

Mobility Perceptions and Behaviours of Visitors and Residents of the Utrechtse Heuvelrug: Barriers and Opportunities

Regional Integration Project

Research report



Utrechtse Heuvelrug sunrise (Wallet, 2021)

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1. Introduction

The Utrechtse Heuvelrug National Park, is located within a crowded urban area encompassing various towns and villages. Its location brings along various mobility challenges related to the automobility regime and consequently CO₂ emissions (European Commission, 2020). The network of roads and highways which cross the park cause distress within the natural ecosystem, disturbing animals and the area residents (Mortensen, 2019). The systematic transition towards carbon-neutral alternatives is difficult to achieve as the municipalities adjacent to the park have their input, desired outcomes and the automobility regime is sustained by habits of use, mindsets and established practices of residents and visitors. Furthermore, the lock-in mechanisms stabilizing the current transport system crashes with the 'green' niches as the range of stakeholders have a different approach towards the socio-technological configuration of mobility in the area (Geels, 2012 and 2001). The goal of this research is to further look into the challenges which come along when considering sustainable mobility within the chosen locations of Utrechtse Heuvelrug and to close the gap on what is required to bring about a change in the behaviours for both the people living in the area and the visitors of the National Park towards a more sustainable form of mobility, hence approximating the climate neutrality municipality goals.

1.1. Research question

What changes in perception and behaviour of both visitors and residents of the area of the Utrechtse Heuvelrug can contribute to attaining climate neutrality in the Utrechtse Heuvelrug region by 2035?

1.2. Sub-questions

The aim of the following sub-questions is to guide the research through a clear pathway that would contribute to answering the research question and model the semi-structured interviews with both residents of the area of the Utrechtse Heuvelrug and visitors of the region. Further details about the theories linked to the questions can be found on segments [3.1](#) and [3.2](#).

1. What are the current modes of mobility used by residents and park visitors, i.e. which is the regime configuring the socio-technical landscape?
2. What are the desires or preferences of both locals and visitors of transporting methods within the park?
3. What (if any) are the conflicts that arise between people who live close to the area (residents) and people who come to visit the area from the region (visitors)?
4. What are the barriers that hamper the shift towards sustainable mobility?

1.3. Readers guide

In the following section, the reader will find some background information surrounding the concepts of sustainable mobility and the visions from the Utrechtse Heuvelrug Gemeente. Afterwards, the methods used to perform the research will be discussed and both the multi-level perspective (MLP) and Social Practise Theory (SPT) are introduced. Then, the MLP and SPT are applied to analyse and discuss the results from the data gathered from the semi-structured interviews conducted at Utrechtse Heuvelrug. To conclude, a compendium of the most relevant findings and the further research steps are discussed. Additionally, the reader can find the reference list and the annexes, containing all important additional information as well as the interviews transcriptions at the end of the report.

2. Literature review

Reviewing the visions of the municipality of Utrechtse Heuvelrug about its goal of climate neutrality and the barriers that hamper the shift towards sustainable mobility constitutes an essential step in order to implement an adequate research model. The aim of the subsequent paragraphs is to set the foundations that have later reassured our methodological choices.

2.1. Visions of the municipality

The municipality of Utrechtse Heuvelrug aims for climate neutrality by the year 2035. Meaning that the municipality aims to produce the same amount of energy as consumed within the area, to make the region climate neutral. Their goals include climate neutral living, working, recreating and travelling. To reach these goals, a fundamental shift from unsustainable mobility use towards (more) sustainable novelties is required.

The constant use of fossil fuel based automobiles within and around the Utrechtse Heuvelrug hinders the above mentioned target, because of the exhaust gases that increase greenhouse gas emissions (which lead to climate change). The largest amount of traffic in the zone is caused by people who commute from home to work and the other way around. Therefore, steering these individuals in the direction of green(er) substitutes, e.g. electric cars, public transport or bicycles, could make a significant change (Putman and de Wit, 2017).

In addition, the predominant usage of cars for mobility also involves other negative externalities such as noise pollution (figure 2.1). The darker the red on the map, the more noise pollution measured. The amount of noise pollution can be reduced by innovating the roads by adding silent asphalt, insulating homes and building barriers to capture the noise (Thoen et al., 2010). Nevertheless, these measures constitute mitigation solutions, but the ecosystem disturbances and other negative externalities are not abated via these innovations (Mortensen, 2019). Thus, other measures or changes are required which will be discussed further in the report.

Hitherto, the municipality of Utrechtse Heuvelrug walks towards climate neutrality via the 'Trias Mobilica', a concept model that focuses on three aspects of travel: (1) the amount of trips, (2) the means of transport, and (3) the sustainability of the choices. The ultimate aim of the approach is to offer a triad that embraces different aspects of mobility, solely focusing on consumers' decisions (Putman and de Wit, 2017).

Eventually, the concept model is a roadmap towards their goal of reducing the CO₂ emissions of mobility by 9 percent (23 ktons). The Climate Roadmap report mentioned that the total climate footprint of the municipality was 252 ktons of CO₂ in 2015, of which the climate footprint of mobility was 60 ktons of CO₂. The overall target value is a zero climate footprint

of the municipality, of which the target value of the climate footprint of mobility is 37 ktons of CO₂. To reach this goal, they think a scenario is feasible and necessary to have 75% of vehicles electric and 25% driving on biofuel (Putman and de Wit, 2017).

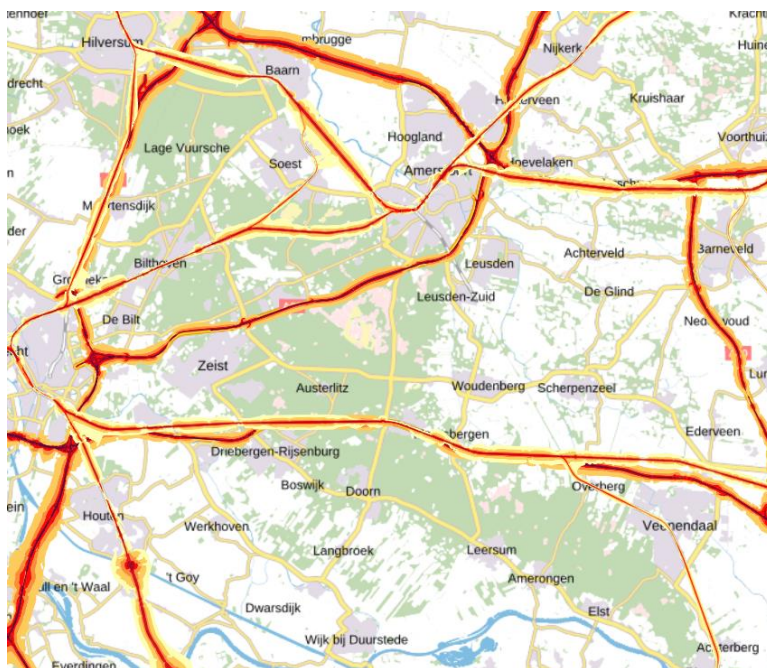


Figure 2.1 - Noise pollution in and around the Utrechtse Heuvelrug in 2016, consulted from <https://www.pdok.nl/viewer/>

2.2. Barriers that hamper a shift towards sustainability

The shift towards sustainable mobility is hampered by several other components that are not directly in the reach of the municipality but must be considered.

One of the main barriers that frustrates the shift towards sustainable mobility is the involvement of mobility in everyday life supported by present infrastructure systems, i.e. the socio-technical regime. Sustainable mobility, therefore, requires a radical change that involves reconstructing current daily practices (Shove et al., 2015). The ‘car’ as a form of individual mobility is the main part of these current daily practices, resulting in many scientists speaking of ‘car-dependence’. Cars throughout history extended the ways people can move and standardised levels of comfort and quality for mobility (Urry, 2004).

This car dependent behaviour created infrastructural arrangements, which preserve a range of different practices (Shove et al., 2015). This connection between individual mobility and infrastructure developed into a vicious circle and created a resilient system that hampers the shift towards sustainable mobility. However, collective transport has some Achilles’ heels such as safety, health (especially under the consideration of the ongoing pandemic of Covid-

19), lower levels of comfort, time efficiency and quality compared to individual means of transport.

Some barriers could be overcome by wider spreading shared mobility options, for instance, car-sharing, shared micro-mobility and carpooling. However, the effectiveness of these policies is highly dependent on the social, cultural, economical, geographical and political status of the given area (Bakogiannis et al., 2017). Thus, it is important to highlight that there is no such barrier that can be overcome without considering all aspects of society.

These literature findings will be further analysed and compared with the own collected data using the multi-level perspective and social practice theory, which will be introduced in the 'Methodology'.

3. Methodology

3.1. Theoretical framework: the multi-level perspective and social practice theory

The multi-level perspective (MLP) provides the following research with an analytical framework (Geels, 2012), addressing the core of transitions, namely stability and change towards new transport systems in Utrechtse Heuvelrug.

The MLP combines insights from “evolutionary economics (technological trajectories, regimes, niches, speciation), sociology of technology (innovations are socially constructed through interactions between engineers, firms, consumers, policymakers) and neo-institutional theory (actors are constrained by shared beliefs, norms and regulations),” (Geels, 2012: 472). The term ‘regime’ offers an analytical framework through which the intangible notions of shared beliefs, norms, standardised ways of doing things, heuristics, and rules of thumb can be explored. On the other hand, the concept of socio-technical ‘system’ refers to measurable elements such as artefacts, market shares, infrastructure or regulations (Bui et al., 2016). Figure 3.1. illustrates the model, depicting with the arrows the innovation process direction.

Other than automobility, the dominant transport options that the National Park offers are trains, buses and cycling. In the vein of Geels (2012: 473) argumentation, these transport modes can be called ‘subaltern regimes’, in a way of contrasting to the car regime but acknowledging their longevity.

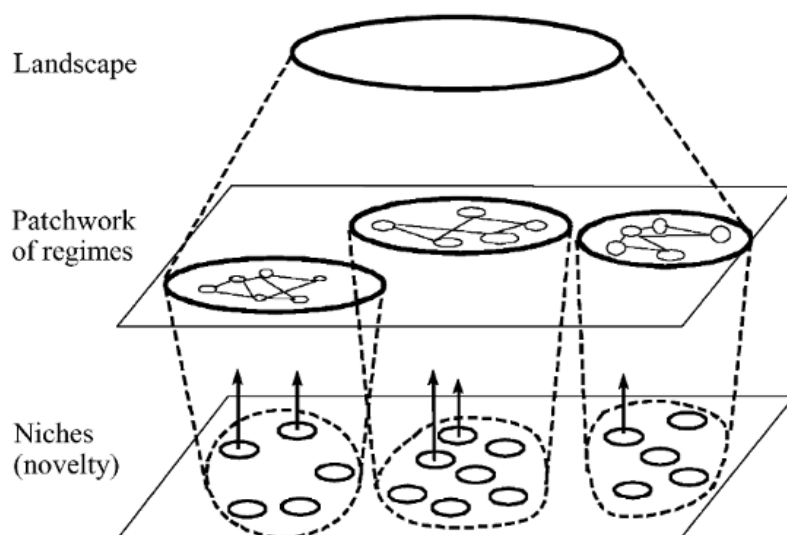


Figure 3.1 - Multi Levels as a nested hierarchy (Geel, 2002: 1261)

Shove et al. 2015 refers to car dependence, as a “feature or characteristic not of people or of places but of practices[...]”, and therefore it needs to be considered as the “consequence of the extent to which driving has become integral to the conduct of an increasing range of social practices [...]” (Shove et al., 2015). Scientists who have done research on MLP point towards a similar trend, car consumption is “about aesthetic, emotional and sensory responses to driving, as well as patterns of kinship, sociability, habitation and work”, (Sheller, 2004).

In combination with the MLP, the social practice theory offers a conceptual framework with which to investigate and analyse the practises that sustain the automobility regime in the areas surrounding Doorn, Driebergen and Austerlitz. Both towns are located next to highway A12 and near road N225, moreover, they count a train station, various bus routes and cycling roads, see figure 3.2. These characteristics provide an adequate scenario to study from residents and visitors their mobility habits, their beliefs and the established practices that sustained the automobility regime in the region.

The Utrechtse Heuvelrug with surrounding towns and cities

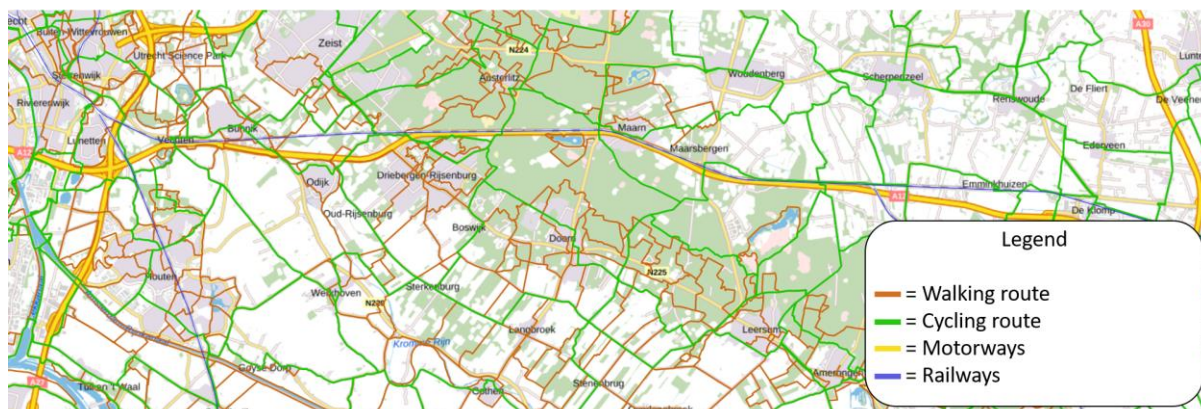


Figure 3.2 - Utrechtse Heuvelrug with surrounding towns & cities and the various roads which cross it

In addition to the multi-level perspective, the social practice theory is used as a supplementary framework, complementing the analysis of the data gathered. The key idea of the social practice theory is the decentralization of individual decision making, turning attention towards social practices that result from collective organization (Hargreaves, 2011; Shove and Warde, 2002). Practices are defined as routinized types of behaviour, which consist of the bodily and mental activities of an individual agent (Reckwitz, 2002). The individual is termed ‘carrier’, as it performs practices, and with them, the routinized ways of understanding, knowing how and desiring in its culture (Reckwitz, 2002). A social practice is termed social as it “appears at different locales and at different points of time and is carried out by different individuals” (Reckwitz, 2002). As these social practices are described as routines, a certain ‘structure’ by these routines can be discovered in the social world. A shift towards sustainability

in Utrechtse Heuvelrug requires the breaking and changing of practices and structures in everyday life.

In combination with the MLP, the social practice theory offers a way to describe widely spread social practices and to identify for which niches in sustainable mobility, which social practices are relevant. The core of this framework is included in the survey's attention towards practices and actions that are considered the standard ways of life, and therefore the routines that people are embedded into. In contrast to public transport, which is considered as a more sustainable option, car mobility, which is considered less sustainable with the usage of fossil fuels, will be under an important focus.

3.2. Data gathering: semi-structured interviews

Socio-technological transitions involve a broad range of actors and unfold over long periods of time. Nevertheless, the work on the field pushes the research through a narrowed group of stakeholders, namely residents and visitors, and a specific period of time to gather data, during the fieldwork week (from 31st May until 4th June). The initial aim of the research was to conduct around 25 semi-structured interviews which would take up an average of 15 to 20 minutes per interview to complete.

Semi-structured interviews will be conducted in order to understand people's habits and preferences towards the different options of mobility, i.e. to establish empirically the regime and subaltern regimes (Geels, 2012). The interviews happened during the fieldwork week at various locations within the Utrechtse Heuvelrug that both visitors and residents attend. Among others, Austerlitz, the area between Driebergen and Austerlitz and Doorn and the nature surroundings constitute the research sites.

The interview (see annexes 8.2) is divided into six sections. The first section (1) focuses on general information about the demographic traits of participants and their travel preferences. In this part of the interview, the attention goes towards general social practices, habits and the options the individual enjoys. The next sections will help to identify possible niches regarding the MLP and possible breaking of practices regarding the Social Practice Theory. The second section (2) focuses on alternative means of transport. Which aspects have already been considered and what are the opinions about bikes, public transport and cars. For instance, "why do they choose a certain means of transport?" "Under which circumstances would public transport become more attractive?" or "How much time and costs influence their decisions?" In the third section (3), desired ways of mobility will be identified and participants are asked to imagine the future of Utrechtse Heuvelrug National Park regarding mobility and transport.

The second part of the interview is specifically designed for residents. The fourth section (4) asks for the attitude of residents towards the park and the fifth section (5) emphasizes the relation towards visitors. In the last section (6), both the visitors and the residents will be asked to imagine possible future scenarios for the Utrechtse Heuvelrug. In order to keep the attention of the interviewee, the survey was designed to be as short and efficient as possible. That is why the interviewer could adjust the questions to the attitude of the interviewee (and whether he or she seems at ease or in a hurry, etc.).

4. Results and Discussion

Altogether 21 semi-structured interviews have been conducted with people in the National Park of Utrechtse Heuvelrug and towns adjacent to the park. From the sample of people interviewed, eight subjects are residents (i.e. people who live in or adjacent to the area) and thirteen are visitors (those whose resident places are not in or adjacent to the National Park).

4.1. Introduction, a socio-technical approach

Technological trajectories (figure 3.2) along with user practices, consisting of a set of deep structural trends thereupon described, are situated in a sociotechnical landscape of Utrechtse Heuvelrug. The metaphor landscape illustrates the relative firmness of social habits and the material context of infrastructures (Geels, 2002). In this part, the sub-question, 'What are the current modes of mobility used by residents and park visitors?' is answered using the socio-technical analysis carried out via the analysis of the semi-structured interviews. The generated qualitative data assesses the current regime and the possible inertia towards the niches.

When considering the means of transport people use to travel to and within the park, the following results emerge (figure 4.1). Blue stands for the subgroup "resident" whereas the subgroup "visitor" is represented by the red colour.

The results show that all visitors came to the area by car: three out of thirteen visitors came by electric/hybrid car, and the other eight came by fossil-fuel car. Despite the short distance, 50% of the "residents" also came by car, mainly referring to their choices in virtue of 'efficiency' and 'comfort' (figure 4.2). The other 50% of the individuals belonging to this group walked. The research sample does not include interviewees who travelled by bike or electric bike and just one person had travelled by public transport to Doorn. Nevertheless, the data collected by group 5C (Sustainable Mobility in the Region) further reinforces the regime analysed via the data gathered from the interviews (table 1).

Although, public transport and biking were considered as 'subaltern regimes' in the methodology, the scarcity analysed in the results encourages to reconsider these mobility ways as niches in spite of their longevity. Factors such as the lack of efficient connections which allow intermodal mobility among visitors or the time schedules of public transport reinforced the subjects choices.

The results of the study show that price, i.e. economic costs, have a little impact on peoples' preferences towards the regime. Even though some subjects had access to free public transport, they still prefer to use the car as a means of mobility. Additionally, implementing parking fees would not persuade them in the first instance, the interviewees

from their current choices. As a result, a deeper analysis on price optimization, indifference curves should be conducted.

The Netherlands have an extensive and stable structure of bicycle and public transport habits in addition to the automobility regime, and hence presents early signs of emerging transition patterns (Köhler et al., 2020). Nevertheless, the results gathered from Utrechtse Heuvelrug disclosed a more rudimentary regime than the pathways in the urban area. One of the subjects interviewed at Châlet Helenaheuvel, near Doorn, claimed: “I would come by public transport if it worked as quickly as it does in the city. I come from Nijmegen and it is the quickest option to move around the city. However, for these kinds of destinations [referring to the Utrechtse Heuvelrug] it is easier and more effective to come by car”. These words are an illustration of the predominant perceptions in the sample.

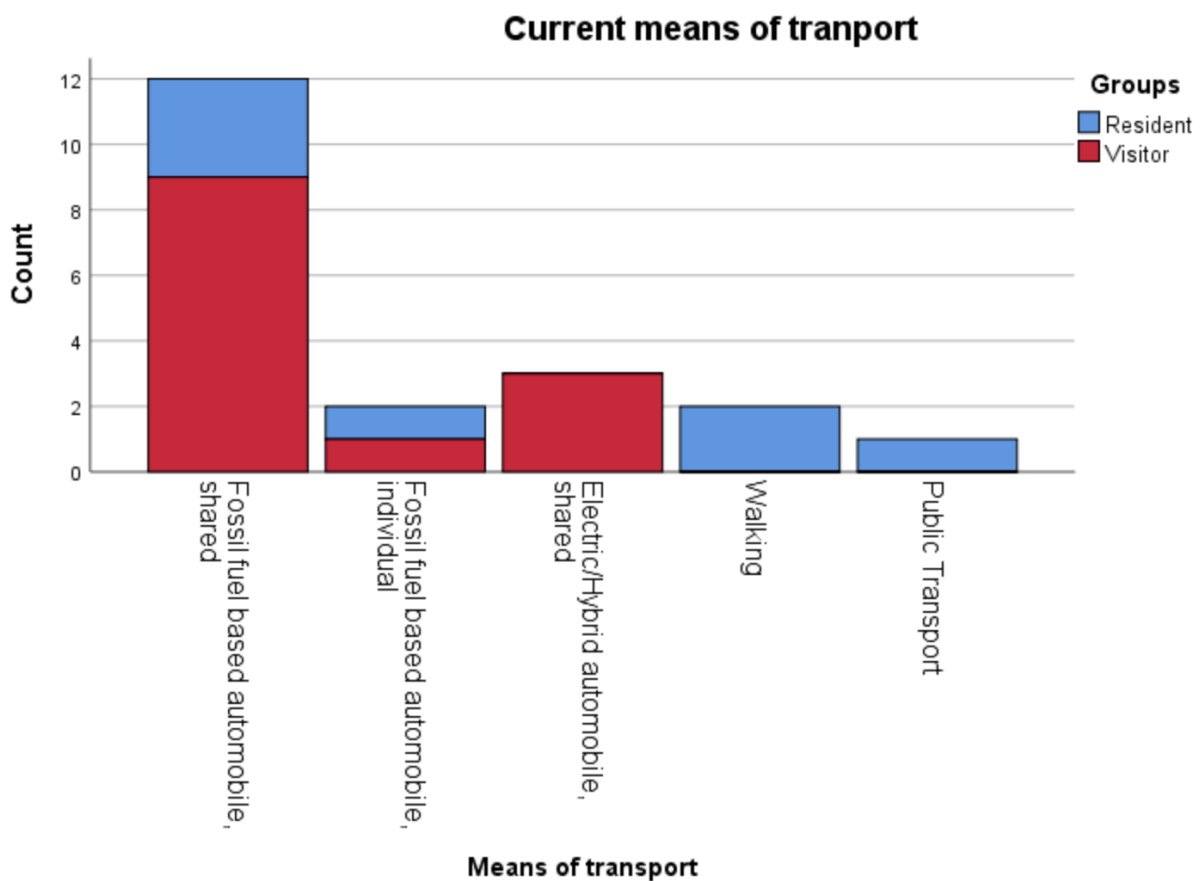


Figure 4.1 - Modes of transport used by residents (blue) and visitors (red)

Location coordinates (GCS)					
Vehicle Type	52.116774, 5.362605	52.122606, 5.353874	52.060236, 5.403660	52.031078, 5.495221	52.015892, 5.416580
Fossil Fuel Car	816	104	612	267	688
Electric Car	28	2	28	0	3
Biofuel Car	0	0	0	0	0
Motorbike	36	16	9	21	32
Bicycle	108	100	53	79	128
Electric Bicycle	52	40	0	0	31
Bus	0	0	2	1	7
Pedestrian	NA	0	NA	5	13

Table 1 - Count of mobility trips at Utrechtse Heuvelrug on the 1st June 2021 (Group 5C)

4.2. Desires or preferences for modes of transport

The section presented below shed some light on the second sub-question, 'What are the desires or preferences of both locals and visitors of transporting methods within (and around) the park?'

The results show that visitors and residents choose their mode of transport to the Utrechtse Heuvelrug based upon different criteria. The main components that form desires or preferences of both locals and visitors regarding transportation modes are: Time and Distance, Comfort, and Costs (figure 4.2).

7. Why did you choose this way of travel/means of transport?

19 Antworten

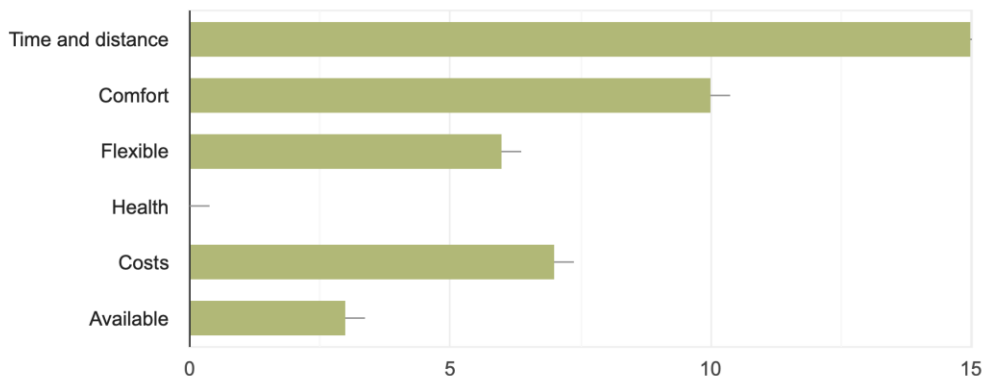


Figure 4.2 - Motivation for a specific choice of transport by both visitors and residents

Only 23.5% of the participants that indicated to own a bike (either electric or normal) actually considered coming by bike. The main reason for this choice is the distance towards the Utrechtse Heuvelrug which supports the prior finding of time and distance being the most important aspects in choosing the mode of transport. Many of the visitors mentioned that, if they were to live closer by, they would consider alternative means of transport, such as the bike. Furthermore, participants consider the positive aspects of biking in their choice, such as the price (30,8%) and good accessible cycling routes (30,8%).

The implementation of a point in or outside the park where it is possible to rent bikes received different reactions. In general, people who already own an (eclectic) bike themselves, gave as a reason that they do not see a necessity to have a free bike renting point in the park. Nevertheless, visitors from a further distance, who do not bring a bike with them, would like this option within the park as a form of recreation or multimodal transport. Figure 4.3 shows the result divided by residents and visitors. A bigger part of the visitors indicated that they would like the opportunity to rent freely available bikes. The named disadvantages for using a bike were: Distance and Transport ability.

The factors that keep people from using the bike as a mode of transport are hampered by the standardized level of the car as the main mode of transport. Since cars became available for the general public, they have been the dominant mode of transport, and thereby shaping modern-day infrastructure. Social practices, regarding the choice of mobility, have evolved around them, and created a car-dependent society. Driving is nowadays linked to all kinds of practices, including commuting to work, travelling and free time activities (Shove et al., 2015) and so are its advantages such as time and flexibility.



Figure 4.3 - Opinions of residents and visitors about creating possibilities to rent bikes for free in the Utrechtse Heuvelrug

The next alternative form of transportation for both visitors and residents is public transport. Most participants were slightly more negative towards this form of transport, as we received 16 answers out of 21 for cons of public transport and only 9 answers for pro’s. Time (50%), Costs (31.3%) and Bad Infrastructure (31.3%) were the most prominent answers to the question. The cons to the usage of public transport is illustrated in the figure 4.4. The desires for public transport tend towards better connection and especially, lower prices.

3. What are cons for you to use public transport to travel to the Utrechtse Heuvelrug?
16 Antworten

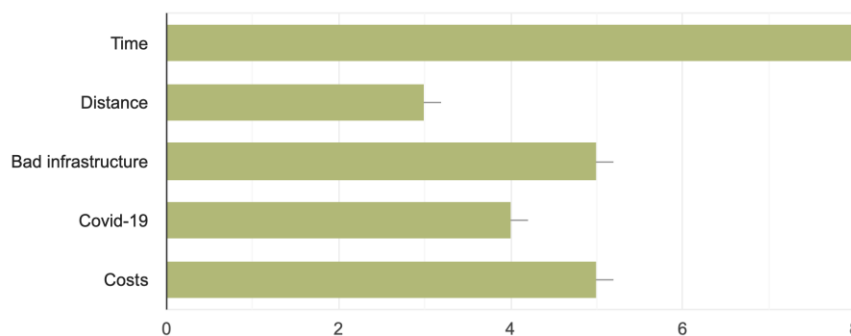


Figure 4.4 - Cons to the usage of public transport as an alternative mean of transport

Another finding which came forward in this study is that, from those people who do not have access to free public transport, which is by far the majority, 70% did not even consider coming by public transport. This refers back to the previous figure (figure 4.4) which illustrates the reasons behind this. In addition, 35.3% of the people who were asked this question, did not seem to be aware whether the park was easily accessible or not and 29.4% thought of the park as not well accessible by public transport.

4. Do you think the park is easily accessible with public transport?

17 antwoorden

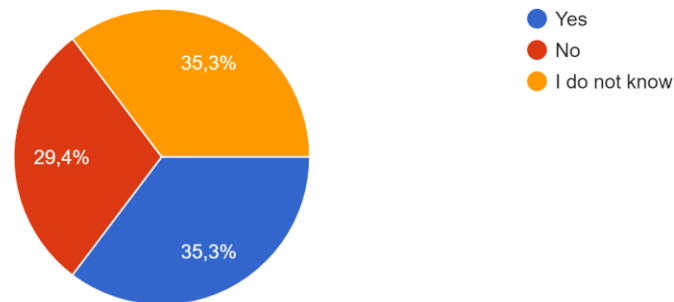


Figure 4.5 - Accessibility of the park by public transport

Furthermore, it appears that the lack of proper connection and infrastructure is a barrier to consider the train, bus, tram, etc. as an alternative. Figure 4.6 illustrates that $\frac{2}{3}$ of the people who mentioned that the public transport is not well connected, claim that they would make more use of public transport if this problem would be solved. This will further be discussed in the later part of barriers of a shift towards sustainability.

4.b. If not, if public transport was better connected, would you consider using it (more)?

6 antwoorden

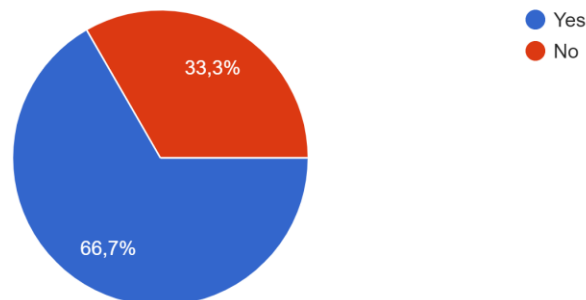


Figure 4.6 - How much more use would be made of public transport if it were better connected

Finally, the results illustrate that 64.3% of the people who were asked to answer this question, would make more use of public transport if it were cheaper (figure 4.7). When asked how much cheaper, the answers were quite consistent: 87.5% would want the costs of coming by public transport to be lower (and thus more interesting) than the costs of e.g. gas (i.e. the costs of coming by car). The other 12.5% wants public transport to be cheaper than it is today (i.e. lower costs to travel the same distance) (figure 4.8).

5. If public transport was cheaper, would you consider it (more)?

14 antwoorden

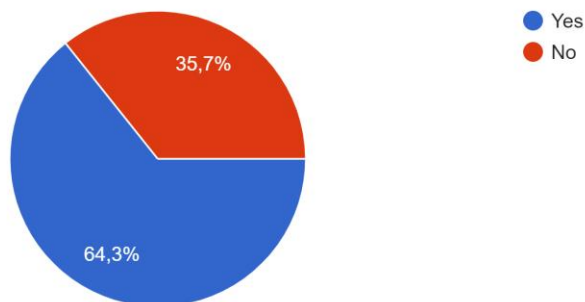


Figure 4.7 - Cheaper public transport and whether people would consider it more

5.b. If yes, how cheap should public transport be to choose it over travelling by car?

8 antwoorden



Figure 4.8 - How cheap public transport should be to consider it more

4.3. Conflicts between residents and visitors

To continue analyzing the results, the third sub-question will be answered: 'What (if any) are the conflicts that arise between people who live close to the area (residents) and people who come to visit the area from the region (visitors)?'

A part of the questions from the interview had a focus on the perception of residents about visitors, and was only asked to interviewees who were identified as residents. The overall feeling towards the visitors personally is quite neutral, just 12.5% feels negatively towards visitors of the park, 37.5% view the visitors positively and the other 50% of the people feel neutral towards them. The positive experiences are met because 'people are friendly to them' or 'it is nice to see people enjoy nature'.

Furthermore, the results of this part concluded that 87.5% (7 out of 8) of residents have experienced some type of negative external effects when in the park or at home. For example, 6 out of 7 experience parking problems in their hometown. The visitors then occupy the free parking spaces, which hampers the ability of residents to park close by their house. Also, three

residents have mentioned the annoyance towards mountain bikers in the park, because they bike over the walking path and this can lead to dangerous situations. However, just one interviewee genuinely experiences a lot of noise pollution in and around their area because of mountain bikers, race cyclists and motorcyclists. This person lives in Doorn and especially on the weekend when it is busier, the noise nuisance is worse and it bothers him/her that this continuously disturbs them when they are at home. In their perception, it is not just them, but their neighbourhood agrees and they have even discussed taking action.

Finally, the residents were asked what would happen if parking in the park would be priced and if that would negatively affect their situation. The results in figure 4.9 show that 37.5% think it would not affect their situation negatively and 62.5% think it would. This is due to the reason that if visitors have to pay for the parking in the park, they would look for free parking in the adjacent towns. This would pressure the parking availability for residents more than there already is and could increase disturbance in and around the towns.

5. Do you think pricing the parking in the park would (negatively) affect the situation in your town?

8 antwoorden

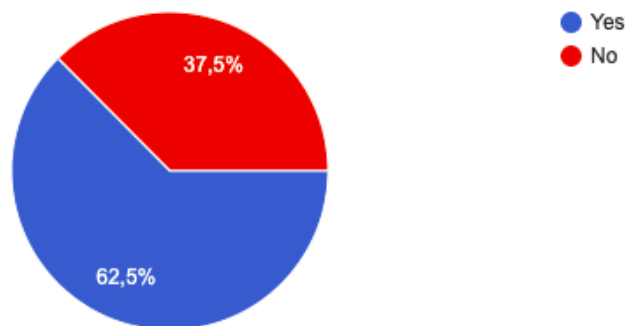


Figure 4.9 - The effect of priced parking in the National Park on the towns surrounding the park

Figure 4.10 shows the main negative externalities which have been experienced by residents of the area of the Utrechtse Heuvelrug. The black dotted line indicates the approximate area within which the interviews were performed. In addition, it is important to realize that the coloured areas are estimated, i.e. within the coloured area, one or more interviews were conducted during which one or more residents of the area mentioned their discontent with e.g. mountain bikers. The externalities include parking issues, noise pollution and disturbance by mountain bikers. It came as a surprise that some residents of Doorn did experience parking problems, while others did not. This could be due to the location of their place of residence and whether it is more adjoining to the park or closer to the centre of Doorn.

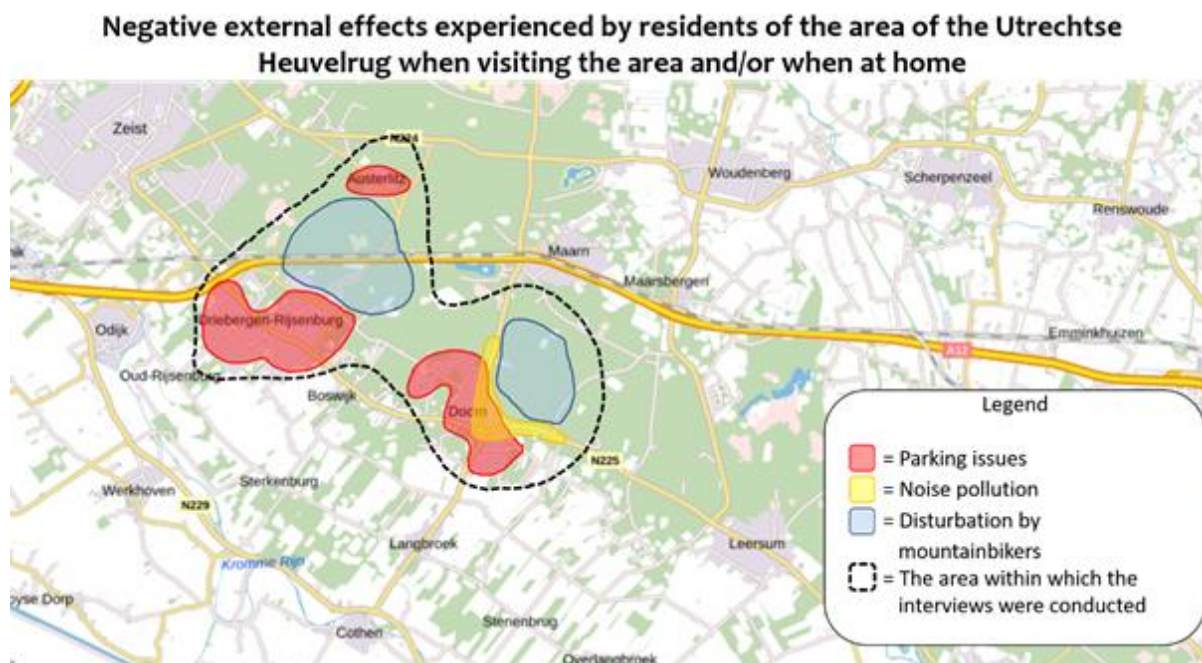


Figure 4.10 - Map of Utrechtse Heuvelrug illustrating the negative externalities as experienced by residents of the area

4.4. Barriers of the shift towards sustainability

After analysing the data about the perception and behaviour of both visitors and residents in and around the area of the Utrechtse Heuvelrug it is clear that the current prevailing choices of mobility are yet to be more sustainable. Since the choices of mobility are strongly related to everyday practices, the social practice theory will be used to further answer the sub-question, 'What barriers hamper the shift towards sustainable mobility?'

As it is depicted in figure 4.1, the most chosen mode of mobility to travel to the park was the automobile. According to the data, the main reasons to choose a less sustainable mobility mode over a sustainable option was because of distance, time, and comfort (figure 4.2). For example, choosing the car as a means of transport, instead of cycling, seemed more reasonable to some of these visitors because of distance and transport ability. Public transport was also neglected by several participants because of time, costs, connection, and comfort. While costs and comfort could be influenced by responsible institutions and the municipality of Utrechtse Heuvelrug, connection, and local availability are dependent on infrastructure, i.e. the car regime is more resilient than the alternative niches, revealing a rooted problem in society since the infrastructure is adjusted to the public's current desires and preferences.

Social practice theory explains people's behaviour as the result of collectively routinized practices in society. As the social practices are carried out by a multitude of people, they form 'structures' in communities. These structures can lead society to be locked-in in certain behaviour patterns and practices. It was mentioned before that social practices

regarding the choice of mobility have evolved around the car as the main mode of transport and created a car-dependent society.

As parking in the Utrechtse Heuvelrug is free now, participants were asked if they would still consider coming by car when parking in the area would cost them. Only two out of sixteen respondents stated clearly that they would not be willing anymore to come by car. Four respondents indicated “maybe”, while the majority of ten signalled that parking costs would not affect their decision. These results support the above-mentioned idea of car dependency in modern-day society.

Furthermore, as a great part of infrastructure focuses on cars, it creates a conflict of space regarding alternative types of mobility. Large investments were made for long-sustaining infrastructure and involved technical systems to support car mobility (Seto et al., 2016). In comparison, infrastructure for alternative modes of mobility has been less developed, based on the results (figure 4.2), which contradicts the importance of switching towards more sustainable mobility. Moreover, it creates a conflict between users of alternative means of transport as the available space for these mobility options is limited. For instance, some participants indicated that they felt endangered by cyclists (mountain and racing), who did not stay on the pathways which are designated for them (see figure 4.10). Thus, the conflict of space further constructs barriers for alternatives.

Some alternatives can be imagined by residents and visitors, however, these are facing socio-technical and socio-economic barriers. The conflict of space is a socio-technical barrier for alternatives as it results from a car dependent infrastructure. The costs of changing such infrastructure further hinders the shift to more sustainable alternatives. After all, a change in infrastructure is inevitable in order to implement the desired alternative means of transport, by residents and visitors, such as: electric scooters, steps, and electric automobiles, especially for elderly and handicapped people. In addition to the before mentioned, alternatives also lack competitiveness in time, comfort, and flexibility compared to cars. Regarding hygiene, the ongoing Covid-19 pandemic also highlights a considerable weakness of public transport.

As social practices, regarding mobility, evolved around the advantages of using a car, such as time and comfort, they have been greatly influencing people’s choices of mobility. Thus, it seems evident that a shift towards sustainable mobility not only requires technological innovation but also a change in social behaviour. The above-mentioned car-dependent behaviour can shape modern-day infrastructure since this is adjusted to meet people’s needs and demands. The resulting conflict of space and car dependence hampers the development of alternative means of transport and creates barriers. As alternatives can not easily develop, a vicious circle is created around car dependency (figure 4.11).

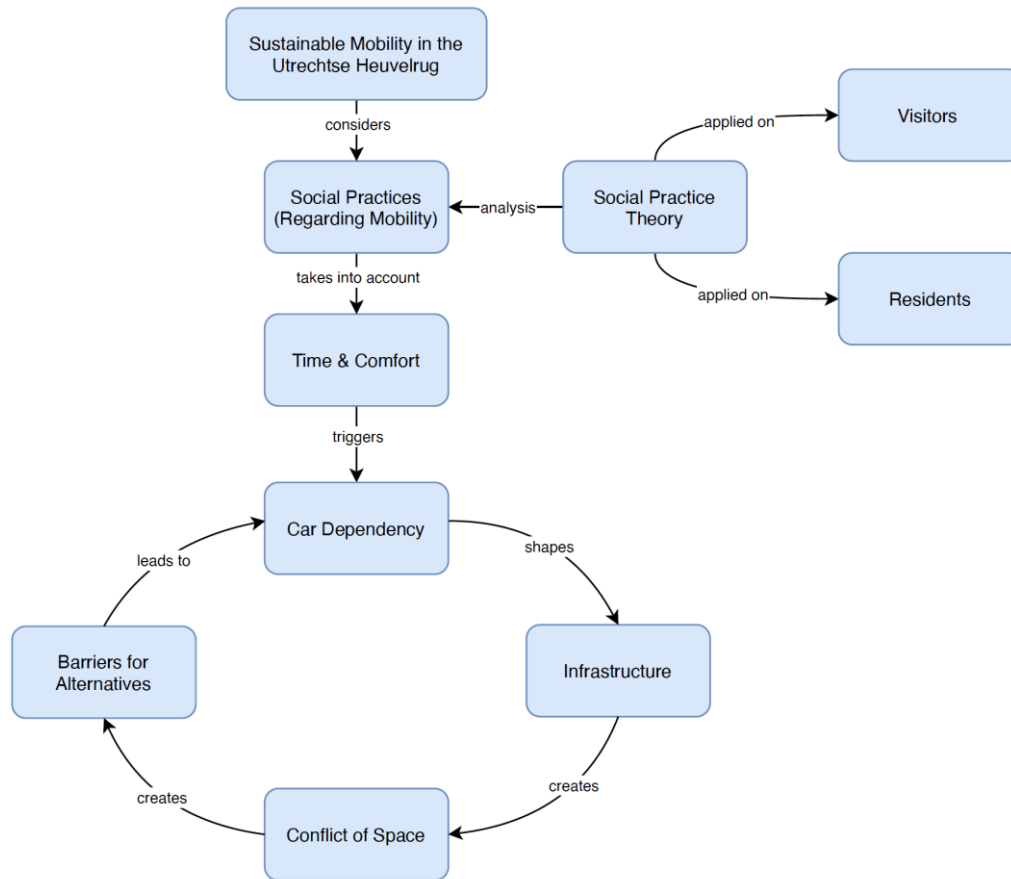


Figure 4.11 - Concept map 'Sustainable mobility in the Utrechtse Heuvelrug' considering Social Practice Theory

5. Conclusion

A qualitative approach to socio-technological changes has been missing in the scenarios of low-carbon mobility. The prognostics have focused on technological substitution and there is only a limited representation of niche-regime interactions and behavioural change in the current literature (Köhler et al., 2020). Therefore, bridging the gap among the technical systems of mobility and social transitions requires further research efforts. The current report aimed to shed some light through a qualitative approach and answer the research question: 'What changes in perception and behaviour of both visitors and residents of the area of the Utrechtse Heuvelrug can contribute to attaining climate neutrality in the Utrechtse Heuvelrug region by 2035?'

The Multi-Level Perspective and Social Practice Theory showed similar results in the analysis and complemented each other. Both theories helped to identify a rooted car-dependency within society, which reinforces the regime's resilience and surrounds the social practices regarding mobility. A shift in perception of both visitors and residents, focusing on awareness and information campaigns, is required to promote a change in the behaviours which entangle car-dependency. In the specific case of Utrechtse Heuvelrug, the Multi-Level Perspective was used to identify public transport and biking as potential niches instead of subaltern regimes, which is the case in other urban Dutch areas.

The Social Practice Theory showed that the car-dependent behaviour of people also influenced the construction of modern-day infrastructure. Designed mainly for cars, this infrastructure hampers the shift towards other types of mobility. It suggests that car-related practices need to be broken down to achieve change and stop the vicious circle around car dependency (figure 4.11). However, this is more difficult than assumed, as routinised practices created a car-dependent structure in society, and practices therefore take a standardised level of mobility for granted as it was provided through the car for several years. A key solution is going to lay in increasing the competitiveness of the identified niches and eventually establish them as subaltern regimes.

Follow-up research should be conducted on possible mobility alternatives and what needs to be implemented to make sustainable options more attractive and legitimate to residents. The sample size should also be considered to be able to carry out statistical inferences in future research, whether the approach is quantitative or qualitative.

In conclusion, achieving the Utrechtse Heuvelrug municipality's goal of climate neutrality by 2035 requires further efforts ranging from the creation of incentives for visitors and residents to use alternative and more sustainable means of transport, such as shared means of mobility, public transport, bikes or electric vehicles. Walking towards this future vision requires the strengthening of potential green niches and a change in the perception and behaviours of residents and visitors towards the ecosystems the National Park offers.

6. Relevance and integration possibilities

Mobility contributes to the viability of society (Thoen et al., 2010). Solving the problem of unsustainable modes of mobility would solve multiple problems at once. One of the main problems is climate change, which goes hand in hand with unsustainable mobility. If unsustainable mobility use diminishes, carbon emissions decrease and therefore climate change can be tackled. Mitigating carbon emissions is important for the future and relevant globally, as it is a major problem worldwide. Unsustainable mobility leads to noise pollution, which is an issue for the neighbourhoods surrounding the area (figure 2.1), and air pollution, as traffic and transport is the most important source for poor air quality and this can affect public health (Thoen, et al., 2010).

The municipality of Utrechtse Heuvelrug is aiming for climate-neutrality by 2035. To reach this goal there needs to be a collaboration of interdisciplinary perspectives on the issue. According to the Social Practice Theory, patterns are based on social practices. However, this study does not just have a social side, but also a natural (technical) side, which both need to be included and considered to solve this problem. This research has a focus on the social aspect of sustainable mobility and it is narrowly related to, for example, group 5C, Sustainable Mobility in the Region. Their focus is on the technical side and we cooperated with them by sharing knowledge to use for our research.

Furthermore, this study relates to other relevant topics, for example, tourism and nature management. In this study, we want to identify what residents think about visitors/tourists in the park Utrechtse Heuvelrug. Globally, tourism can be controversial as it has an up-and downside. Tourists/visitors can have a positive effect on the region economically, however, the downside is that they do not follow the rules, can disturb residents, and collapse the natural ecosystems, not staying on the paths or littering their surroundings.

In addition to this, the Utrechtse Heuvelrug runs one of the largest highways of the Netherlands, the A12, along with many other roads within the area that cut through the park, resulting in fragmentation of the nature area (Thoen et al., 2010). The presence of the roads negatively influences the environment, because it aggravates the quality of the ground of the roads in the Park and it burdens the natural habitat of people, animals, and plants (Thoen et al., 2010). The management and protection of nature need to be improved in and around the National Park and the municipality should take the example of other changes/improvements around the world. In conclusion, as mobility choices can influence the environment and human well-being, a transition towards new ways of mobility is key for the sustainable future of Utrechtse Heuvelrug.

7. Reference list

- Bakogiannis, E. et al. (2017). Four stories for sustainable mobility in Greece. *Transportation Research Procedia*, 24, 345–353. <https://doi.org/10.1016/j.trpro.2017.05.101>
- Bruggeman, R. (2018). VTH-Beleidsplan 2019-2022. Bouwen en Ruimtelijk Ordening, Milieu, APV & Bijzondere Wetten. Retrieved from: https://www.heuvelrug.nl/_flysystem/media/vth-beleidsplan_utrechtse_heuvelrug.pdf
- Bui, S. et al. (2016). Sustainability transitions: Insights on processes of niche-regime interaction and regime reconfiguration in agri-food systems. *Journal of Rural Studies*, 48, 92-103. doi: dx.doi.org/10.1016/j.jrurstud.2016.10.003
- European Commission. (2020). Investing in a climate-neutral future for the benefit of our people. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.
- Gallo, M., & Marinelli, M. (2020). Sustainable Mobility: A Review of Possible Actions and Policies. *Sustainability*, 12(18), 7499. <https://doi.org/10.3390/su12187499>
- Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. *Research Policy*, 31, pp. 1257 – 1274.
- Geels, F. W. (2012). A socio-technical analysis of low carbon transitions: introducing the multi-level perspective into transport studies. *Journal of Transport Geography*, 24. <https://doi.org/10.1016/j.cosust.2019.06.009>
- Hargreaves, T. (2011). Practice-ing behaviour change: Applying social practice theory to pro-environmental behaviour change. *Journal of Consumer Culture*, 11(1), 79–99. <https://doi.org/10.1177/1469540510390500>
- Khöler, J. et al. (2020). Low carbon transitions pathways in mobility: Applying the MLP in a combined case study and simulation bridging analysis of passenger transport

in the Netherlands. *Technological Forecasting & Social Change*, 151. doi: 10.1016/j.techfore.2018.06.003

Ministerie van Economische Zaken en Klimaat. (2019). National Climate Agreement - The Netherlands. Retrieved from: <https://www.klimaatakkoord.nl/documenten/publicaties/2019/06/28/national-climate-agreement-the-netherlands>

Mortensen, D., Rauschert, E., Nord, A., & Jones, B. (2009). Forest Roads Facilitate the Spread of Invasive Plants. *Invasive Plant Science and Management*, 2(3), 191-199. doi:10.1614/IPSM-08-125.1

Pitsiava–Latinopoulou, M. et al. (2012). Parking Policies for Supporting Sustainable Mobility. *Procedia - Social and Behavioral Sciences*, 48, 897–906. <https://doi.org/10.1016/j.sbspro.2012.06.1067>

Putman, L., & de Wit, B. (2017). Ambitiedocument Routekaart Klimaatneutraal grondgebied 2035. Retrieved from: <https://www.heuvelrug.nl/flysystem/media/klimaatroutekaart.pdf>

Reckwitz, A. (2002). Toward a Theory of Social Practices. *European Journal of Social Theory*, 5(2), 243–263. <https://doi.org/10.1177/13684310222225432>

Seto, K. C., et al. (2016). Carbon Lock-In: Types, Causes, and Policy Implications. *Annual Review of Environment and Resources*, 41(1), 425–452. <https://doi.org/10.1146/annurev-environ-110615-085934>

Sheller, M. (2004). Automotive Emotions: Feeling the Car. *Theory, Culture & Society*, 21(4–5), 221–242. <https://doi.org/10.1177/0263276404046068>

Shove, E., & Warde A. (2002). Inconspicuous consumption: The sociology of consumption, lifestyles, and the environment. In: Dunlap R., Buttel F., Dickens P. and Gijswijt A. (eds) *Sociological Theory and the Environment: Classical Foundations, Contemporary Insights*. London: Rowman and Littlefield.

Shove, E., Watson, M., & Spurling, N. (2015). Conceptualizing connections. *European Journal of Social Theory*, 18(3), 274–287.

<https://doi.org/10.1177/1368431015579964>

Toen, E., Bekker, E., de Beaumont, R., & ter Horst, R. (2010). Gemeentelijk Verkeers- en Vervoerplan. Beleidsdocument: Sturen naar duurzame mobiliteit.

https://www.heuvelrug.nl/flysystem/media/gemeentelijk_verkeers-en_vervoersplan_gvvp.pdf

Urry, J. (2004). The 'System' of Automobility. *Theory, Culture & Society*, 21(4–5), 25–39. <https://doi.org/10.1177/0263276404046059>

Welch, D., & Yates, L. (2018). The practices of collective action: Practice theory, sustainability transitions and social change. *Journal for the Theory of Social Behaviour*, 48(3), 288–305. <https://doi.org/10.1111/jtsb.12168>

8. Annexes

8.1. Data Management Plan

A Data Management Plan created using dmponline

Creator: Lilly Dexne

Affiliation: Utrecht University

Template: Utrecht University DMP

Project abstract:

This project aims at a social shift towards sustainable mobility. Our research will focus on preferences, opportunities, and future visions of residents and visitors around Utrechtse Heuvelrug. A key point of the project is the importance of social practices to achieve socio-technical transitions. Social and socio-technical theories will be applied to analyze the data and find possible government inventions towards a sustainable National Park.

Last modified: 21-05-2021

SUSTAINABLE MOBILITY AND RESIDENTS IN THE AREA OF UTRECHTSE HEUVELRUG

Data collection

1.1 Will you re-use existing data?

No, I will be collecting/generating new data

1.2 Describe your data.

#	Data Description	Data Type	Format	Total Volume
1	Questionnaire about mobility	Tabular	.docx	
2	Semi-structured interview	Audio	.wav	
3	Semi-structured interview	Tabular	.docx	

Data documentation

2.1 Describe the documentation and metadata that you will use to make your data reproducible and interoperable.

A brief description for complex questions will be provided based on our previous literature review. However, we believe that most of the questions can be answered with general knowledge and preferences about mobility.

2.2 Describe the folder structure you will provide to make your data reproducible and interoperable.

Our folder structure will be broken down into the ways of collecting research and the underlying data type for each research conducted.

Versions will be kept track of by adding V# at the end of filenames when there is the possibility of new versions (i.e. in manuscripts filename_V1.docx)

Data storage

3.1. Select the storage solution where you will store and back-up your data.

The data will be saved on all the laptops of the 5 group members in U:drive.

Data privacy and security

4.1 Will you be collecting or using personal data ?

Yes, I will collect and/or use personal data.

The personal data will stay anonymous and just be used for the research groups to identify target groups.

4.2 What is the legal basis by which you are collecting and/or processing this data ?

Informed consent

4.3 Select the privacy and security measures you will employ to protect the privacy of your data subjects. Check all that apply.

- Access control
- Secure storage

4.4 Who is the controller of the personal data ?

Utrecht university is the controller of the collected personal data. Nevertheless, the principal investigator of the research project will ensure that the data is handled and processed in accordance with the GDPR.

4.5 How will ownership and intellectual property rights of the data be managed?

The principal investigator will determine who has access to the data within the research group. All intellectual property rights belong to Utrecht University.

During the project, all project members will have access to the data. This includes all members of the research group.

If any member wishes to grant (temporary) access to others, they should seek approval from the principal investigator. This is allowed from GSS students that are participating in the Regional Integration Project Course 2021.

Data selection, preservation & sharing

5.1 Describe the data you will be preserving and the storage solution where it will be preserved?

All collected data will be preserved.

The data will be kept for at least ten years. The data will be preserved in a vault where the data are kept safe and cannot be tampered with.

8.2. Semi-structured interview

Dear participant,

We would like to thank you for your time. Your input is highly valuable for us, Utrecht University students, and by dedicating some minutes of your time to us we would like to let you know that you are contributing to the sustainability sciences research field. Our research will focus on preferences, opportunities, and future visions of residents and visitors around Utrechtse Heuvelrug. You will be asked to answer a couple of questions which will take approximately 10-15 minutes.

The data gathered will be safely stored and processed according to the General Data Protection Regulation. The personal data will stay anonymous and it will just be used by the researchers to identify target groups exclusively for the above mentioned research goal. The data subjects have the right to withdraw their consent at any time by contacting the research coordinator Doctor Brett Petzer <b.j.petzer@uu.nl>.

Yes, I agree with the research conditions and consent to data processing.

Part 1: General Information

Q1.1. In which town or city do you live?

Q1.2. What is your year of birth?

Q1.3. What brings you to the park generally? (*so not just today*)

Q1.4. How often do you visit the park?

Q1.5. How did you travel to the park? With how many people did you travel with?

Q1.6. How long did you travel? And how far (estimated value in km)?

Q1.7. Why did you choose this way of travel/means of transport?

Part 2: Alternatives for current means of transport

Q2.1. Have you considered alternative ways of coming to Utrechtse Heuvelrug?

We will now talk through a few possible ways of (alternative) transport: the bike, public transport and the car.

Part 2a: The bike as a form of mobility

Q2.2.1. Do you own a bike/electric bike? Did you consider coming by bike? (*why or why not?*)

Q2.2.2. What are pro's and con's for you to use the bike to come here?

Q2.2.3. What would get you to come by bike? What would make it easier for you to go by bike or what would make it more interesting?

Q2.2.4. If there would be a point outside the park or in the park where you can rent bikes for free, would you consider using it? (*why or why not?*)

Part 2b: Public Transport

Q2.3.1. Do you have access to (free) public transport?

> *If yes, do you make use of this (at times)? (why or why not?)*

> *If not, do you still consider coming by public transport? (why or why not?)*

Q2.3.2 What are pro's and con's for you to use public transport? (mainly: what are the barriers)

Q2.3.3. Do you think the park is easily accessible by public transport?

> *if not, if public transport was better connected, would you consider using it (more)?*

Q2.3.4. If public transport was cheaper, would you consider it?

> *If yes, how cheap should public transport be to choose it over travelling by car?*

Part 2c: Car as a mean of transport

Q2.4.1. Do you have a car?

> *If yes, is it electric?*

(If they have a car)

Q2.4.2. Which of the following do you think is the most **important** negative effect the emission of cars have? The options are: they impose a serious risk to human health, they increase climate change or anticonsumerism.

Q2.4.3. If you had to pay for parking in the park, would you still consider coming by car?
> *Currently the parking lots in the park are free. How much would you be willing to pay maximum for parking inside the Heuvelrug?*

Part 3: Desired ways of mobility in Utrechtse Heuvelrug

Q3.1. Would a large number of visitors in the park affect your choice of mobility? (e.g. because of an overcrowding of visitors the parking spots might be full)

> *In rush hours, considering parking availability and traffic, what means of transport would you choose?*

Q3.2. What other means of transport could you imagine within the park and to get to the park?

Q3.3. What are barriers that could hamper the implementation of this type of transport? (e.g. costs, who can and who cannot use it, at what time, etc.)

Questions specifically designed for residents

Answer these questions, if you consider yourself a resident of the region Utrechtse Heuvelrug.

Part 4: Attitude towards the park

Q4.1. Do you or have you visited the National Park of the Utrechtse Heuvelrug?

> *If yes, how often? What brings you there?*

> *If not, what do you think is the reason for you not visiting the park?*

Q4.2. When visiting the park, how do you travel there?

> *If there is an unsustainable use of transport (car, motor, scooter): why do you use this way of transport? Have you considered alternative ways of travelling?*

> *If there is sustainable transport (train, bike, walking etc.), why do you use this way of transport?*

Q4.3. Do you consider the park as part of your neighbourhood? (*why or why not*)

Q4.4. How do you feel about the visitors of the park? (*how come?*)

Part 5: Relation between visitors and residents

Q5.1. Have you experienced negative external effects when visiting the park, e.g. noise pollution from both motor vehicles and people?

Q5.2. Have you experienced negative external effects when at home due to the park, e.g. noise pollution from both motor vehicles and people but also parking problems?

Q5.3. Have you experienced problems or issues towards visitors? For example, taking away parking spaces in the neighborhood?

Part 6: Future visions by residents and visitors

Q6.1. What is your vision on implementing an entrance fee for people who want to visit the park?

> *If agreed on the entrance fee, what is the maximum fee you would be willing to pay?*

Should there be a difference in prices for visitors and residents

Q6.2. Would you be pro or con about making the entire park a car-free zone?

> *Why do you think that is the best option? Do you think others will share your opinion (think of neighbors).*

Q6.3. Do you think pricing the parking within the park would affect the parking situation in your town?

Thank you for your participation!

8.3. Transcriptions of the interviews

Interview 1 - Austerlitz, Construction Worker

Part 1

Q1.1. In which town or city do you live?

A: Zeist

Q1.2. What is your year of birth?

A: 1964

Q1.3. What brings you most often to the park (recreation, sports, nature, work, etc.)?

A: Don't visit the park

Q1.4. How often do you visit the Nationaal Park Utrechtse Heuvelrug?

A: Rarely

Q1.5. How did you travel to the park?

A: By car

Q1.6. How long did you travel? And how far (estimated value in km)?

A: 15 minutes, probably around 7km

Q1.7. Why did you choose this way of travel/means of transport?

A: Easy, comfortable

Part 2: Alternatives for current means of transport

Part 2a: The bike as a form of mobility

Q2.2.1. Do you own a bike/electric bike? Did you consider coming by bike? (why or why not?)

A: No, I don't have a bike

Part 2b: Public Transport

Q2.3.1. Do you think the park is easily accessible by public transport (bus, trains and others)?

A: No, it's not

Part 2c: Car as a mean of transport

Q2.4.1. Do you have a car?

Yes, I've got a gas or diesel car.

Q2.4.2. Which is the most important negative effect that car emissions have according to you?

A: Don't consider any negative effects of car emissions

Q2.4.3. If you had to pay for parking in the park, would you still consider coming by car?

A: Yes

Q2.4.4. Currently the parking lots in the park are free. How much would you be willing to pay maximum for parking inside the Utrechtse Heuvelrug (€ per hour)?

A: Normal prices

Part 3: Desired ways of mobility in Utrechtse Heuvelrug

Q3.1. What is your vision on implementing an entrance fee for people who want to visit the park? Should there be a difference in prices for visitors and residents?

A: Yes, entrance fee can be seen as a possibility

Q3.2. What do you think about making the entire Nationaal Park a car-free zone with the purpose of achieving carbon neutrality?

A: Yes, car free zone

Interview 2 - Austerlitz, Woman with dog

Part 1

Q1.1. In which town or city do you live?

A: Austerlitz

Q1.2. What is your year of birth?

A: 1962

Q1.3. What brings you to the park generally? (so not just today)

A: Dog, pleasure, greenness/nature

Q1.4. How often do you visit the park?

A: Several times per week

Q1.5. How did you travel to the park? With how many people did you travel with?

A: Bike, Walk

Q1.6. How long did you travel? And how far (estimated value in km)?

A: I live directly at the park

Q1.7. Why did you choose this way of travel/means of transport?

A: Possibility, cheap, nice

Part 2: Alternatives for current means of transport

Part 2a: The bike as a form of mobility

Q2.2.1. Do you own a bike/electric bike?

A: Yes, I've got a traditional bike.

Q2.2.2. If there would be a point outside the park where you can rent bikes for free, would you consider using them? (why or why not?)

A: In Holland almost everyone has a bike and takes a with them (OV)

Part 2b: Public Transport

Part 2c: Car as a mean of transport

Q2.4.1. Do you have a car?

A: Yes, I've got a gas or diesel car.

Part 3: Desired ways of mobility in Utrechtse Heuvelrug

Q3.1. What is your vision on implementing an entrance fee for people who want to visit the park? Should there be a difference in prices for visitors and residents?

A: Nature should be accessible for everyone

Q3.2. What do you think about making the entire Nationaal Park a car-free zone with the purpose of achieving carbon neutrality?

A: It is an option, also for cities, P+R needs to be implemented, maybe it's a barrier for people to go to the park

Part 4: For the residents of Utrechtse Heuvelrug

Q4.1. Have you experienced negative external effects when at home due to the park visitors, e.g. noise, pollution, parking problems?

A: Yes, parking problems

Q4.2. Do you think pricing the parking within the park would affect the parking situation in your town?

A: Visitors should use parking spaces; pricing might make it more difficult and they might end up using natural areas/road edges

The following 3 interviews belong to a group of colleagues that were near the Chalet St. Helenaheuvel and came to the Nationaal Park for working reasons.

Interview 3 - Chalet St. Helenaheuvel

Q. Where do you come from?

Nijmegen

Q. What's your year of birth?

1990

Q. How did you come to the park?

Car (not electric).

Q. Did you think about alternative means of transport to come here?

No, for me the car is the quickest and easiest.

Q. Do you own a bike or an electric bike?

Just a normal bike.

Q. Have you got access to free public transport?

No.

Q. According to your opinion, what are the pros and cons of public transport?

Public transport is very fast in the city centre, well, I live in the city centre and there public transport is quickest than car. But for this kinds of destinations [referring to the Utrechtse Heuvelrug] is easiest to come by car.

Q. If you had access to points with free electric bikes, would you use them instead of the car? Would you commute by train and then pick one?

No, I would just come by car.

Q. Would you come by car if you had to pay?

Yes.

Q. What would be your top price you would be willing to pay in order to park?

Yeah, something like 2€/ hour. Like 10€ maximum for the day. But the parking is now free, right?

Q. What would motivate you to pick another way of transport?

If it was quickest.

Interview 4 - Chalet St. Helenaheuvel

Q. Where do you come from?

Arnhem

Q. What's your year of birth?

1994

Q. How did you come to the park?

Train (public transport)

Q. How long did it take you?

1 hour

Q. Did you think about alternative means of transport to come here?

I don't have a car so I could not choose from many options.

Q. Do you own a bike or an electric bike?

Normal.

Q. Have you got access to free public transport?

No.

Q. According to your opinion, what are the pros and cons of public transport?

I think it's crowded, you have to be on time at the station with restrict schedules so you are less flexible.

Q. If you had access to points with free electric bikes, would you use them instead of the car? Would you commute by train and then pick one?

I think it's a good idea, but I would probably not use them.

Interview 5 - Chalet St. Helenaheuvel

Q. Where do you come from?

Woerden

Q. What's your year of birth?

1986

Q. Did you travel alone?

No, we commute together [referring to a colleague from 1990].

Q. How did you come to the park?

Car (shared by two people, the answers belong to the car owner who is from 1986).

Normal car

Q. Did you think about alternative means of transport to come here?

No, we just came by car. It's the quickest taking into account how far we live.

Q. Do you own a bike or an electric bike?

I own both.

Q. Have you got access to free public transport?

No.

Q. Do you think public transport options are well connected?

Not to come here.

Q. Would you come by car if you had to pay for the parking?

Yes.

Q. What would be your top price you would be willing to pay in order to park?

2€/ hour

Q. What would motivate you to pick another way of transport?

I would choose another mode if the travelling time would be the same. For me the car is most of the times the fastest option, even though I live near the station and near the highway.

Q. Even if the weather was nice like today, would you keep up with your option?

It's too far. Coming to the woods is half an hour by car so I would never do it by bike, maybe on holidays.

Interview 6 - St. Helenaheugel, married pair

Me: Hi, thank you so much for making the time to answer a couple of questions about the mobility you used to travel from and within the area of Utrechtse Heuvelrug.

A: Yes of course, it is no problem really.

Me: Great! Please note that, if you wish to review your participation in this research, please let us know by sending an email to our supervisor Dr. B. Pretzer.

A: Thankyou, I don't think I will though.

B: Depends on what you will ask us I think haha.

Me: Haha, the questions are rather simple, we want to investigate what drives people to make a particular choice of mobility.

B: Yes okay, do not worry. I was merely joking.

Me: Aha okay good. Well, shall we get started then?

A: Yes sure that is fine.

Me: The first question I would like to ask you is: in which town or city do you live?

A: We are married and live together in a small town near Rotterdam.

Me: Okay, thank you. And, if you do not mind me asking, what is your year of birth?

A: No, not at all. I was born in 1970.

B: And I was born in 1960.

Me: And what brings you to the park generally? So not just today but when looking to a larger period of time.

A: Well I have not been here that often, but mainly just to walk and to visit the towns nearby.

B: Yeah that is right, today we are here just to visit Austerlitz and maybe another time we will come back here and walk a bit more. Today is really too hot.

Me: Aha yes I can imagine, it is really warm today. You just mentioned not that often, how often is that approximately?

A: Uhm I think I have been here 2 times so far and every time that I came here it was to visit nature.

B: I have been here more often than my wife, I think 5 or 6 times or so? And yes, also to visit nature. It is not that there is no nature in the area of where we live, but this is just different and more nature-like.

Me: More nature-like?

B: Yes, so the trees are bigger than where we live and it seems as if nature is more... natural. I personally like this better.

Me: Ohh yes I see. I understand what you are saying. It is rather sad that not all natural areas are like this one huh?

B: Yes exactly.

Me: Okay, do you mind me continuing with the next question?

B: No not at all, please do continue.

Me: So the next question is: how did you travel to the park and with how many people did you travel?

A: We came here by car, together. So two people total.

Me: And how long did you travel? And how far approximately in kilometres?

A: We drove for about one hour I think and it is around 60 km?

B: Yes I think it was approximately 65 km.

Me: Okay. Thankyou. If you do not mind me asking, what drove you to choose this form of transport?

A: I think just because going by car is the fastest way to get here.

Me: Okay and what about you?

B: Yes I agree. Plus parking is free here.

Me: Aha okay I see, thanks. Have you perhaps considered other ways to come here?

A: Well we know that travelling by car is not the best for the environment and all that but I think we did not really consider any alternatives?

B: No not really. I find the way how for example public transport works quite vague and trains get cancelled so often.

A: Yes exactly. So yes, for us the car is actually the only option.

Me: Alright. We did come up with some alternative means of transport which we will now ask you a couple of questions about. So first of all, the bike. Do you own a bike or an electric bike and did you consider coming by bike?

A: I own a normal bike and my husband has an electric bike.

B: Yes I do have an electric bike but it really is too far for us to come here by bike.

Me: Yes I understand, 60-65 km is quite far away indeed. So a con of using the bike to come here would be the distance, what could be a pro for you?

B: I think, if the weather is nice and if it would not have been so far away it would actually be a nice route.

A: Yes same here. Sad that it is not the case.

Me: Yes indeed. So there would not really be anything that could motivate you to come by bike?

B: No, actually not.

A: Only if would live closer by and in fact, we are considering to move to Utrecht Overvecht. Maybe we would go by bike if we were to live there.

B: Yeah that is true.

Me: Oh that is so nice! We ourselves thought of the following possibility: what if there would be a point outside the park or in the park where you can rent bikes for free, would you consider using it?

A: Yes sure.

Me: Do you mind explaining why?

A: Well it could be nice to bike around the park and especially if it is free of charge, I do not see why not?

B: Yes same here. I think it would be nice for the park to have more people biking through the area, perhaps it could also change the means of transport for people coming to the area.

Me: Yes exactly! That is what we are aiming for. Okay so if you do not mind me continuing with the next couple of questions, these are about public transport. First question: do you have access to (free) public transport?

A: No I don't.

B: Me neither.

Me: Hmm okay. Would you still consider coming by public transport then?

A: Well I think I would not.

B: No me neither, especially when travelling with two persons, I think it is cheaper to go by car then by public transport.

Me: Would that be a barrier for you to make use of public transport?

B: Yes for me that would be a barrier. But I do think it depends on how many people you are travelling with, if you are alone it might be more interesting to go by train then when travelling with your family.

A: I agree with you. Also, another barrier would be covid-19, I do not like travelling by train or something now due to the crowdedness. I feel safer in the car.

B: Oh yes indeed. Me too.

Me: Aha okay I understand, thankyou. Do you think the park is well accessible though? By public transport I mean?

B: Yes I think it is fine. I have seen many bus stops in the area but I am not sure what and how exactly, we did not look into it.

A: Indeed. I do think the park is well accessible but I do not know for sure.

Me: Alright. One final question about public transport: if it was cheaper, would you consider using it more?

A: Yes I would. Definitely.

B: Yes me too.

Me: Alright and how cheap should public transport be to choose it over travelling by car?

A: Cheaper than going by car I think?

B: Yes, it should make up for the extra time it takes to travel by public transport instead of the car so less than what we would pay for gas.

Me: Alright, thank you so much. We are getting closer to the end of the interview. I now have a couple of questions about the car, you mentioned you came here by car, now I wonder: is this car by any chance electric?

A: It is a hybrid car, so yes partly electric.

Me: Okay thanks, now I have a bit of a more in depth question for you which I hope you want to answer. So, when considering the following negative effects the emission of cars have, which one do you find most important: the hazardous effect on human health or the fact that they increase global warming?

A: That is quite a difficult question, I think I would say human health.

B: Hmm... I think I would say global warming because when the natural world degrades so does our living environment right?

Me: Yes that is correct.

A: Ah well when you look at it that way... Hmm... Difficult... I think I would go for equally important then.

Me: Alright thank you for this interesting point of view. Now, as you might have noticed already, parking in the area is free. However, if you had to pay for parking here, would you still consider coming by car?

A: Yes but depends on how much it would cost.

Me: Well how much would you be willing to pay?

B: No more than 10 euros for an entire day I think.

A: Yes that sounds reasonable.

Me: And do you think that a large number of visitors in the park would affect your choice of mobility? Think of full parking places etc.

A: Yes maybe, I think in the weekend we would not come here at all because it will probably be more crowded then.

B: That is right.

Me: And in rush hours? Considering parking availability and traffic, what means of transport would you choose?

B: Then I would travel by public transport. Although I would not come here during rush hours but probably leave earlier and come here later. Do you agree?

A: Yes I do agree.

Me: Okay thanks. Next question, this one is a creative one: what other means of transport could you imagine within the park and to get to the park?

A: Well I do not know about you but maybe an electric shuttle bus or something.

B: Yes that could be nice, but also maybe electric scooters. We have those in our neighbourhood and I have not used them yet but our daughters are a fan of them.

Me: What a nice examples, however, do you think these forms of transport could be implemented or what could hinder their implementation?

A: I think funding.

B: Yes indeed, will people have to pay for the usage or will the government fund it? I can imagine arranging this would be difficult.

Me: Hmm... Yes indeed. Most of the time money makes it difficult huh?

A: Yes it does indeed.

Me: Okay, we have arrived at the last few questions which focus on the future of the park. The first question is: what is your vision on implementing an entrance fee for people who want to visit the park?

B: Well I think it depends on how much it would be right? I mean 2 euros per person would be okay but what about people who live here? They come here maybe every day and it would be weird if they had to pay right?

A: Yes agreed. Maybe if they could get some sort of free pass? But I do not think it could be possible to check this so no I would not implement an entrance fee.

Me: Thanks for your opinion. And what about making the entire park a car-free zone? Would you be pro or con?

A: That does sound nice actually, it would also be safer for the animals.

B: Yes and less noise, I feel like there is quite some noise still at the borders of the park due to traffic passing by.

Me: Okay thankyou. I believe this was the last question I had for you. So thank you very much for your time and have a nice day.

A: Yes of course, I hope we were helpful.

Me: Yes definitely, thanks again.

B: Anytime, goodbye.

Interview 7 - Nature between Driebergen and Austerlitz, two women

Part 1

Q1.1. In which town or city do you live?

A: Doorn

B: Doorn

Q1.2. What is your year of birth?

A: 1958

B: 1955

Q1.3. What brings you to the park generally? (*so not just today*)

A: Walking activities

B: Walking activities

Q1.4. How often do you visit the park?

A: Multiple times a week but only during week days (otherwise too crowded)

B: About once a week but only during week days (otherwise too crowded)

Q1.5. How did you travel to the park? With how many people did you travel?

A: By car, with two people.

B: By car, with two people.

Q1.6. How long did you travel? And how far (estimated value in km)?

A: Around 15 minutes, around 5 km.

B: Around 12 minutes, around 5 km.

Q1.7. Why did you choose this way of travel/means of transport?

A: It is the easiest on a hot day like today.

B: Comfort, easy accessible and free parking.

Questions specifically designed for residents

Answer these questions, if you consider yourself a resident of the region Utrechtse Heuvelrug.

Part 4: Attitude towards the park

Q4.2. When visiting the park, how do you travel there?

> If there is an unsustainable use of transport (car, motor, scooter): why do you use this way of transport? Have you considered alternative ways of travelling?

> If there is sustainable transport (train, bike, walking etc.), why do you use this way of transport?

A: Always by car. Parking is free in the area which makes it attractive to come by car.

B: Depending on the weather. When the sun is shining but it is not too hot by bike, otherwise by car. It is good for health so that stimulates to come by bike.

Q4.3. Do you consider the park as part of your neighbourhood? (*why or why not*)

Both: Yes, they see the nature area as a part of their neighbourhood because it is very close to home and easy accessible. Also, easy to walk into the area and to enter the area by car. They see it as an extension of their backyard.

Q4.4. How do you feel about the visitors of the park? (*how come?*)

A: Not bothered or annoyed. Plus she only visits the park during the week so then it is less crowded.

B: Not bothered or annoyed because she almost never runs into someone. Plus she only visits the park during the week so then it is less crowded.

Part 5: Relation between visitors and residents

Q5.1. Have you experienced negative external effects when visiting the park e.g. noise pollution from both motor vehicles and people?

Both: The mountain bikers are a real problem. They do not stay on the paths which are designated for them and they rush by you way too fast which is dangerous and annoying.

Q5.2. Have you experienced negative external effects when at home due to the park e.g. noise pollution from both motor vehicles and people but also parking problems?

A: No negative external effects experienced while at home.

B: Not personally but apparently there are parking problems at open parking places (open to everyone) e.g. the swimming pool. People who go mountain biking in the area park there not leaving enough space for people who visit the pool. That is a problem.

Q5.3. Have you experienced problems or issues towards visitors? For example, taking away parking spaces in the neighborhood?

Both: Mountainbikers taking in parking places at the swimming pool.

Part 6: Future visions by residents and visitors

Q6.1. What is your vision on implementing an entrance fee for people who want to visit the park?

> If agreed on the entrance fee, what is the maximum fee you would be willing to pay?

Should there be a difference in prices for visitors and residents

A: Against entrance fee. Park should be accessible to all.

B: Against entrance fee. It is impossible to check this and also, the area does not have fences around this so how could this even be monitored.

Q6.2. Would you be pro or con about making the entire park a car-free zone?

> Why do you think that is the best option? Do you think others will share your opinion (think of neighbours).

Both: Against. Now the park is easy accessible plus if people cannot come here by car they will probably just park in the towns close by (where they live) and this will only lead to problems there.

Q6.3. Do you think pricing the parking within the park would affect the parking situation in your town?

A: Against pricing parking in the park. This will shift the problem to where they live.

B: It will affect situation, people who regularly park in the park will then look for somewhere else to park causing parking stress at e.g. their hometown.

Interview 8 - St. Helenaheuvel, two women with dog

Part 1

Q1.1. In which town or city do you live?

A: Leusden-Zuid

B: Amersfoort

Q1.2. What is your year of birth?

A: 1942

The other woman was around the same age (estimated).

Q1.3. What brings you to the park generally? (*so not just today*)

A: The nice weather, the beautiful surroundings, just to be out and to have a drink and grab a bite at the terrace. We live near the forest ourselves but it is very nice to just be somewhere else at times and just to see another part of the forest.

Q1.4. How often do you visit the park?

A: Sometimes, I live near the park the "Treek", there I come more often but at times I also come here.

Q1.5. How did you travel to the park? With how many people did you travel?

The women came together by car.

Q1.6. How long did you travel? And how far (estimated value in km)?

A: 10-11 km

B: 15 km

Q1.7. Why did you choose this way of travel/means of transport?

A: Walking is too far. I have a dog which makes it difficult to go by bike, especially on a warm day like this one. My sister in law (B) however does come here at times with the bike. She is

really into the biking. So I come by car, especially for my dog and then we go to a place where we go walking for example in the forest. I do walk for two hours normally.

Part 2: Alternatives for current means of transport

Q2.1. Have you considered alternative ways of coming to Utrechtse Heuvelrug?

A: I used to bike when I was younger. Now I do not because otherwise I cannot bring the dog. And I am not that young anymore so then if I were to go by bike the dog could not come and then I would still have to walk him once I get back from cycling here. When I go to the forest near my house I do walk and do not use the car. I did used to go by train before Covid-19, now however I do not do that anymore.

Part 2b: Public Transport

Q2.3.1. Do you have access to (free) public transport?

Both women have a special discount for the use of public transport. However, before Covid, they had a different special abonnement which offered them to also travel for free. Now, sadly, they cannot use this anymore and only have a 40% discount left.

Q2.3.2 What are pro's and con's for you to use public transport? (mainly: what are the barriers)

A: Pro's to using public transport would be that it is easy when going to crowded cities. However, there are often delays.

The women mentioned that they use public transport to go (mainly) to cities because there it is crowded and there they have to pay for parking which makes the public transport a good alternative.

Q2.3.3. Do you think the park is easily accessible with public transport?

> *if not, if public transport was better connected, would you consider using it (more)?*

The women told us that they find it hard to figure out how exactly the public transport is interconnected and this leads to not using it more.

Part 2c: Car as a mean of transport

Q2.4.1. Do you have a car?

> *If yes, is it electric?*

A: Yes

B: No, I always travel by public transport

Q2.4.3. If you had to pay for parking in the park, would you still consider coming by car?

> *Currently the parking lots in the park are free. How much would you be willing to pay maximum for parking inside the Heuvelrug?*

A: Yes I would still come by car. But, it depends on how much it would cost. Tariffs such as in Amsterdam would be too much.

Part 3: Desired ways of mobility in Utrechtse Heuvelrug

Q3.1. Would a large number of visitors in the park affect your choice of mobility? (e.g. because of an overcrowding of visitors the parking spots might be full)

> *In rush hours, considering parking availability and traffic, what means of transport would you choose?*

A: Yes, I do not work anymore so when it is very crowded (weekend) I choose to walk closer to home. So then I do not come here. I will look in my surroundings for a less crowded place to go for a walk.

Q3.2. What other means of transport could you imagine within the park and to get to the park?

This question was not asked but, when they told me they would not come here anymore if the park would become a car free zone, I suggested there could be an electric pendle bus which could bring them into the park or some other alternative, and both ladies got really enthusiastic. They would make use of it.

Part 6: Future visions by residents and visitors

Q6.1. What is your vision on implementing an entrance fee for people who want to visit the park?

> *If agreed on the entrance fee, what is the maximum fee you would be willing to pay?
Should there be a difference in prices for visitors and residents*

A: I would say, either paying an entrance fee or letting people pay for parking. Not both. When you go to a museum they offer you something, there is an exhibition, you can buy a cart for the entire year, etc. But in a park (like this one), it would have negative effects for e.g. this restaurant because people would have to pay to enter the park.

B: No I would be con. An entrance fee would not be a good idea.

Q6.2. Would you be pro or con about making the entire park a car-free zone?

> *Why do you think that is the best option? Do you think others will share your opinion (think of neighbours).*

A: Against. Then you will only be able to come here by bike. I would not come here anymore if this would be the case. This would lead to a lot less visitors and have negative effects on the restaurant etc.

Interview 9 - Married pair on vacation

Part 1

Q1.1. In which town or city do you live?

Both: Rotterdam

Q1.2. What is your year of birth?

A: 1964

B: 1966

Q1.3. What brings you to the park generally? (*so not just today*)

A: Nice cycling routes and walking routes. Also, the nature in the area is beautiful.

B: The forest is beautiful, good pathways to cycle and came here for their holiday.

Q1.4. How often do you visit the park?

Both: Second visit so far.

Q1.5. How did you travel to the park? With how many people did you travel?

Travelled together by car (with their caravan).

Q1.6. How long did you travel? And how far (estimated value in km)?

Around 70 km, about an hour.

Q1.7. Why did you choose this way of travel/means of transport?

Distance. To bring the caravan with them this was the best way (flexible). They did not want to rent a caravan there because they have their own (costs).

Part 2: Alternatives for current means of transport

Q2.1. Have you considered alternative ways of coming to Utrechtse Heuvelrug?

If they were to live more in the area, they would have considered coming here by bike etc. However, due to the fact they live in Rotterdam and have to take their caravan to the camping, they have not considered any alternative means of transport.

We will now talk through a few possible ways of (alternative) transport: the bike, public transport and the car.

Part 2a: The bike as a form of mobility

Q2.2.1. Do you own a bike/electric bike? Did you consider coming by bike? (*why or why not?*)

Both own an electric bike and they really enjoy biking. So they brought their bikes with them.

Q2.2.2. What are pro's and con's for you to use the bike to come here?

A: It is too far to come here by bike.

B: Distance and not possible to bring along all necessities when coming by bike.

Q2.2.3. What would get you to come by bike? What would make it easier for you to go by bike or what would make it more interesting?

A: The park is already attractive enough to go cycling too and in.

B: The distance is a barrier. If they lived closer by they would come by bike for sure.

Q2.2.4. If there would be a point outside the park or in the park where you can rent bikes for free, would you consider using it? (*why or why not?*)

A: No, brought along their own bikes so leave those to others to use.

B: Yes, depending on whether these bikes are electric, they could leave their own bikes at home.

Part 2b: Public Transport

Q2.3.1. Do you have access to (free) public transport?

> *If yes, do you make use of this (at times)? (why or why not?)*

> *If not, do you still consider coming by public transport? (why or why not?)*

Neither has access to free public transport.

A: Makes use a lot of public transport to avoid parking costs in e.g. the cities but here in the area parking is free.

B: No, not feeling comfortable to travel by public transport, especially due to Corona.

Q2.3.2 What are pro's and con's for you to use public transport? (mainly: what are the barriers)

A: Barrier could be the crowdedness in the train (Covid-19)

B: The crowdedness and the delays. Hard to be on time.

Q2.3.3. Do you think the park is easily accessible with public transport?

> *if not, if public transport was better connected, would you consider using it (more)?*

They had not looked into it but saw many bus stops on their cycling trips so they think yes.

Q2.3.4. If public transport was cheaper, would you consider it?

> *If yes, how cheap should public transport be to choose it over travelling by car?*

They think they would use public transport more if it was cheaper. However, in order to choose the train over the car, the train should be a lot cheaper than it is today.

Part 2c: Car as a mean of transport

Q2.4.1. Do you have a car?

> *If yes, is it electric?*

They have one car, not electric.

(If they have a car)

Q2.4.2. Which of the following do you think is the most **important** negative effect the emission of cars have? The options are: they impose a serious risk to human health, they increase climate change or anticonsumerism.

A: Risk to human health. Humans will probably feel more likely to change their choice of mobility if it was to protect their own health.

B: Risk to human health. It is more important than nature.

Q2.4.3. If you had to pay for parking in the park, would you still consider coming by car?

> *Currently the parking lots in the park are free. How much would you be willing to pay maximum for parking inside the Heuvelrug?*

If they would not have to bring their caravan with them, they would consider other means of transport if they had to pay for parking in the area. It does depend though on how much they have to pay. Other means of transport cheaper than parking would lead to choosing another mean of transport.

Part 3: Desired ways of mobility in Utrechtse Heuvelrug

Q3.1. Would a large number of visitors in the park affect your choice of mobility? (e.g. because of an overcrowding of visitors the parking spots might be full)

> *In rush hours, considering parking availability and traffic, what means of transport would you choose?*

A: No, large number of visitors would not have an effect on coming by car or not. We always travel outside of rush hours.

B: If coming only for a day it would be better to choose an alternative mean of transport if there would be e.g. traffic jam. Then the train could be an alternative.

Q3.2. What other means of transport could you imagine within the park and to get to the park?

A: Within the park maybe electric steps or scooters for people who are not able to bike.

B: A recreation train (for free).

Q3.3. What are barriers that could hamper the implementation of this type of transport? (e.g. costs, who can and who cannot use it, at what time, etc.)

A: None, they should use the Felix companies as an example.

B: Maybe not everyone (people and nature) would be happy with a recreation train moving through the nature area.

Part 6: Future visions by residents and visitors

Q6.1. What is your vision on implementing an entrance fee for people who want to visit the park?

> If agreed on the entrance fee, what is the maximum fee you would be willing to pay?

Should there be a difference in prices for visitors and residents

Both are against an entrance fee, nature should be free and accessible for everyone who would want to go there.

Q6.2. Would you be pro or con about making the entire park a car-free zone?

> Why do you think that is the best option? Do you think others will share your opinion (think of neighbours).

Pro making the park a car free zone, less noise pollution.

Interview 10 - Doorn, woman with kid in the park

A: In which city or village do you live?

B: In Woudenberg

A: I'm not very known in this neighbourhood, is it close by?

B: About 10-15 min driving by car

A: In what year were you born?

B: 1972 (49 years old)

A: What brings you to the park?

B: My other daughter is at swimming lessons at the moment. So I have an hour time to kill, so I usually lunch here and then she (the daughter the woman is with) plays here a little bit.

A: How many times do you visit the park?

B: When the weather is nice, one time a week, when she's swimming.

A: With what type of transport did you visit the park?

B: Always with the car.

A: Do you always use this type of transport?

B: No, I'd rather not, but now because of the long distance I have to travel.

A: Do you have an electric car?

B: Not now with me, but we have one.

A: Have you considered to use a different type of transportation for this journey?

B: No, I have never considered it because it isn't feasible with school times and swimming lesson times.

A: Do you have an electrical bike?

B: Yes

A: What would stimulate you to use the electrical bike to go to the park?

B: It is not a means of stimulation, it is because of the tight time schedule...

A: What if there is a point in or outside of the park that you can rent a bike for free to ride to or through the park, would you use it?

B: Yes, then I wouldn't come directly here by car, but I would use the bike to come here.

A: Do you have a free OV subscription?

B: No

A: Do you use public transport? Or are the costs a barrier to use it?

B: I barely use it, but that's because I do not find it practical.

A: Why is it not practical?

B: It costs too much time for me.

A: Are you aware of the connections to the park with public transport?

B: Yes

A: Do you think the connections to the park are feasible?

B: Yes, it's fine.

A: It's purely the time problem for you?

B: Yes, (3:40 she said something here I couldn't understand) ... het ligt aan mezelf.

A: What do you find more important? That car emissions are a problem for human health or for the climate?

B: Health of people, because I think that we as individual could do something about that rather than the climate in its whole.

A: Maybe also because that could be a better incentive for people to not use the car?

(Probing? Lol)

B: Yes?

A: Would a big crowd of visitors influence your choice of transport? For example, for example overcrowding so there's barely any parking spaces or does that not bother you?

B: No it wouldn't bother me.

A: For example, during rush hour, if you would travel through rush hour would that influence your choice?

B: I can imagine that I'd grab the bike then.

A: But if it's not applicable you wouldn't.

B: Yes, precisely.

A: Could you imagine a type of transport for inside the park that everyone could use, e.g. an electrical step (?), something you would want to use?

B: Mountain bikes.

A: There;s a lot of good mountain bike paths, so I can imagine.

B: Yes, exactly.

A: What do you think of an entrance for visitors for the park? Purely for the recreation area.

B: No, don't do it, it should be meant for everyone, so freely accessible. If there would be an entrance fee, it would be a bigger threshold for people to visit.

A: Would you be pro or against the park being a fully car-free zone, thinking about safety, noise pollution, so there would still be parking spots outside of the park, but just inside the park itself.

B: Yeah, I would actually be a proponent to that. For the preservation of nature and the harmfulness of cars.

A: Do you think more people would share your opinion?

B: Yeah, I think so, especially in regards to safety.

Interview 11 - Nature near Doorn, man and women

A: In what village or city do you live?

B: Doorn

A: In what year are you born?

B: 1952 (69 years old)

A: Do you have a car? Is it electric?

B: Yes, no

A: What type of relationship do you have with the visitors? Does it bother you?

B: Not really, just the mountain bikers, the motor vehicles that ride around, and the racing cyclist. But what is bothering you know, in corona times they have to go somewhere, and

what do they do they go tot he forest. We see people in the forest that have never been here, and just 'do' something.

A: When you visit the park, what type of transportation do you use?

B: Walking

A: Why did you choose this type?

B: Because I live around the corner, it's my backyard.

A: So you see the park as a part of your neighborhood?

B: Yes

A: When you're at home does the noise pollution and parking problems bother you?

B: Yes, the noise bothers us. What you here at present in the weekend is not normal. It's very troubling for everyone that lives here. Every 5 min you hear noise. If the government does nothing we (the neighborhood) want to take action, and we'll try to prevent people coming here (gaan we de boel afzetten).

A: I see a lot of police around here.

B: Yes, but they are understaffed (not with enough people), nice guys but they're with the two of them, that is of no use.

A: Do the parking problems bother you?

B: No, lately a bit more busy, but it doesn't bother us.

A: What do you think of an entrance fee for people that want to visit the park?

B: No, I don't like that.

A: And if there would be difference for visitors and residents?

B: No you shouldn't make a difference. A park should not have an entrance fee, but parking should.

A: How much should be paid for parking? We want to stimulate people by making the parking pricy so they have to go by public transport. (We didn't ask if parking in the park would make more people park in their town)

B: I already usually go by bus to utrecht, because you cannot park there and it is expensive. I can imagine that if people want to go tot he forest and you have to pay a lot for parking that they would go by OV. However, if you go with multiple people, or with kids for example, the bus is still expensive so you would still grab the car.

A: Would you be pro or against making the park a car-free zone?

B: First of all , you're not even allowed to get here by car. The less cars the better, but you shouldn't close it off for cars fully.

Interview 12 - Nature near Driebergen, three women

A: Which city or village do you live in?

B: Driebergen

A: What year were you born?

B: 1986

A: Are you resident of this area:

B: Yes

A: When you visit the park what type of transport do you use?

B: Walking, we walk out of the street and we walk the national park in.

A: Do you see the park as part of your neighbourhood?

B: Yes, because I literally live on the edge. It belongs to your backyard almost.

A: Do you come here often?

B: Weekly.

A: What do you think about the visitors of the park? Does it bother you?

B: No, not really, it's quite quiet. You notice with the corona times that it was a bit busier. Cause people were bored and then in the weekend it was very busy. You are not bothered by eachother.

A: Do you come here in the weekend or weekly?

B: We go when we have time, depends on our working days.

A: Have you experienced negative external effects from visiting the park? For example, noise pollution.

B: No, actually not. Sometimes it's really busy with mountain bikers, but that's mostly on Saturday and Sunday.

A: When you are at home does it bother you then?

B: Sometimes, it can be busy in the street because people come here by car. So some nuisance in the street. Because of parking, by people that mountainbike or walk the dog. But it would be easier if there are different spots that people can park their car.

A: What is your vision on an entrance fee for people that want to visit the park?

B: No, I don't like that, 'absurd'. This piece of nature should be accessible to everyone. People who do not have a lot of money can spend a fun day here with their kids for example.

A: Would you be pro or against making the park a car-free zone?

B: I'm against, there are some people that live in the park, and the roads that are here there is not a lot of traffic, just the people that live here.

A: Do you think there should be a parking fee for parking in the park? And if so would that influence the parking in your neighbourhood and if so how? Cause now everything is free.

B: Would that mean paid parking in our street?

A: You can get a license if you live here. So you wouldn't have to pay.

B: It does not become that busy (so I think they mean it is not busy with parking at the moment, so I think they interpreted the question wrong)

Interview 13 - Nature between Austerlitz and Driebergen, women on a hurry

A: Do you live in the neighbourhood?

B: No

A: Where are you from?

B: Ede

A: In what year were you born?

B: 1975 (46 years old)

A: What brings you to the park today?

B: Because I have an appointment in Driebergen, and I wanted to walk for a little bit.

A: It's a beautiful nature area, do you come here more often?

B: Yes, no this is my first time!

A: How did you travel to the park?

B: I did come by car

A: Do you have an electrical car?

B: No...

A: Why did you choose this way of traveling?

B: Because biking was too far, I usually use the bike, except for if I need a car, then I use the car.

A: Have you considered another type of transportation, or did you just think the car was easiest for his trip?

B: Yes, for his trip the car was easiest.

A: Do you have an electrical bike or normal bike at home?

B: An electrical bike?

A: Even though you have an electrical bike you still wanted to choose the car because it's easier?

B: Yes, because of the time management.

A: What are for you pro's and con's of the use of a bike?

B: Pro's: you can get everywhere easily (Je kan overal tussendoor), in the city it's easiest and I like biking. Con: There's a limit to the distance you can travel by bike in combination with time.

A: And maybe also because of the hot weather today?

B: No, I wouldn't have found that a problem.

A: If there was a central point just outside of the park where you can rent a bike for free, would you consider that to bike through the park?

B: Yes, I think I would.

A: We're very curious about this, especially what the effect would be if it's free?

B: You have your own bike which is fine, and I have bad experiences with rental bikes.

A: Usually of less quality.

B: Then you're bummed from the bike trip, if you have to work harder than you thought you had to.

A: Do you have a free public transport subscription?

B: Yes.

A: Do you use this?

B: Not yet, but I'm going to study and then I'll definitely use it.

A: What are the pro's and con's of using public transport, for example get here?

B: There's free parking here, and with regards to the flexibility car is better. Because if you for example miss the bus I would have to wait 4 hours (?). Then I have something better to do.

A: Do you think the park is easily accessible with public transport.

B: No idea. Never visited it with public transport. I did see a bus here however.

A: What external effects do you find the most important of the effects of car emissions: climate change or public health. If you look at large scale CO2 emissions.

B: I think it's related of course. Eventually, the people are more important however, without climate there's no people and without people there's no climate. Equally important.

A: If you had to pay for parking in the park would you still come by car?

B: I would still come by car then.

A: Would it still depend on how expensive the costs are?

B: Yeah, that would.

A: If parking would be more costly than public transport, would that stimulate you enough to switch to public transport?

B: I think I would find a different spot to park then.

A: What other means of transport can you imagine for in the park or to travel to the park? For example, a shuttle bus, an electrical little bus.

B: Here in the park I think, I saw people with a step (dat je zelf zo'n loopband moest lopen?), that seems funny I think. But to come here, there's a bus, a train station and parking spaces what more do you have to add. In the park something alternative could be nice. Maybe get a type of gym in the park to make it more appealing for sporters?