide (Belgium) and National Park Montagne de Reims (France). Pilot A group is specifically looking into the encouragement of the **modal shift** from car use to more sustainable mobility options. Within MONA project they are investigating how train stations can be further used as "green entrances" to the nature areas and researching the possibilities of soft mobility options facilitation via mobility hubs. Modal shift is closely related to the determinants of the mobility behaviour to and within nature areas. Pilot B group, brings together Tourism Province of Antwerp in Belgium, and Visit Brabant and National Park Veluwezoom in the Netherlands, that are focusing their activities on **routing** and re-routing for the purpose of sustainable mobility behaviour, improved visitor spread within and outside of nature areas, and more efficient use of strained natural resources. Pilot C group brings together National Park Montagne de Reims and National Park Scarpe – Escaut in France and Tourismus Zentrale Saarland in Germany. This Pilot group focus their activities on **nudging** sustainable mobility behaviour.

Three nature areas with a unique intervention taking place in each of them were used as sites for data collection. The purpose thus was to have one nature area for modal shift, one for routing, and one for nudging. The nature areas that are included in the visitor (and resident) surveys are **Utrechtse Heuvelrug** for modal shift, **Loonse and Drunense Duinen** (as part of Visit Brabant) for routing, and **Scarpe – Escaut** for nudging.

3.2 Resident survey

The MONA proposal indicated that the resident survey is part of the monitoring and relates to the impacts on residents of living in or near the nature areas. Impacts could be both positive and/or negative. Resident surveys would be conducted in at least one nature area per pilot. Within MONA project, the surveys are planned to be carried out at two moments: a baseline measurement at the beginning of the project, and effect measurement toward its end. The combination would allow for monitoring the effects of the interventions. The actual resident surveys that were carried out followed this approach outlined in the proposal, but with additional content, which is discussed further in 3.2.1.

3.2.1 Contents

The contents of the resident survey, according to the MONA proposal, would be that the resident survey covered: **(1) local support for tourism-recreational development**, **(2) positive and negative impacts of tourism in the nature areas** (e.g. social, economic, traffic-related) and, **(3) the value of recreational opportunities provided by the proximity of the nature areas**. Next to these topics, the following topics that are also

part of the visitor surveys were included: **(4) understand current visitor behaviour**, **(5) modal choice**, and **(6) socio-demographics**. Like in the visitor surveys, a few specific questions for each nature area are included in each resident survey. These are reported in Chapters 4, 5, and 6.

(1) Local support for tourism-recreational development. The resident survey included three items asking the respondents about their opinions on the development of tourism and recreation in their nature area. These items were based on work by Zaman et al. (2023).

(2) Positive and negative impacts of tourism in the nature areas. The survey included 15 items tapping impacts of recreation and tourism of the nature area. These included a mix of items generally seen as either positive or negative. These items are a mix of environmental, economic, and socio-cultural impacts based on the work of Moyle et al. (2013) and Jones et al. (2020). Furthermore, two items measured perceived quality of life of the residents. These items addressed the extent to which they like the city/region they live in and their ability to enjoy themselves in the city/region they live in, adapted from World Health Organization (1998).

(3) The value of recreational opportunities provided by the proximity of nature areas. The visitor surveys included a question that dealt with motivations of the visit. In the resident survey, these motivations were also included as they can be seen as recreational opportunities of the nature area, potentially valued by residents. The wording of this particular question was slightly adjusted to reflect such recreational opportunities. The content remained the same and thus included typical tourism motivations largely based on foundational work in the field of tourism motivations by Pearce and Lee (2005) but applied to the context of nature areas.

(4) Understand current visitor behaviour. The resident survey included a question on how often they visit the nature area in question. As in the visitor surveys, a question belonging on the number of activities that people generally participate in was included. This list was compiled in close cooperation with the nature areas and identical to the visitor survey. Finally, as in the visitor survey, a question on pro-environmental behaviour was included, using the same items and scoring. These statements were based on work by Zhang et al. (2023), Natural England (2022), and, Wilson (2018).

(5) Modal choice. Like in the visitor surveys, respondents were able to select a number of travel modes they used to reach the nature area. Furthermore, they could provide pre-defined reasons for not choosing public transport, again using tick boxes. The answer options were largely based on the work of Anable (2005).

(6) Socio-demographics. Socio-demographic data included in the survey were age, gender, and educational level, which are commonly included in surveys. Respondents were also asked whether they considered themselves neurodivergent and whether they

had a physical disability. These two socio-demographics would potentially provide information on accessibility of the nature and motivations to visit.

The survey questions that were used in all resident surveys are included in Chapter 9.

3.2.2 Sampling

The nature areas were in charge of arranging the data collection. Data were collected over the summer of 2024. Data for Scarpe – Escaut and Loonse and Drunense Duinen were collected using onsite QR codes and interviewers, and for Utrechtse Heuvelrug by use of an online panel of a market research organization. Participation was completely voluntary and participants had to be at least 16 years old to participate, which complies with the GPDR. No private information was asked for in the surveys. For the online survey designed in Qualtrics, IP-tracking was turned off for all surveys. The market research organization used panels consisting of adults who participated in these panels on a voluntary basis. Surveys were conducted in English, Dutch, French, and German, depending on the nature area in question. These translations were performed via Qualtrics translation services, and checked by native speakers of the nature areas or the research team. The net responses were 74 for Scarpe – Escaut, 605 for Loonse and Drunense Duinen, and 102 for Utrechtse Heuvelrug.

4. Results for Loonse and Drunense Duinen

4.1 Characteristics of the sample

This chapter starts with an overview of the socio-demographic characteristics of the sample. Of the 605 respondents, 205 (33.9%) were male, 383 (63.4%) female, with 2 people (0.3%) identifying as non-binary/third gender, another 2 respondents (0.3%) preferring to self-describe, and 12 people (2.0%) preferring not to answer the question. There thus seems to be a gender imbalance in responses with women having an above-average representation in the sample. As is often the case in survey research, without additional quotas and stratified sampling, younger respondents are underrepresented, with only 7.3% being below 35 years old. As can be seen from Table 4.1, the distribution is skewed towards older age categories, with nearly half of the sample (48.9%) being 55 or older.

Table 4.1: Age categories of respondents (n = 605)

Age category	Count	Percentage
Under 18	1	0.2%
18-24 years old	5	0.8%
25-34 years old	38	6.3%
35-44 years old	100	16.5%
45-54 years old	165	27.3%
55-64 years old	166	27.4%
65+ years old	130	21.5%

In terms of educational level of the sample are people with a bachelor's degree best represented (32.0%), followed by people with a vocational or similar type of education (21.5%). A nearly equal amount of people had a graduate or professional degree (15.9%) and a secondary school degree (15.2%). Only 1.4% of the sample had not at least completed secondary school. The sample is therefore relatively highly educated with nearly half of respondents having completed a university degree.

Table 4.2: Educational level of respondents (n = 605)

Educational level	Count	Percentage
Some primary school	2	0.3%
Completed primary	2	0.3%
Some secondary school	5	0.8%
Completed secondary school	92	15.2%
Vocational or similar	130	21.5%
Some university but no degree	59	9.8%
University bachelor's degree	193	32.0%

Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)	96	15.9%
Prefer not to say	25	4.1%

A final aspect of interest, primarily related to inclusivity and accessibility, was related to whether participants experience potential physical or mental challenges. A total of 26.4% answered positive on the question of neurodivergence, compared with 15% of visitors (see D1.6.1) who answered positively to the same question. This might be indicative of the fact that people who consider themselves neurodivergent are less likely to visit a nature area. In terms of physical disability, 11.6% of the sample indicated that they have a physical disability, while this percentage was 9.6% in the visitor surveys.

4.2 Visitation to the nature area

The residents living in proximity to nature area have the opportunity to more frequently visit the nature area this study perceived as both resident and visitor. For example, the majority of residents living in the vicinity of Loonse and Drunense Duinen visit the nature area at least once a week (51.3%), with another 25.9% visiting at least once a month. 13.1% visit at least once on a quarterly basis, with one of ten people visiting at most once a year (7.5% visiting at least once a year, and 2.2% visiting less than once a year).

Respondents could indicate multiple motivations to visit. Logically, particularly for nearby residents, nature areas can be multifunctional and not solely provide opportunities for one specific type of behaviour. As can be seen from Table 4.3, multiple motivations score highly, in particular those to relax (88.4%), to exercise (79.3%), to be close to nature (72.2%) and to de-stress (50.9%). Spending time with friends or family where significant reasons for about one in three respondents (29.6%). To learn something new (2.8%), to do business (0.3%), or to attend an organized event (3.1%) score low overall, as they did in the visitor surveys (see D1.6.1). Spending time alone (35.4%) scores substantially higher than it did in the visitor survey, where only 7.3% mentioned this as a main reason for visiting. Only modest correlations could be found between reasons to visit, with the highest positive correlations for de-stressing, being close to nature (0.211), escaping the city (0.209), relaxing (0.172), and spending time alone (0.325).

Table 4.3: Reasons for visiting (n = 605)

Reasons for visiting	Count	Percentage
For business purposes	2	0.3%
Other reasons	50	8.3%
To attend an organized event	19	3.1%
To be close to nature	437	72.2%
To de-stress	308	50.9%
To escape the city	37	6.1%
To exercise	480	79.3%

To learn something new	17	2.8%
To relax	535	88.4%
To spend time alone	214	35.4%
To spend time with friends or family	179	29.6%

In terms of activities, shown below in Figure 4.1, hiking/walking is most reported (90.2%), followed by cycling or gravel biking (41.8%), and dog walking (39.3%). Also in the top five of activities performed are photography (26.4%) and observing plants or animals (19.5%). There is a stark contrast with the results of the visitor surveys (D1.6.1) in which those visitors were much more likely to participate in horse riding (20.3%) and running (26.9%), with canoeing, kayaking or rafting (14.6%) also often being mentioned. In contrast, for local residents, horse riding (9.9%), running (11.9%) and canoeing, kayaking or rafting (0.3%) are much less common. This might therefore indicate that such activities are primarily attracting longer-distance visitation rather than local recreation.

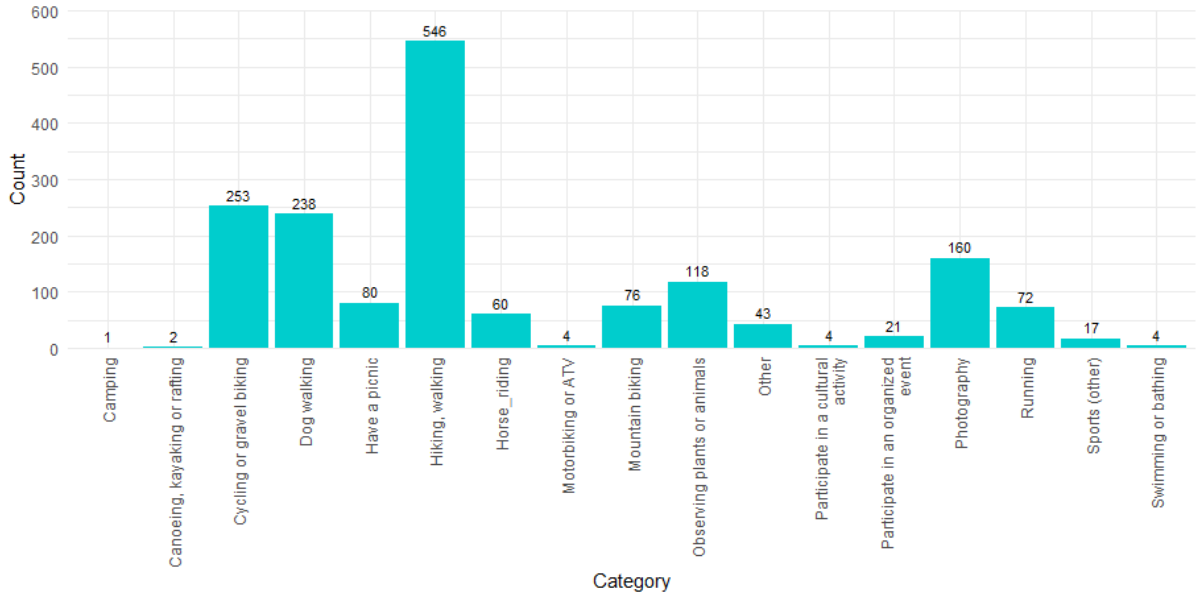
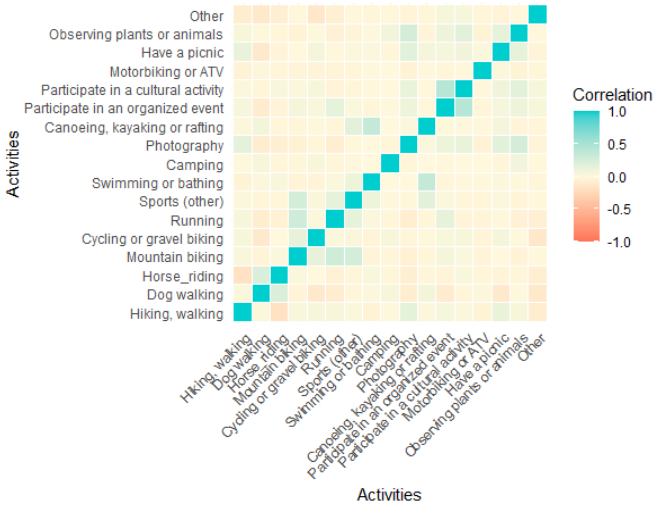


Figure 4.1: Activities conducted in Loonse and Drunense Duinen (n = 605)



The correlation matrix of Figure 4.2 shows very little overlap in selected activities. The only somewhat relevant positive correlations of note can be found between photography, having a picnic (0.175), and observing plants or animals (0.263), as well as between dog walking and horse riding (0.231).

Figure 4.2: Correlations between activities (n = 605)

An additional question in Loonse and Drunense Duinen mirrored the question posed in the visitor survey and was used to get additional insights into the return potential and visitor routing potential. Quite logically for local residents, there was a very high incidence of people agreeing they would certainly return to Loonse and Drunense Duinen (99.3%), with 35.9% mentioning that they would like to visit another nature area in a next visit – a score that is less than half of the score among visitors (see D1.6.1). The sand dunes were a main characteristic and reason to visit for 67.1%, while only 20.0% had prepared the visit extensively. Local visitors mainly used the designated routes to move around Loonse and Drunense Duinen (76.2%). Finally, only a limited – and lower percentage – of residents would consider alternative starting points that are close to but outside Loonse and Drunense Duinen (25.6%). This seems to indicate that it is more challenging to spread local visitors around than to influence the behaviour of other visitors.

4.3 Transportation choices

Local residents were further asked how they would generally reach the nature area. Not surprisingly, public transport is used even less here – only 1 person (0.2%) indicating using the regular bus – than was the case for general visitors (D1.6.1). On the other hand, there is a much larger incidence of bicycle use (61.3%) and travelling on foot (43.0%), due to the proximity of the nature area. Still, even in such cases, car remains dominant means of transportation to nature areas (63.3%).

Table 4.4: Transportation choices (n = 605)

Transportation choice	Count	Percentage
By bicycle	371	61.3%
By camper van	2	0.3%
By car	383	63.3%
By motorbike	4	0.7%

By regular bus	1	0.2%
By shuttle bus	0	0.0%
By train	0	0.0%
On foot	260	43.0%
Other	29	4.8%

Figure 4.3 outlines the main reasons mentioned for not having used public transport, with the 'other' reason (54.9%) far outperforming other choices. While this selection was not specified, it likely concerns the fact that public transport is not a viable/useful options due to the proximity of the nature area that is only a short walk or drive away and therefore efficient public transport routes are unlikely to exist. This might also be reflected in the second most selected option: inconvenient location of train station or bus stop (30.9%), as well as the third-strongest reason: longer travel times (17.7%). For local recreation, public transport will therefore be an unlikely alternative to existing modal choices.

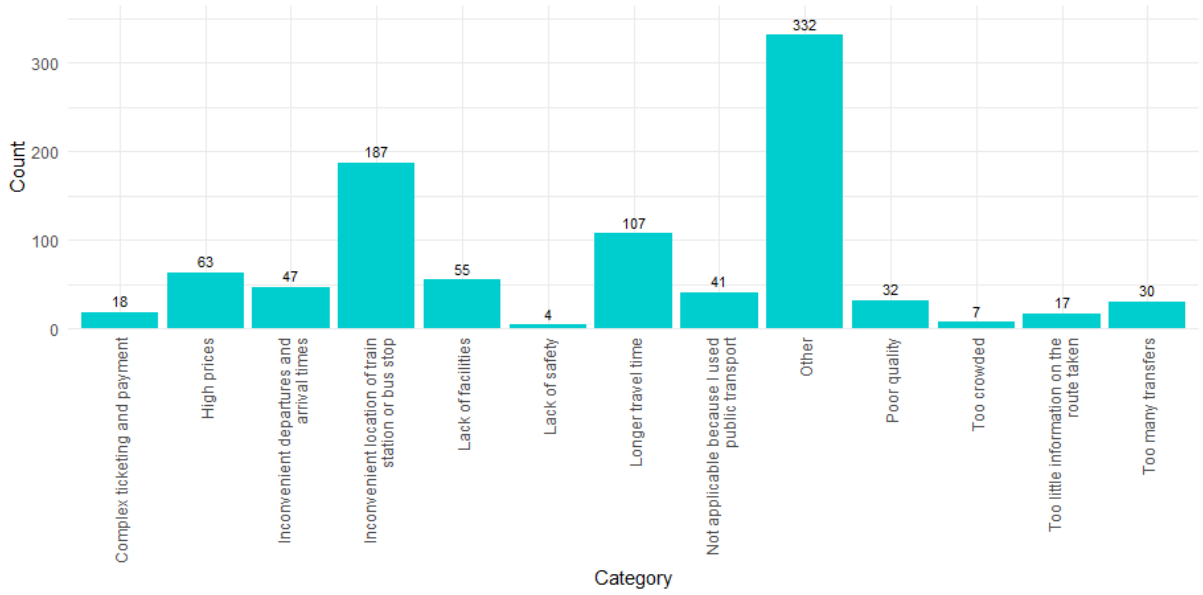


Figure 4.3: Reasons for not selecting public transportation options (n = 605)

4.4 Perceived impacts of the nature area

First of all, we examined a more general expression of satisfaction with the living environment. Less than five percent (0.8% not enjoying it at all, and 3.6% enjoying it a little) are not at least moderately satisfied with life in their city/region. 10.1% moderately like the city/region they live in, and a large majority like the area very much (74.9%) to an extreme amount (10.6%). Responses to the question of whether people are able to relax and enjoy themselves in the city/region they live in follow a similar pattern, with only 1.0% of respondents not at all able to relax, and 5.1% only able to relax and/or enjoy themselves a little. 7.9% indicate moderate opportunities, while 57.5% are able to mostly enjoy

themselves/relax and a further 28.5% able to completely answer their needs for relaxation and enjoyment within the own region.

Apart from the opportunities for direct recreational use, the proximity of nature areas can bring additional positive and negative impacts to a region. Figure 4.4 and Figure 4.5 highlight the perceived positive and negative effects on the region. Strikingly, only a few positive externalities are recognized by a significant number of respondents. 64.1% of people agree that the nature area brings revenue for local businesses, and 35.2% agree that it offers additional recreational opportunities. One in five people (20.3%) also agree that the nature area creates jobs for local residents. However, there is much less agreement on the proposed effect of income creation for preservation and restoration, with only 7.6% agreeing that the nature area generates funding for infrastructure and facilities, 6.8% agreeing that the park generates financial resources for local services, and 14.4% agreeing that the protected area offers opportunities to restore/protect historical infrastructure. There also appears to be a limited effect on the involvement of local communities (13.4%) and on the variety in cultural activities/programmes (3.6%).

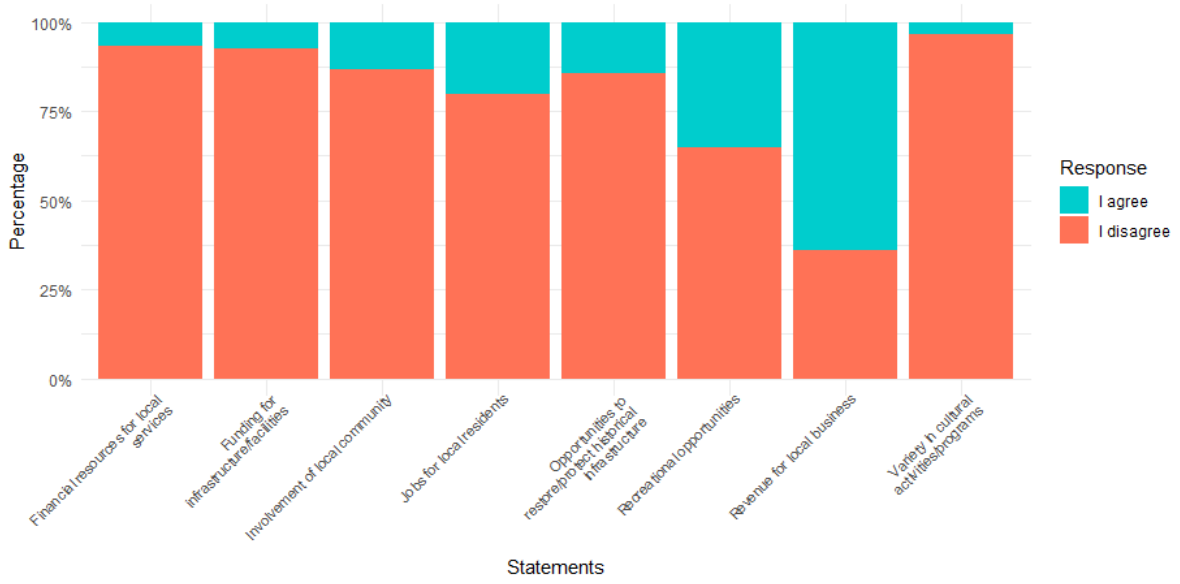


Figure 4.4: Perception of positive impacts (n = 605)

Comparing Figure 4.5 to Figure 4.4, it is clear that a few negative impacts are more widely recognized by respondents. 77.2% agree that visitation to Loonse and Drunense Duinen increases crowding within the nature area, while 71.1% are of the opinion that as a result, pollution and littering increases as well. Furthermore, 55.0% agree that visitation can lead to changes in the behaviour of wildlife and 51.7% agree that natural assets are deteriorated due to tourism and recreation. On the other hand, only a quarter of people attribute traffic issues to the nature area, with 27.9% agreeing that tourism increases parking issues for locals and 27.1% seeing visitation to Loonse and Drunense Duinen as a contributing factor of traffic congestion. Other potential negative effects are less likely to

occur or be recognized. While still 17.7% agrees to the statement that tensions between visitors and the local community can arise, only 6.4% perceives an increase in crime as a potential negative impact, and just 1.7% attributes a higher cost of living to tourism and recreation at Loonse and Drunense Duinen.

Figure 4.5: Perception of negative impacts (n = 605)

Comparing local reflections on positive and negative impacts, it appears that respondents do see positive economic benefits of the nature area, but that these are considered relatively minor, since they are not being attributed to creating additional jobs or revenues for infrastructure development. On the negative side, visitation is seen to cause environmental degradation and crowding, but with more minor effects of traffic and (almost) no effect on local cost-of-living.

Since the impacts of visitors on the local environment are noted as a significant concern, it is useful to further identify which positive/negative behaviour is more often recognized among other visitors. As can be seen from Figure 4.6, while a majority still agrees that visitors mostly behave according to environmental guidelines, perceptions are in general less positive than was the case in the visitor surveys (see D1.6.1). Notable negative perceived behaviours are keeping dogs on a leash, where only 39.3% of respondents agree that most visitors respect such requirements, disturbing wildlife, with just 57.2% agreeing that visitors generally do not disturb wildlife, and respect the peace-and-quiet of the nature area, with 59.8% agreeing that visitors adhere to responsible practices. Two out of three respondents agree that most visitors stay on designated trails (65.6%) and follow environmental guidelines (66.6%). 72.2% agree that most people properly dispose of garbage, 74.5% are of the opinion that people leave rocks, stones, plants, and trees undisturbed, and 77.4% find that people generally do not disturb ruins or historic sites. While these results are not tellingly negative, it is interesting to note that local residents

perceive the behaviour of visitors more negatively than visitors do when judging the impact of fellow visitors.

Figure 4.6: Pro-environmental behaviour of others (n = 605)

Finally, a few questions were linked with future development perspectives. In Loonse and Drunense Duinen, Only 27.1% of respondents agreed with the statement that tourism and recreation should be further developed and just 9.5% agreed that the volume of tourists should be increased. Similarly, only a quarter of people (26.3%) found that the local government should provide additional funding for the promotion of tourism and recreation in nature areas. Therefore, even though the negative impacts experienced in the neighbourhood are still relatively small, people are apprehensive about any further growth.

5. Results for Utrechtse Heuvelrug

5.1 Characteristics of the sample

The sample of residents around Utrechtse Heuvelrug, approached via a panel-based study, contained 102 observations, of which 46 (45.1%) were male, and 56 (56.9%) female. The gender balance in the sample was therefore relatively similar to populations statistics, albeit somewhat skewed towards female respondents. Notably from Table 5.1, there is a large discrepancy in the age distribution of the sample, with only 2 respondents being younger than 34 and an additional 9 respondents in the category 35-44. The sample is highly skewed towards older age categories, with 74.5% of the sample being 55 or older (21.6% in the category 55-64 and 52.9% in the category 65+).

Table 5.1: Age categories of respondents (n = 102)

Age category	Count	Percentage
Under 18	0	0.0%
18-24 years old	0	0.0%
25-34 years old	2	2.0%
35-44 years old	9	8.8%
45-54 years old	15	14.7%
55-64 years old	22	21.6%
65+ years old	54	52.9%

Just over one quarter of the sample (30.4%) at most completed secondary school, with an additional 18.6% having finished vocational studies or similar. 12.7% of the sample completed some university, without finishing the degree, while 38.2% finished either a bachelor's degree (20.6%) or a graduate or professional degree (17.6%).

Table 5.2: Educational level of respondents (n = 102)

Educational level	Count	Percentage
Some primary school	1	1.0%
Completed primary	1	1.0%
Some secondary school	3	2.9%
Completed secondary school	26	25.5%
Vocational or similar	19	18.6%
Some university but no degree	13	12.7%
University bachelor's degree	21	20.6%
Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)	18	17.6%
Prefer not to say	0	0.0%

Since MONA also focuses on social inclusivity and accessibility, aspects of neurodiversity and physical disabilities are taken into account as well. 14% of the sample indicated being neurodiverse and 21.6% mentioned having a physical disability – compared to 13.1% indicating a physical disability in the visitor surveys (D1.6.1). Although it should be noted that not all respondents were aware about the concept of neurodiversity, potentially leading to an underrepresentation or general unreliability in data.

5.2 Visitation to the nature area

Since residents are likely also visitors of Utrechtse Heuvelrug, it is important to understand local use of the nature area. The majority of surveyed residents visit Utrechtse Heuvelrug at least once a week (55.9%), followed by another 16.7% visiting at least once a month. One in ten (9.8%) visit at least once every three months, while 6.9% claim to visit at least once a year and another 10.8% visiting less than once a year.

Main reasons to visit are outlined in Table 5.3, with both exercising (65.7%) and relaxing (64.7%) scoring highest, followed by the motive to be close to nature (54.9%). Both de-stressing (34.3%) and spending time alone (19.6%) are also significant visitor motivations, as is socializing with friends or family during a trip (21.6%). Just like in Loonse and Drunense Duinen, spending time alone seems to be a stronger motivation for residents than for other visitors (see D1.6.1). Interestingly, almost one in three people (30.4%) also indicates other reasons to visit, which remained undefined in the survey and was mentioned much more often by residents than by visitors (where only 3.3% selected other reasons, see D1.6.1). Looking into significant correlations, there were positive links between being close to nature and exercising (0.341), de-stressing (0.282), and relaxing (0.238). Furthermore, other reasons were significantly negatively correlated with being close to nature (-0.344), exercising (-0.375), spending time with friends or family (-0.295) and relaxing (-0.538), indicating that respondents who selected one or more of these motivation were much less likely to also indicate further ulterior motives.

Table 5.3: Reasons for visiting (n = 102)

Reasons for visiting	Count	Percentage
For business purposes	1	1.0%
Other reasons	31	30.4%
To attend an organized event	2	2.0%
To be close to nature	56	54.9%
To de-stress	35	34.3%
To escape the city	2	2.0%
To exercise	67	65.7%
To learn something new	0	0.0%
To relax	66	64.7%
To spend time alone	20	19.6%
To spend time with friends or family	22	21.6%

Selected activities are shown in Figure 5.1, with hiking/walking taking the top spot (86.3%), performed by a large majority of visitors. Similar to Loonse and Drunense Duinen, cycling or gravel biking came second (47.1%) and was mentioned almost twice as much in the resident surveys as it was in the visitor surveys (D1.6.1), and dog walking third (26.5%). Photography (9.8%), observing plants or animals (13.7%) and other motivations (13.7%) are of relatively similar importance. Interestingly, in the surveyed sample, both mountain biking (5.9%) and running (6.9%), horse riding (2.0%), having a picnic (5.9%), or practicing other sports (5.9%) are seldom mentioned.

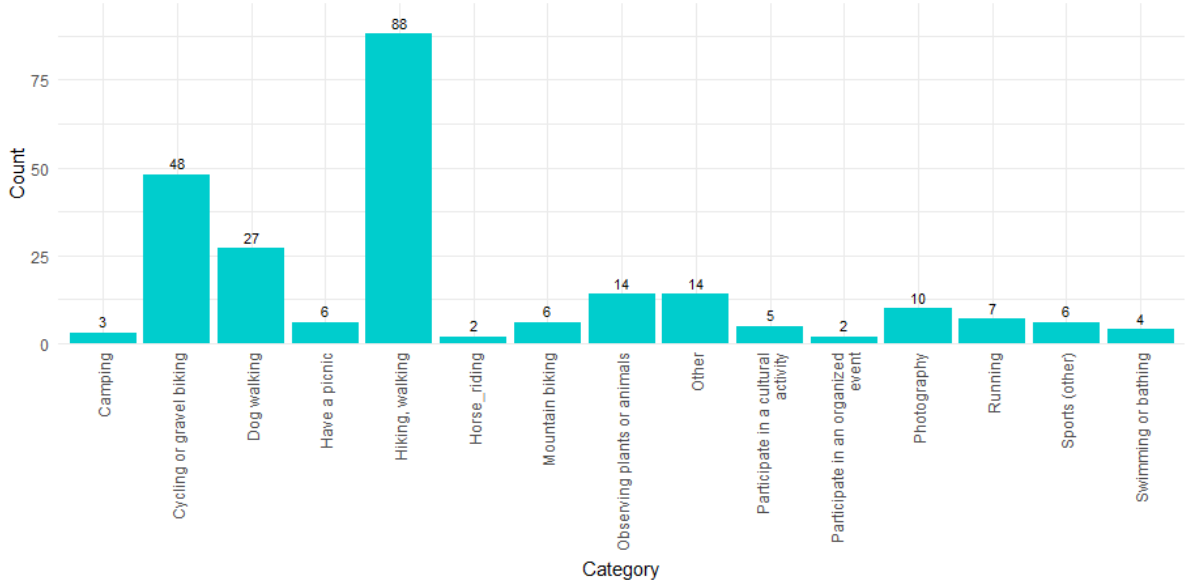


Figure 5.1: Activities conducted in Utrechtse Heuvelrug (n = 102)

The correlation matrix of Figure 5.2 shows little overlap between visitor motivations, with only participation in cultural activities and participation in organized events seemingly positively correlated (0.623), but this having primarily to do with the low number of respondents who mentioned these activities.

Figure 5.2: Correlations between activities (n = 102)

5.3 Transportation choices

On the question of transportation to and from Utrechtse Heuvelrug, there is a dominance of soft means of transportation among local residents, with going on foot (67.6%) and

going by bicycle (54.9%) outperforming car use (41.2%), even though the latter still remains a significant form of transportation, also for local residents. Understandably, public transportation options are not often used, since they often provide much less efficient routes for local residents.

Table 5.4: Transportation choices (n = 102)

Transportation choice	Count	Percentage
By bicycle	56	54.9%
By camper van	0	0.0%
By car	42	41.2%
By motorbike	0	0.0%
By regular bus	2	2.0%
By shuttle bus	0	0.0%
By train	1	1.0%
On foot	69	67.6%
Other	7	6.9%

The reasons not to select public transport are outlined in Figure 5.3 with a dominance of the 'other' category (72.5%) which indicates a lack of choice for public transport due to the proximity of the park making it more accessible on foot or by bicycle. Related to this is the second highest reason of longer travel times (20.6%) by public transport and an inconvenient location of train stations or bus stops (13.7%).

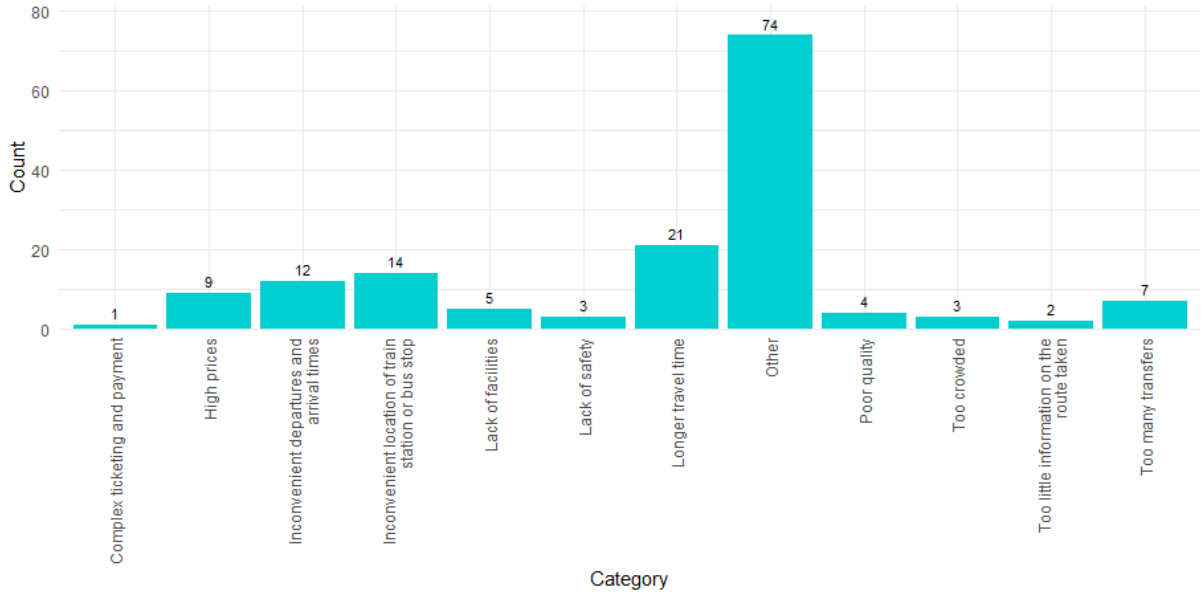


Figure 5.3: Reasons for not selecting public transportation options (n = 102)

An additional question examined local residents residing near Utrechtse Heuvelrug attitude with regard to mobility management. About a quarter of participants (26.5%)

agreed that paid parking should be implemented in order to reduce car use of visitors. In comparison, non-financial nudges towards pro-environmental transportation choices were supported more. Three quarters of the sample (76.5%) agreed that facilities for sustainable mobility such as bike parking and charging facilities for electric bikes should be more available, and half of the respondents (51.0%) felt that shared mobility such as (electric) bikes and (electric) carrier bikes should be more generally available as a way to reduce car use.

5.4 Perceived impacts of the nature area

In terms of general satisfaction with living in the region/city, three percent (1% not enjoying it at all, and 2.0% enjoying it a little) are less than moderately satisfied. 4.9% moderately like the region, and a large majority like the area very much (77.5%) to an extreme amount (14.7%). Responses to the question of whether people can relax and enjoy themselves in the city/region are largely comparable, with only 1.0% of respondents not at all able to relax, and 1.0% only able to relax and/or enjoy themselves a little. 2.0% are moderately able to relax and enjoy themselves, while more than nine out of ten people (60.6% mostly, and 35.4% completely) find much opportunity for recreation in the area.

Nature areas can bring additional positive and negative impacts to a region, which are visualized in Figure 5.4 and Figure 4.5. Similar to Loonse and Drunense Duinen, respondents tend to only identify a limited number of positive effects. 67.6% agree that Utrechtse Heuvelrug brings revenue for local businesses, but only about one in five people (22.5%) also believe that it creates jobs for local residents and provides opportunities to restore/protect historical infrastructure (22.5%). Interestingly, even though many local residents actively use the nature area, as discussed before, only a quarter (23.5%) identifies these recreational opportunities as a positive benefit. Only one in ten people believe that visitation to Utrechtse Heuvelrug provides macro-economic benefits in terms of funding for infrastructure/facilities (9.8%) or financial resources for local services (9.8%). Finally, local residents see little impact of the nature area in terms of involvement of the local community (6.9%) or variety provided in cultural activities/programmes (5.9%).

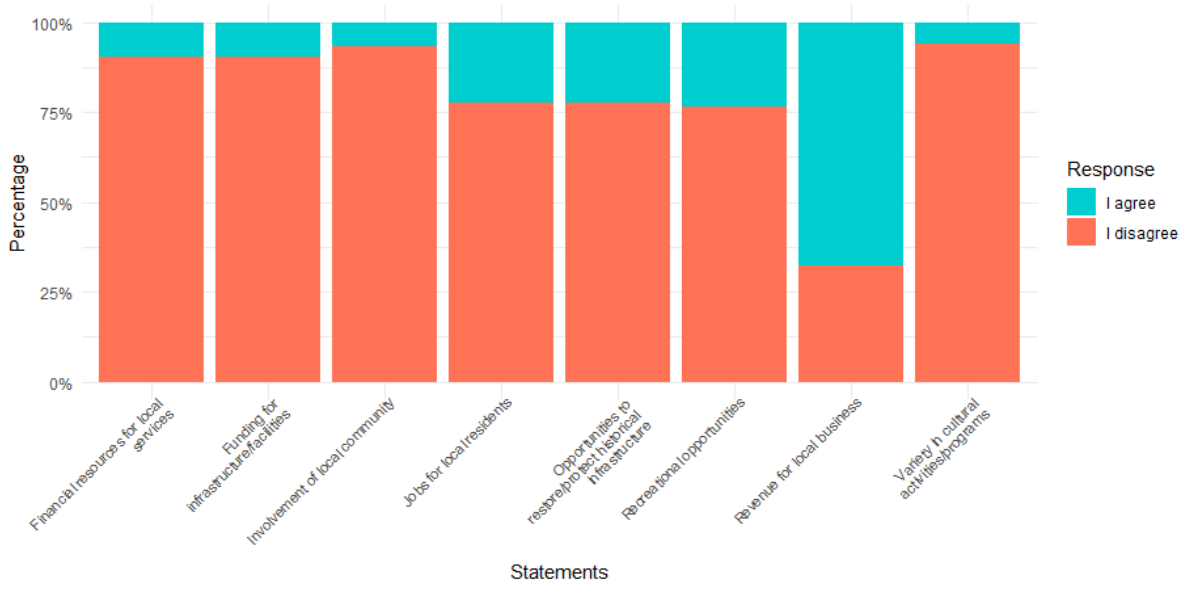


Figure 5.4: Perception of positive impacts (n = 102)

When comparing Figure 4.5 to Figure 4.4, it is clear that negative impacts are recognized more broadly and by more respondents. The most recognized negative impacts are crowding within the nature area (73.5%) and an increase in pollution, especially in the amount of litter (62.7%). Further negative effects on nature are recognized in terms of leading to changes in wildlife behaviour (51.0%) or a deterioration of natural assets (36.3%). Traffic issues are recognized more in terms of parking issues for locals (31.4%) than in terms of traffic congestion (19.6%). Socio-economic issues seem much less relevant, with only 14.7% expecting that visitation can increase tensions between visitors and the local community, 5.9% attributing tourism to a rise in crime, and 5.9% attributing it to a cost of living increase.

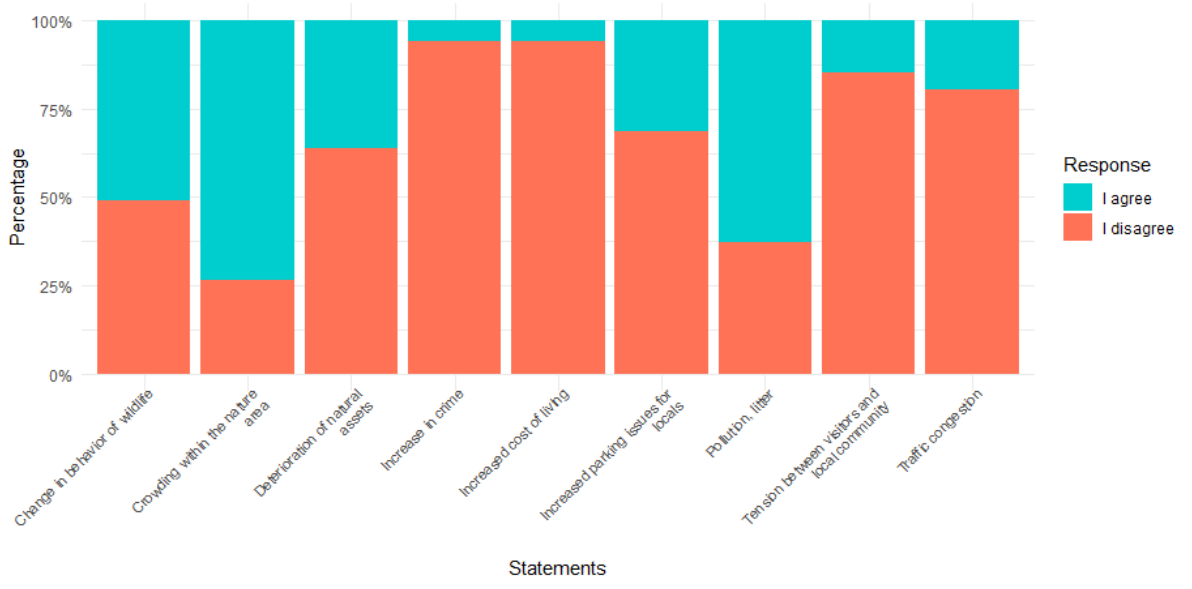


Figure 5.5: Perception of negative impacts (n = 102)

Similar to Loonse and Drunense Duinen, local residents see positive economic benefits mainly in terms of revenue for local businesses, while the recreational opportunities offered are also recognized. On the other hand, most negative impacts are related to environmental degradation due to visitation, with traffic issues identified by about one in five people.

Analysing the perceptions of local residents with regard to specific pro-environmental visitor behaviour in Utrechtse Heuvelrug, in general there are more negative perceptions among local residents than among visitors (see D1.6.1). The most noteworthy issue revolves around dog owners, with only 41.2% agreeing that visitors keep their dogs on a leash, when required. Potentially related to this, just 61.8% agree that visitors generally do not disturb the wildlife, 65.7% agree that visitors respect the peace-and-quiet, and 69.6% agree that visitors properly dispose of their garbage. Views on other environmental behavioural aspects are more positive, with 78.4% agreeing that visitors follow environmental guidelines and that they stay on designated tracks and trails. Finally, 81.4% agree that plants, rocks and stones are left untouched and 85.3% agree that ruins or historic sites are properly respected.

Figure 5.6: Pro-environmental behaviour of others (n = 102)

Finally, in terms of future development perspectives, only 35.3% were of the opinion that tourism and recreation should be further developed, with 15.7% agreeing that the volume of tourists should be increased. One in three residents (33.3%) found that additional funding should be provided by the local government for the promotion of tourism and recreation.

6. Results for Scarpe-Escaut

6.1 Characteristics of the sample

In Scarpe-Escaut, 74 local residents were surveyed, 34 (45.9%) male, 38 (51.4%) female, and 2 respondents (2.7%) preferring not to describe their gender. Scarpe-Escaut exhibited quite an even age distribution, with 3 people below 18 years old (4.1%), about a quarter of the sample (27.1%) being between 18 and 34 years old, one third of the sample (31.1%) being between 35 and 54 years old, 14.9% being in the age category 55-64 and the remaining quarter (23.0%) being 65 or above.

Table 6.1: Age categories of respondents (n = 74)

Age category	Count	Percentage
Under 18	3	4.1%
18-24 years old	11	14.9%
25-34 years old	9	12.2%
35-44 years old	12	16.2%
45-54 years old	11	14.9%
55-64 years old	11	14.9%
65+ years old	17	23.0%

Exactly half of the sample (50.0%) achieved a university degree, either a bachelor's (28.4%) or a graduate or professional degree (21.6%), with another 4.1% having started but not finished university. 6.8% followed vocational or similar studies and 18.9% having started or completed secondary school. Another 12.2% completed primary school with 4.1% of respondents either not having finished primary school or preferring not to answer the question.

Table 6.2: Educational level of respondents (n = 74)

Educational level	Count	Percentage
Some primary school	3	4.1%
Completed primary	9	12.2%
Some secondary school	4	5.4%
Completed secondary school	10	13.5%
Vocational or similar	5	6.8%
Some university but no degree	3	4.1%
University bachelor's degree	21	28.4%
Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)	16	21.6%
Prefer not to say	3	4.1%

Just 3.8% of the sample identified themselves as being neurodiverse and 1 person (1.4%) mentioned experiencing a physical disability, which is significantly lower than in the other two surveyed nature areas. While part of this may be due to the unfamiliarity with the concept of neurodiversity, this would not explain the low number of people mentioning having a physical disability.

6.2 Visitation to the nature area

Compared to the respondents of Loonse and Drunense Duinen and Utrechtse Heuvelrug, local residents around Scarpe-Escaut seem to be somewhat less likely to visit the nature park themselves. While the majority of surveyed residents still mention visiting at least once a week (37.8%), once a month (24.3%), or once every three months (8.1%), for about one in three residents, visits to Scarpe-Escaut happen either yearly (23.0%) or less than once a year (6.8%).

While being close to nature (51.4%) is the main visitor motivation of local residents, notable from Table 6.3 is the high percentage of people mentioning the importance of spending time with friends or family (41.9%). De-stressing (28.4%), exercising (31.1%) and relaxing (27%) are all mentioned by about one in three to a quarter of people. 14.9% like to spend some time alone, with one in ten people (10.8%) seeking to escape the city. Finally, 8.1% mention other reasons for visiting. Comparing these results with the visitor surveys of Scarpe-Escaut (D1.6.1) the only relatively large difference seems to be in the motivation to spend time alone, which is mentioned nearly twice as much by residents, following similar patterns also seen in Loonse and Drunense Duinen and Utrechtse Heuvelrug. The only correlation of note to be found between visitation purposes is a positive link between spending time with friends or family and wanting to escape the city (0.410).

Table 6.3: Reasons for visiting (n = 74)

Reasons for visiting	Count	Percentage
For business purposes	1	1.4%
Other reasons	6	8.1%
To attend an organized event	4	5.4%
To be close to nature	38	51.4%
To de-stress	21	28.4%
To escape the city	8	10.8%
To exercise	23	31.1%
To learn something new	2	2.7%
To relax	20	27.0%
To spend time alone	11	14.9%
To spend time with friends or family	31	41.9%

Figure 6.1 highlights the main activities of residents in Scarpe-Escaut. As in the other nature areas, hiking/walking (74.3%) was the most important activity, selected by three-quarters of the sample, followed by dog walking (28.4%), which is mentioned also twice as much by residents when compared to visitors (see D1.6.1).

Quite uniquely for Scarpe-Escaut is the important position taken by swimming or bathing (17.6%) as pastime in the nature area, with also canoeing, kayaking or rafting (8.1%) being significant. Further relevant activities include observing plants or animals (17.6%), photography (10.8%), having a picnic (8.1%), as well as participating in organized events (9.5%). Finally other, undefined, sports (16.2%) and other activities (8.1%) are mentioned by 6 to 12 people.

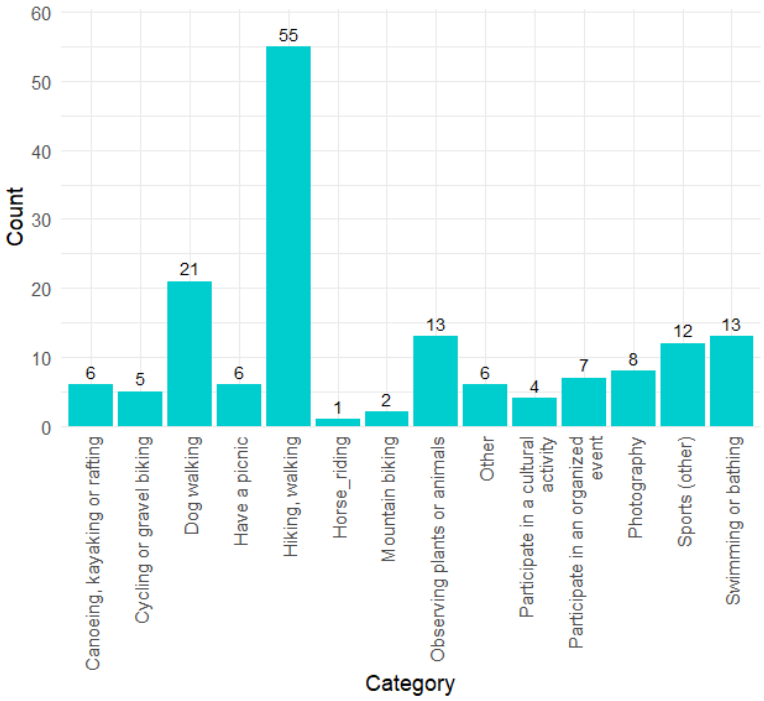


Figure 6.1: Activities conducted in Scarpe-Escaut (n = 74)

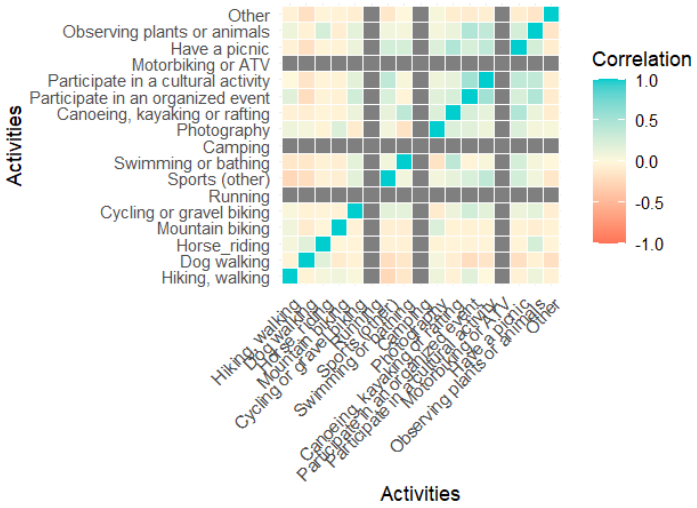


Figure 6.2: Correlations between activities (n = 74)

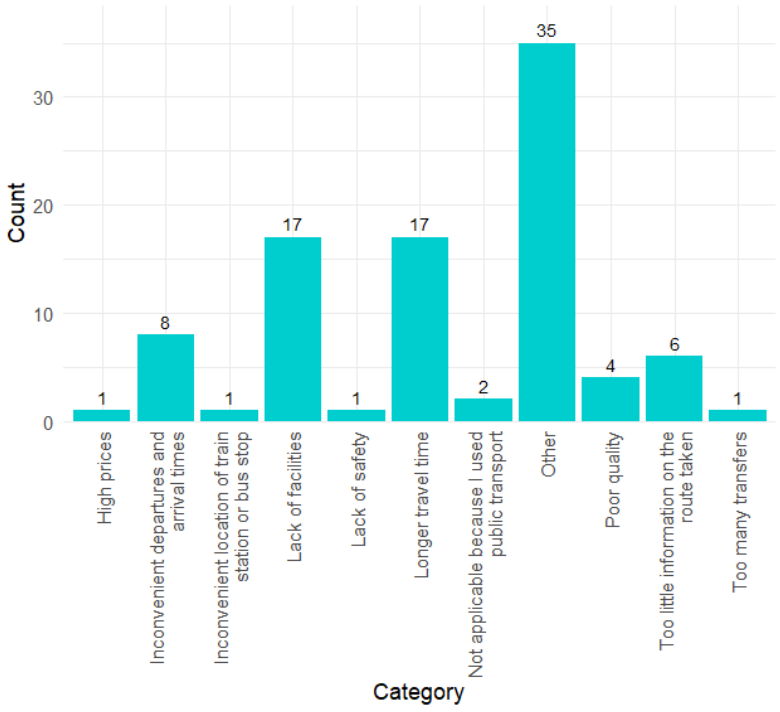
The correlation matrix of Figure 6.2 shows a slight overlap between swimming or bathing, canoeing, kayaking or rafting (0.383), and having a picnic (0.253). All in all, correlations are minor and do not identify strong profiles.

6.3 Transportation choices

Due to the relative proximity of the nature area, a large proportion of visitors travel on foot (45.9%), to almost similar extent travelling by car is mentioned (47.3%). There is much less local use of bicycles (17.6%) as a means of transportation.

Table 6.4: Transportation choices (n = 74)

Transportation choice	Count	Percentage
By bicycle	13	17.6%
By camper van	0	0.0%
By car	35	47.3%
By motorbike	0	0.0%
By regular bus	1	1.4%
By shuttle bus	0	0.0%
By train	0	0.0%
On foot	34	45.9%
Other	0	0.0%



Most people selected 'other' (47.3%) as the reason of not selecting public transport, mostly due to the proximity of the nature area and the lack of efficiency of public transport for small distances. This is also seen in the other selected reasons: lack of facilities (23.0%) and longer travel times (23.0%). One in ten people further mention the inconvenient departures and arrival times (10.8%).

Figure 6.3: Reasons for not selecting public transportation options (n = 74)

6.4 Perceived impacts of the nature area

About ten percent of surveyed people do not like the region they live in very much, 1.4% not liking the region at all, and 8.1% only liking it a little. The largest percentage of people either moderately like the area (37.8%), or like it very much (44.6%), with a final 8.1% extremely liking the region. Answers to the question on whether people have the ability to relax and enjoy themselves show the same pattern, with 1.4% not at all finding ways to enjoy themselves in the region, with 13.7% finding a little enjoyment. Most people either moderately (35.6%) or mostly (42.5%) find means of enjoyment and relaxation in the Scarpe-Escaut region, while 6.8% are completely satisfied with recreational and relaxation opportunities.

Similar to Loonse and Drunense Duinen and Utrechtse Heuvelrug, only a moderate amount of positive impacts are recognized, as plotted in Figure 6.4. Just 33.8% agree that the Scarpe-Escaut nature area creates jobs for local residents, with one in five (21.6%) agreeing that it generates revenue for local businesses. However, these revenues are not seen to lead to additional financial resources for local services (only 5.4% agree), or funding for infrastructure/facilities (4.1%). Non-economic positive effects that are somewhat recognized are the additional recreational opportunities offered (27.0%), the variety in cultural activities/programmes (20.3%), the involvement of the local community (16.2%), and the opportunities provided to restore/protect historical infrastructure (14.9%).

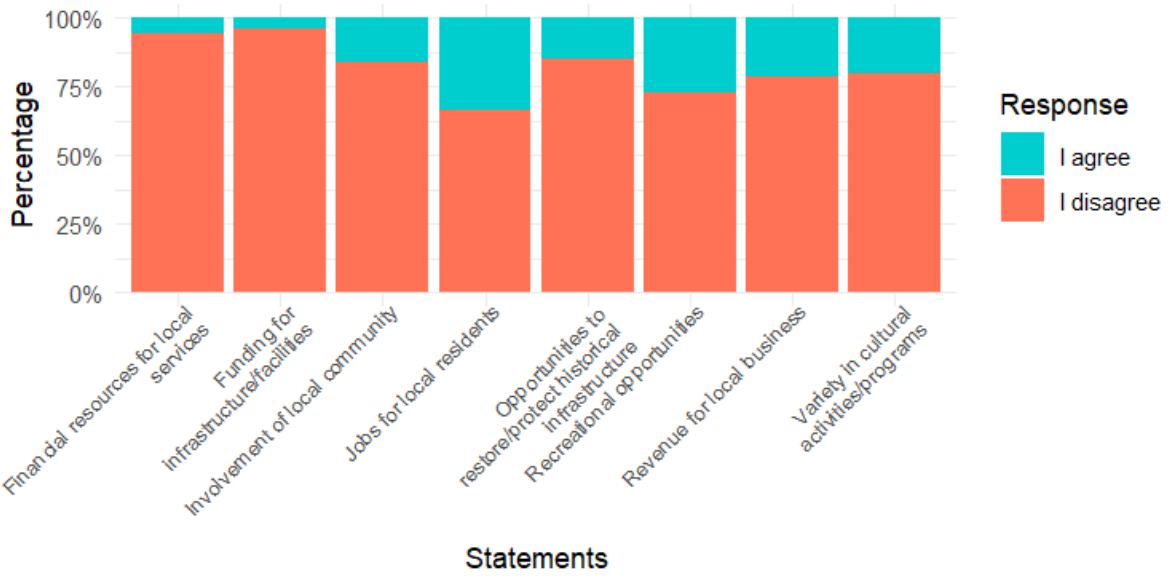


Figure 6.4: Perception of positive impacts (n = 74)

The negative impacts, outlined in Figure 6.5 show somewhat more agreement on negative impacts, with 48.6% agreeing that tourist visitation increases pollution, litter in the area, 27.0% finding it leads to changes in the behaviour of wildlife, 37.8% agreeing that it leads to deterioration of natural assets and a similar ratio (37.8%) find it increases crowding

within Scarpe-Escaut. There also seems to be a more commonly recognized problem with local parking due to tourism (37.8%), even though in general, traffic congestion is not seen as a large issue (8.1%). As a social impact, one in five local residents find that visitation to the nature area increases the tension between visitors and the local community (20.3%). Other social impacts are much less related to tourism in the region, with only 2.7% believing it leads to an increase in crime, and 2.7% agreeing it increases the cost of living.

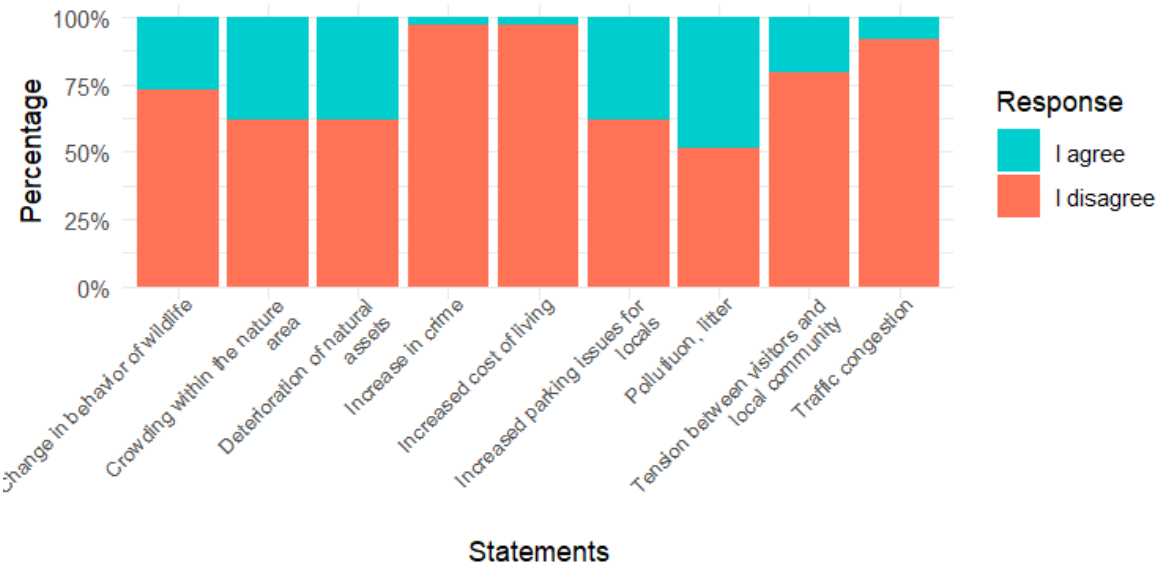


Figure 6.5: Perception of negative impacts (n = 74)

Similar to Loonse and Drunense Duinen and Utrechtse Heuvelrug, positive impacts are mostly related to increase revenue for local businesses, an increase in local job opportunities, and more expansive recreational job opportunities. In Scarpe-Escaut there seems a somewhat lower perception on environmental degradation due to tourism, but an increased concern of conflicts between visitors and local residents, and parking issues, while also the creation of additional pollution and litter is a recognized issue.

The issue of pollution and littering is also noticeable in Figure 6.6, where only 52.7% of respondents agree that visitors generally dispose of their garage in proper fashion. A similar amount of people (52.7%) agree that visitors do not disturb wildlife. An even more significant behavioural issue is, however, the lack of following guidelines on dog-leashing, with only 43.2% mentioning that most visitors follow such requirements. Compared to the other nature areas, there also seems to be a relatively higher instance of going off-track or exhibiting other potentially problematic, with only 60.8% agreeing that people stay on designated tracks and trails and 56.8% agreeing that general environmental guidelines are followed. There is somewhat higher agreement that visitors generally respect the peace-and-quiet (67.6%) and leave stones, rocks, plants and trees (71.6%), or historic sites or ruins (71.6%) undisturbed. Compared to the visitor surveys (D1.6.1), local residents are generally more critical about all aspects of visitor behaviour, which each of these categories scoring about 15 to 20 percentage points lower in the resident survey as compared to the visitor survey.

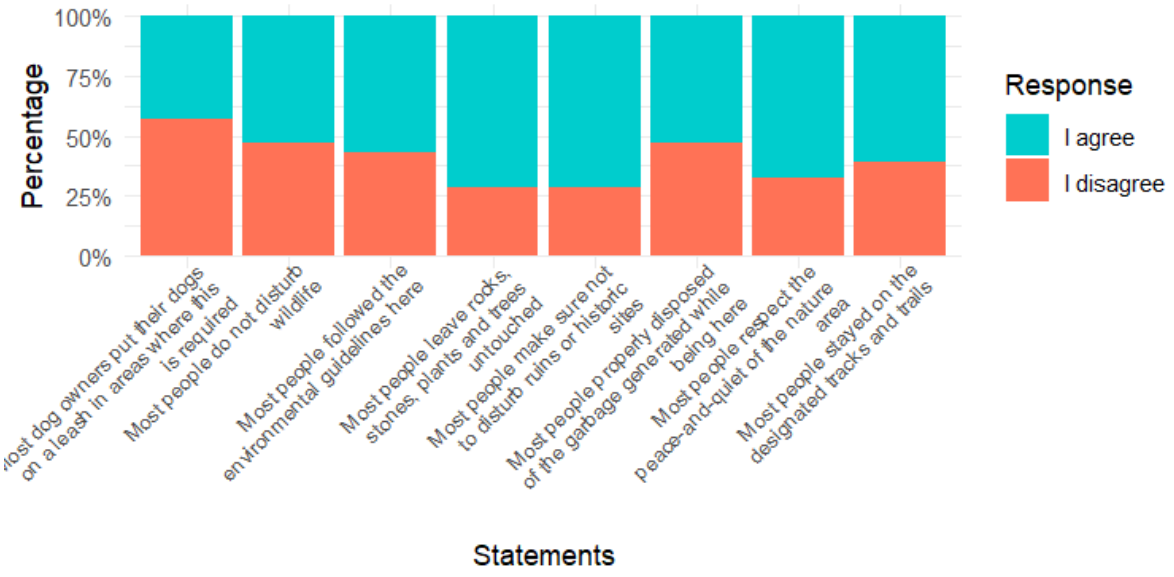


Figure 6.6: Pro-environmental behaviour of others (n = 74)

Just like in the visitor surveys, some additional statements were presented to residents of Scarpe-Escaut. 64.9% agree that there were many people in the nature area, but only 14.9% mentioned feeling oppressed. 12.2% also mentioned getting lost, which might reflect some need for additional signage. The most negative perception was linked with amount of waste, with 36.5% agreeing that there was a lot of waste everywhere. Still, the general experience was positive, with 94.6% indicated feeling good during their visitation to nature area.

Even though negative impacts and visitor behaviours seem to be recognized to a larger extent in Scarpe-Escsaut, when queried about future development potential, a larger number of people agree that tourism and recreation should be further developed (66.2%), that more local government funding should go to the promotion of tourism and recreation (63.0%), or that the volume of visitors should be increased (37.8%). This might indicate that in the case of Loonse and Drunense Duinen and Utrechtse Heuvelrug, visitor numbers are the main issue, while in Scarpe-Escaut, issues are more related to visitor behaviour and the quality of the facilities and recreational development.

7. Conclusions and recommendations

Regarding the first topic of **(1) local support for tourism-recreational development**, it can be concluded that residents in the region of the two Dutch nature areas have substantially lower support for further tourism development than French residents do. Conclusions for topic **(2) positive and negative impacts of tourism in the nature areas** are mostly crowding, pollution, and revenue for local businesses. For topic **(3) the value of recreational opportunities provided by the proximity of the nature areas**, it is concluded that the motivations to visit differ somewhat per nature area. To learn something new, business, or an organized event score low overall, as they did in the visitor surveys (see deliverable 1.6.1). Spending time alone scores substantially higher than it did in the visitor surveys. Regarding the aim to **(4) understand current visitor behaviour**, the conclusions are that most residents visit at least once a month and generally go for a walk, hike or - depending on the nature area - dog walking. Pro-environmental behaviour is observed less by residents than by visitors (see deliverable 1.6.1). For topic **(5) modal choice**, it is concluded that residents hardly ever use public transport and arrive mostly on foot, by car, or bike. Finally, for topic **(6) socio-demographics**, like in deliverable 1.6.1, the conclusions are that these resemble mostly the sampling used. In terms of neurodivergence and physical disability, the interpretation of terminology by respondents and the uneven distribution do not allow for meaningful conclusions regarding these two aspects.

The recommendations are twofold. Firstly it is recommended that the resident surveys can be used as a monitoring tool. Secondly, it is recommended what to keep, add, or change in terms of contents for the follow-up surveys, to allow for a solid foundation for establishing the effect of the interventions, to be reported in deliverable 1.7.2. In terms of using the resident surveys as a monitoring tool, identical to deliverable 1.6.1, it is recommended that resident surveys are used longitudinally. The sampling strategy should be similar for follow-up surveys as otherwise the difference in sampling strategy would explain the differences rather than the actual intervention. Finally, in terms of what to keep, add, or change in the follow-up resident surveys, the recommendations are again identical to 1.6.1, as it is recommended to remove the two socio-demographics on neurodivergence and physical disability. The latter aspect may be better captured by using an assessment of visitors' perception of the presence of certain facilities that cater to the needs of specific aspects of accessibility such as the possibility to borrow offroad wheelchair at visitor centers or the presence of wheelchair-friendly trails. Furthermore, it is recommended that the follow-up survey reduces answer options as much as possible by removing those that score (close to) 0%, unless these are part of the purpose of a suggested intervention. Finally, a set of specific questions related to the type of intervention used should be included in the follow-up survey, allowing for a more detailed determination of potential effects of an intervention, desired or undesired.

8. References

Anable, J. (2005). Complacent car addicts or aspiring environmentalists. Identifying travel behaviour segments using attitude theory. *Transport Policy*, *12*(1), 65–78. https://doi.org/10.1016/j.tranpol.2004.11.004

Jones, N., Graziano, M., & Dimitrakopoulos, P. G. (2020). Social impacts of European Protected Areas and policy recommendations. *Environmental Science & Policy*, *112*, 134-140. https://doi.org/10.1016/j.envsci.2020.06.004

Moyle, B. D., Weiler, B., & Croy, G. (2013). Visitors' Perceptions of Tourism Impacts: Bruny and Magnetic Islands, Australia. *Journal of Travel Research*, *52*(3), 392-406. https://doi.org/10.1177/0047287512467702

Natural England. (2022). *People and Nature Survey: A survey of adults over 16 years old across England*.

Pearce, P. L., & Lee, U.-I. (2005). Developing the Travel Career Approach to Tourist Motivation. *Journal of Travel Research*, *43*(3), 226-237. https://doi.org/10.1177/0047287504272020

Wilson, V. (2018). Scotland's People and Nature Survey 2017/18 – outdoor recreation and health modules – technical report. In *Scottish Natural Heritage Research Report 1063.*

World Health Organization. (1998). Programme on mental health: WHOQOL user manual. In: World Health Organization,.

Zaman, U., Aktan, M., Agrusa, J., & Khwaja, M. G. (2023). Linking Regenerative Travel and Residents' Support for Tourism Development in Kaua'i Island (Hawaii): Moderating-Mediating Effects of Travel-Shaming and Foreign Tourist Attractiveness. *Journal of Travel Research*, *62*(4), 782-801. https://doi.org/10.1177/00472875221098934

Zhang, H. M., Zhang, X., Yang, Y. J., & Ma, J. Y. (2023). From nature experience to visitors' pro-environmental behavior: the role of perceived restorativeness and well-being. *Journal of Sustainable Tourism*. https://doi.org/10.1080/09669582.2023.2184314

9. Appendix 1: MONA resident survey

MONA resident survey

Welcome to the resident survey of the Interreg North-West Europe MONA project. MONA promotes sustainable tourism in the protected areas of north-western Europe, benefiting the environment, visitors and local economies. The survey data will be used to enhance the visitor experience of nature areas for visitors and residents, while preserving the natural environment.

Participation in the resident survey is completely voluntary and your answers cannot in any way be traced back to you.

Participation is only allowed when you are at least 16 years old. It will take approximately 10 minutes to fill out the survey. Your help is greatly appreciated. Should you have any questions, please contact us via info@monanweurope.eu.

(1) local support for tourism-recreational development

Q

Next, we would like you to respond to a few statements about the future of the nature area. Do you agree or disagree with the following statements?

	Disagree (1)	Agree (2)
Tourism and recreation should be further developed in the nature area (2)	○	○
Local government should provide more funding to promote tourism and recreation in the nature area (3)	○	○
The volume of tourists visiting the nature area should be increased (4)	○	○

(2) positive and negative impacts of tourism in the nature areas

Q

According to you, what sort of impacts does visitation to the nature area have on the surrounding region and the nature area itself? You may select multiple answer options.

- ☐ Revenue for local business (1)
- ☐ Jobs for local residents (2)
- ☐ Funding for infrastructure/facilities (3)
- ☐ Increased cost of living (4)
- ☐ Financial resources for local services (5)
- ☐ Opportunities to restore/protect historical infrastructure (6)
- ☐ Variety in cultural activities/programs (7)
- ☐ Increased parking issues for locals (8)
- ☐ Tension between visitors and local community (9)
- ☐ Increase in crime (10)
- ☐ Change in behavior of wildlife (11)
- ☐ Pollution, litter (12)
- ☐ Deterioration of natural assets (13)
- ☐ Recreational opportunities (14)
- ☐ Involvement of local community (15)
- ☐ Crowding within the nature area (16)
- ☐ Traffic congestion (17)

Q

How much do you like the city/region where you live?

- ○ Not at all (1)
- ○ A little (2)
- ○ A moderate amount (3)
- ○ Very much (4)
- ○ An extreme amount (5)

Q

How much are you able to relax and enjoy yourself in the city/region where you live?

- ○ Not at all (1)
- ○ A little (2)
- ○ Moderately (3)
- ○ Mostly (4)
- ○ Completely (5)

(3) the value of recreational opportunities provided by the proximity of the nature areas

Q

Why did you visit the nature area? Please select the motivations that apply to your visit to this nature area. You may select multiple answer options.

- ☐ To be close to nature (1)
- ☐ To exercise (2)
- ☐ To spend time with friends or family (3)
- ☐ To de-stress (4)
- ☐ To escape the city (5)
- ☐ Other reasons (6)
- ☐ To attend an organized event (7)
- ☐ To relax (8)
- ☐ To spend time alone (9)
- ☐ For business purposes (10)
- ☐ To learn something new (11)

(4) understand current visitor behaviour

Q
How often do you visit the nature area of [name nature area]?

- ○ At least once a week (5)
- ○ At least once a month (6)
- ○ At least once every three months (7)
- ○ At least once a year (8)
- ○ Less than once a year (9)

Q
When visiting, which activities do you participate in? You may select multiple answer options.

- [ ] Hiking, walking (1)
- [ ] Dog walking (16)
- [ ] Horse riding (2)
- [ ] Mountain biking (3)
- [ ] Cycling or gravel biking (4)
- [ ] Running (5)
- [ ] Sports (other) (6)
- [ ] Swimming or bathing (7)
- [ ] Camping (8)
- [ ] Photography (9)
- [ ] Canoeing, kayaking or rafting (10)
- [ ] Participate in an organized event (11)
- [ ] Participate in a cultural activity (12)
- [ ] Motorbiking or ATV (13)
- [ ] Have a picnic (14)
- [ ] Observing plants or animals (17)
- [ ] Other (15)

Q

In this section, we would like to know your view on how other visitors respect the nature area and its guidelines. Do you agree or disagree with the following statements?

	Disagree (1)	Agree (2)
Most people properly dispose of the garbage generated while being in the nature area (1)	○	○
Most people follow the environmental guidelines there (2)	○	○
Most people stay on the designated tracks and trails (3)	○	○
Most dog owners put their dogs on a leash in areas where this is required (4)	○	○
Most people take care not to disturb wildlife (5)	○	○
Most people leave rocks, stones, plants and trees untouched (6)	○	○
Most people take care not to disturb ruins or historic sites (7)	○	○
Most people respect the peace-and-quiet of the nature area (8)	○	○

(5) modal choice

Q

How do you generally reach this nature area? You may select multiple answer options.

- ○ On foot (1)
- ○ By car (2)
- ○ By camper van (3)
- ○ By bicycle (4)
- ○ Other (5)
- ○ By train (6)
- ○ By regular bus (7)
- ○ By shuttle bus (8)
- ○ By motorbike (9)

Q

In case you did not use public transport, what prevented you from using public transport? You may select multiple answer options.

- [ ] Not applicable because I used public transport (10)
- [ ] Longer travel time (1)
- [ ] Too crowded (2)
- [ ] Poor quality (3)
- [ ] Lack of safety (4)
- [ ] Lack of facilities (6)
- [ ] High prices (8)
- [ ] Inconvenient location of train station or bus stop (11)
- [ ] Too many transfers (12)
- [ ] Too little information on the route taken (13)
- [ ] Complex ticketing and payment (14)
- [ ] Inconvenient departure and arrival times (15)
- [ ] Other (9)

(6) socio-demographics

Q

How old are you?

- ○ Under 18 (1)
- ○ 18-24 years old (2)
- ○ 25-34 years old (3)
- ○ 35-44 years old (4)
- ○ 45-54 years old (5)
- ○ 55-64 years old (6)
- ○ 65+ years old (7)

Q

What is the highest level of education you have completed?

- ○ Some primary school (1)
- ○ Completed primary (2)
- ○ Some Secondary school (3)
- ○ Completed secondary school (4)
- ○ Vocational or Similar (5)
- ○ Some university but no degree (6)
- ○ University Bachelors Degree (7)
- ○ Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.) (8)

- ○ Prefer not to say (9)

Q

How do you describe yourself?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer to self-describe (4) _____
- ○ Prefer not to say (5)

Q

Would you consider yourself to be neurodivergent?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

Q

Would you consider yourself to have a physical disability?

- ○ Yes (1)
- ○ No (2)

10. Appendix 2: Frequency tables

Table: Support for development

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Tourism and recreation should be further developed in the nature area	35.3%	27.1%	66.2%
Local government should provide more funding to promote tourism and recreation in the nature area	33.3%	26.3%	63.0%
The volume of tourists visiting the nature area should be increased	15.7%	9.5%	37.8%

Table: Perceived impacts

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Revenue for local business	67.6%	64.1%	21.6%
Jobs for local residents	22.5%	20.3%	33.8%
Funding for infrastructure/facilities	9.8%	7.6%	4.1%
Increased cost of living	5.9%	1.7%	2.7%
Financial resources for local services	9.8%	6.8%	5.4%
Opportunities to restore/protect historical infrastructure	22.5%	14.4%	14.9%
Variety in cultural activities/programs	5.9%	3.6%	20.3%
Increased parking issues for locals	31.4%	27.9%	37.8%
Tensions between visitors and local community	14.7%	17.7%	20.3%
Increase in crime	5.9%	6.4%	2.7%
Change in behavior of wildlife	51.0%	55.0%	27.0%

Pollution, litter	62.7%	71.1%	48.6%
Deterioration of natural assets	36.3%	51.7%	37.8%
Recreational opportunities	23.5%	35.2%	27.0%
Involvement of local community	6.9%	13.4%	16.2%
Crowding within the nature area	73.5%	77.2%	37.8%
Traffic congestion	19.6%	27.1%	8.1%

Table: Quality of life – city/region

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Not at all	1.0%	0.8%	1.4%
A little	2.0%	3.6%	8.1%
A moderate amount	4.9%	10.1%	37.8%
Very much	77.5%	74.9%	44.6%
An extreme amount	14.7%	10.6%	8.1%

Table: Quality of life – ability to enjoy

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Not at all	1.0%	1.0%	1.4%
A little	1.0%	5.1%	13.7%
Moderately	2.0%	7.9%	35.6%
Mostly	60.6%	57.5%	42.5%
Completely	35.4%	28.5%	6.8%

Table: Values of proximity to nature area

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut

To be close to nature	54.9%	72.2%	51.4%
To exercise	65.7%	79.3%	31.1%
To spend time with friends or family	21.6%	29.6%	41.9%
To de-stress	34.3%	50.9%	28.4%
To escape the city	2.0%	6.1%	10.8%
To attend an organized event	2.0%	3.1%	5.4%
To relax	64.7%	88.4%	27.0%
To spend time alone	19.6%	35.4%	14.9%
For business purposes	1.0%	0.3%	1.4%
To learn something new	0.0%	2.8%	2.7%
Other reasons	30.4%	8.3%	8.1%

Table: Frequency of visits

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
At least once a week	55.9%	51.3%	37.8%
At least once a month	16.7%	25.9%	24.3%
At least once every three months	9.8%	13.1%	8.1%
At least once a year	6.9%	7.5%	23.0%
Less than once a year	10.8%	2.2%	6.8%

Table: Activities

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Hiking, walking	86.3%	90.2%	74.3%
Dog walking	26.5%	39.3%	28.4%
Horse riding	2.0%	9.9%	1.4%

Mountain biking	5.9%	12.6%	2.7%
Cycling or gravel biking	47.1%	41.8%	6.8%
Running	6.9%	11.9%	0.0%
Sports (other)	5.9%	2.8%	16.2%
Swimming or bathing	3.9%	0.7%	17.6%
Camping	2.9%	0.2%	0.0%
Photography	9.8%	26.4%	10.8%
Canoeing, kayaking or rafting	0.0%	0.3%	8.1%
Participate in an organized event	2.0%	3.5%	9.5%
Participate in a cultural activity	4.9%	0.7%	5.4%
Motorbiking or ATV	0.0%	0.7%	0.0%
Have a picnic	5.9%	13.2%	8.1%
Observing plants or animals	13.7%	19.5%	17.6%
Other	13.7%	7.1%	8.1%

Table: Pro-environmental behaviour

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Most people properly disposed of the garbage generated while being here	69.6%	72.2%	52.7%
Most people followed the environmental guidelines here	78.4%	66.6%	56.8%
Most people stayed on the designated tracks and trails	78.4%	65.6%	60.8%
Most dog owners put their dogs on a leash in areas where this is required	41.2%	39.3%	43.2%
Most people do not disturb wildlife	61.8%	57.2%	52.7%

Most people leave rocks, stones, plants and trees untouched	81.4%	74.5%	71.6%
Most people make sure not to disturb ruins or historic sites	85.3%	77.4%	71.6%
Most people respect the peace-and-quiet of the nature area	65.7%	59.8%	67.6%

Table: Travel modes

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
On foot	67.6%	43.0%	45.9%
By car	41.2%	63.3%	47.3%
By camper van	0.0%	0.3%	0.0%
By bicycle	54.9%	61.3%	17.6%
By train	1.0%	0.0%	0.0%
By regular bus	2.0%	0.2%	1.4%
By shuttle bus	0.0%	0.0%	0.0%
By motorbike	0.0%	0.7%	0.0%
Other	6.9%	4.8%	0.0%

Table: Barriers to use public transport

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Not applicable because I used public transport	0.0%	6.8%	2.7%
Longer travel time	20.6%	17.7%	23.0%
Too crowded	2.9%	1.2%	0.0%
Poor quality	3.9%	5.3%	5.4%
Lack of safety	2.9%	0.7%	1.4%
Lack of facilities	4.9%	9.1%	23.0%
High prices	8.8%	10.4%	1.4%
Inconvenient location of train station or bus stop	13.7%	30.9%	1.4%
Too many transfers	6.9%	5.0%	1.4%
Too little information on the route taken	2.0%	2.8%	8.1%
Complex ticketing and payment	1.0%	3.0%	0.0%
Inconvenient departure and arrival times	11.8%	7.8%	10.8%
Other	72.5%	54.9%	47.3%

Table: Age

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Under 18	0.0%	0.2%	4.1%
18-24 years old	0.0%	0.8%	14.9%
25-34 years old	2.0%	6.3%	12.2%
35-44 years old	8.8%	16.5%	16.2%
45-54 years old	14.7%	27.3%	14.9%
55-64 years old	21.6%	27.4%	14.9%
65+ years old	52.9%	21.5%	23.0%

Table: Gender

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Male	45.1%	33.9%	45.9%
Female	54.9%	63.4%	51.4%
Non-binary / third gender	0.0%	0.3%	0.0%
Prefer to self-describe	0.0%	0.3%	0.0%
Prefer not to say	0.0%	2.0%	2.7%

Table: Educational level

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Some primary school	1.0%	0.3%	4.1%
Completed primary	1.0%	0.3%	12.2%
Some Secondary school	2.9%	0.8%	5.4%
Completed secondary school	25.5%	15.2%	13.5%

Vocational or Similar	18.6%	21.5%	6.8%
Some university but no degree	12.7%	9.8%	4.1%
University Bachelor's Degree	20.6%	32.0%	28.4%
Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)	17.6%	15.9%	21.6%
Prefer not to say	0.0%	4.1%	4.1%

Table: Neurodivergence

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Yes	14.0%	26.4%	3.8%
No	86.0%	73.6%	96.2%

Table: Physical disability

	Utrechtse Heuvelrug	Loonse and Drunense Duinen	Scarpe-Escaut
Yes	21.6%	11.6%	1.4%
No	78.4%	88.4%	98.6%

11. Appendix 3: Additional questions per nature area

11.1 Loonse and Drunense Duinen

Table: Additional resident statements

I will certainly return to Loonse and Drunense Duinen	99.3%
I would have liked to known of starting points that are close to but outside Loonse and Drunense Duinen	25.6%
I have prepared the visit to Loonse and Drunense Duinen extensively	20.0%
I visit Loonse and Drunense Duinen due to its specific character (sand dunes)	67.1%
Next time, I would like to visit another nature area	35.9%
I used the designated routes to move around Loonse and Drunense Duinen	76.2%

11.2 Utrechtse Heuvelrug

Table: Additional resident statements

Paid parking should be implemented to reduce car use of visitors	45.1%
Facilities for sustainable mobility such as bike parking, and charging facilities for electric bikes should be available more to reduce car use of visitors	76.5%
Shared mobility such as (electric) bikes and (electric) carrier bikes should be available more to reduce car use of visitors	51.0%

11.3 Scarpe-Escaut

Table: Additional resident statements

There are a lot of people here	64.9%
I feel good	94.6%
I feel oppressed	14.9%
I got lost	12.2%
There is a lot of waste everywhere	36.5%