EINDRAPPORTAGE EHUBS

Gemeente Nijmegen & gemeente Arnhem

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INDEX

MANAGEMENT SUMMARY

An eHUB is a collection point where you can rent, for example, electric shared cars, e-bikes, e-cargo bikes or e-scooters. By ensuring a sufficient amount of eHUBS, a transition can be initiated whereby people exchange their own car for shared mobility. The municipality of Arnhem and Nijmegen started the eHUBS project in 2020 to learn from and gain experience with the realization of eHUBS. We, Dijksterhuis & van Baaren (D&B), were involved to investigate the support for eHUBS among residents and to stimulate the use of eHUBS. This report is a collection of all the work we carried out for the eHUBS project in 2020-2022. This management summary describes the most important parts very briefly.

DIGIPANEL AND INTERVIEWS AROUND THE START - 2020

Before the eHUBS were launched in Arnhem and Nijmegen, we conducted research into the support among the residents. This showed that residents were positive about the project, and a reasonable proportion also wanted to try the eHUB. They especially wanted to try the e-bike and e-car, and they would use the means of transport for recreation and visits. Motives for using the eHUB were: speed, health and the environment. Reasons people wouldn't use the eHUB were: out of habit, high cost, or skepticism about availability.

INTERVENTIONS – 2021

We used the results of the first studies as input for interventions. We wanted to break habitual behavior and create more awareness. We renewed the decoration of the eHUB with a step-by-step plan for an information kiosk and ground communication, and developed a clear user video that was shared on social media. This was aimed at 1) making the interventions more noticeable, 2) making the use of eHUBS easier and 3) increasing the self-efficacy of potential users. The eHUBS with the renewed decoration were experienced as more striking and clear.

INTERVIEWS AFTER INTERVENTIONS – 2021

After placing (part of) the interventions, we again conducted interviews. This showed that residents were still positive about the eHUBS . We also learned that the added value of the eHUBS could be communicated even better.

EHUBS 2.0 – 2021

In 2021, fewer e-bikes were available due to theft and vandalism. A plan was therefore made for when the eHUBS could be fully used again, the relaunch of the

eHUBS. We advised to deploy interventions in three phases, namely: 1) clarifying the relevance of eHUBS, 2) breaking through habitual behavior and 3) stimulating lasting behavioral change by responding to the self-image of users.

INTERVENTIONS – 2022

In 2022 we developed interventions aimed at young professionals. The aim was to encourage use of the eHUB so that they do not have to buy their own car. With the interventions we wanted to connect the eHUB with the values of the target group, communicate a social norm and remove resistance. This was done with an online and offline campaign, and a trial campaign. The evaluation of the campaign shows that the design is good, but that people need practical information about the eHUBS. This insight can be used in the development of a subsequent intervention.

USAGE FIGURES – 2020 TO 2022

We monitored the usage figures of the means of transport on a monthly basis. Some of the insights we have gained from this are: 1) spring and summer are an attractive time to stimulate eHUB use, 2) the success of eHUBS partly depends on problems with the transport providers and 3) the success of an eHUB is partly depending on the location.

FINAL EVALUATION – 2022

We did a final evaluation at the eHUBS by conducting interviews. This showed that people have become more familiar with eHUBS, and are also more positive about it, compared to 2020 and 2021. The majority have the intention to use the eHUBS, although we do not see this reflected in the use. Another challenge is to narrow the gap between intention and behavior.

INTRODUCTION

In 2019 we, Dijksterhuis & van Baaren (D&B), will be involved in the eHUBS project. In the introduction we share how this project came about, why D&B is involved, and what work we have carried out.

CAUSE

Congestion, pollution and growing cities in North-West Europe are forcing us privé-auto'sto switch to shared mobility. By ensuring a sufficient amount of eHUBS and offering shared electric mobility, this transition can be initiated and the use of the car in cities will decrease. An eHUB is a collection point where you can rent shared cars, e-bikes, e-cargo bikes or e-scooters, for example. There can also be a charging station for electric cars if there is a demand for it. The offer of an eHUB is tailored to the needs in the neighbourhood.

Although eHUBS are technically possible, their implementation is hampered by slow user adaptation, spatial planning issues and policy. Scalability of eHUBS is important and knowledge transfer is necessary to remove obstacles for cities.

The Municipalities of Arnhem and Nijmegen were keen to take steps in this transition by participating in the Interreg programme. This program is part of a larger subsidy project from Interreg North-West Europe in collaboration with other European cities. In October 2018, a consortium of six European municipalities, educational institutions (including TU Delft and Amsterdam University of Applied Sciences) and two providers of electric bicycles (Urbee) and cargo bicycles (Cargoroo) applied for an Interreg subsidy for the realization of a total of 92 eHUBS in these cities. . The Municipality of Nijmegen is one of those six municipalities, with the Municipality of Arnhem as a sub-partner. The subsidy was awarded and the project kicked off in mid-April 2019. The duration of the project was until the end of 2021 ,, but was extended in the Arnhem-Nijmegen region until the end of 2022. An important goal of the project is to learn from and gain experience with the realization of eHUBS. In addition to the 92 eHUBS, the European project should also lead to a blueprint for realizing eHUBS, collaboration with other cities and an incentive program to inform and involve users. With the learning experiences from this pilot project, other cities can benefit by applying the blueprint and copying the good examples. Widespread use of the eHUBS will significantly reduce CO2

emissions in cities and create a growing market for commercial electric shared mobility providers.

In the period 2019-2022, the municipality of Nijmegen and Arnhem wanted to try out 13 eHUBS (10 in Nijmegen and 3 in Arnhem). The project is intended to learn whether and how we can roll out the eHUB concept in the Arnhem/Nijmegen region and to offer a handle to other interested municipalities.

WHY IS D&B INVOLVED?

The municipality of Arnhem and Nijmegen involved us in the eHUBS project to find out whether there is support in the neighborhoods, what this support means and to investigate whether support can be created when it comes to shared mobility and eHUBS. Subsequently, the municipalities wanted us to look zouden for a suitable location and a desired interpretation of the eHUB together with the neighbourhoods. They also wanted to investigate erd whether and how the use of the eHUBS could obe improved during the use phase. In addition, dthe municipalities want the use to be monitored and evaluated during the remaining term of the project until mid-2022 erd (the project is expressly also intended for learning). Het was de bedoeling om verschillende vragen te beantwoorden, zoals: wwhy do some eHUBs perform better than others? Can the eHUBS be improved to make it easier to use or to increase it? How can potential users best be reached? Which marketing works best to achieve the desired behavioral change? During this period k ondand the eHUBS are moved, physically adapted and further 'dressed up'. Targeted marketing campaigns sshould encourage and increase usage over the life of the project. D&B was the suitable candidate to give substance to this part of the project.

WHAT WORK HAS D&B PERFORMED?

In order to give substance to the above-mentioned part of the eHUBS project, we have carried out many different activities in the past 2.5 years. For example, we have conducted several studies, both online with digipanels and physically at eHUBS. The objectives of the studies were to :provide insight into support, to investigate how use can best be stimulated, and the performance of the eHUB S evalueren. In addition, we have developed and evaluated strategies and interventions based on these studies. We were also involved in project consultations to share behavioral insights and share the usage figures we collected.

IN THIS REPORT

The current report is a collection of the key insights we gained during the various work we performed during the eHUBS project. In the following chapters, we explain these activities, describe when we performed these activities, how we did it, and what insights this has provided.

SURVEY QUESTIONS DIGIPANELS - 2020

We started in January of 2020 with a general support survey in Arnhem and Nijmegen. The aim was to find out what the attitude of the residents of Arnhem and Nijmegen was towards the arrival of the eHUBS and to what extent they would make use of it.

THE INTERVIEWS

In order to get a good picture of the inhabitants of Arnhem and Nijmegen, it was decided to use digipanels via the municipalities. A digipanel is a group of people who more often fill in questionnaires from the municipality. With a digipanel a large group of people can be reached and a well-distributed picture of the inhabitants is created. We have distributed a questionnaire under the digipanel containing 5 questions:

1. How do you feel about installing an eHUB in your neighbourhood?
2. How likely do you think you will try the eHUB if it is installed in your neighbourhood?
3. What is the probability that others will use the eHUB in your area?
4. Which means of transport would you use with an eHUB?
5. For what purpose would you use the chosen mode of transport?

RESULTS

The questions were answered by 2760 residents of Arnhem (N=1605) and Nijmegen (N=1155).

ATTITUDE (QUESTION 1)

Residents in both Arnhem and Nijmegen were generally positive about the arrival of the eHUBS. In Arnhem 62% were positive to very positive if an eHUB were to be installed in their neighborhood and in Nijmegen this was 60%. There was also a large proportion who were neutral about the arrival of eHUBS (24% and 29%), respectively.

INTENTIONS (QUESTIONS 2 AND 3)

About 1/3rd of the residents of Arnhem (34%) and residents of Nijmegen (35%) considers the chance high or very high that they will use an eHUB in the future ·

They estimate the chance that others will do this to be slightly higher in Arnhem (39%). In Nijmegen they think that others do it just as often as themselves.

MEANS OF TRANSPORT (QUESTION 4)

The table below shows which part of the respondents would like to use a means of transport. These percentages show that the e-bike and e-car are the most popular. The e-step and speed pedelec are the least popular. There seem to be no major differences between Arnhem and Nijmegen. It is also interesting to note that the intentions in this question are higher than if we ask the intentions as in question 3. Apparently people are triggered when they see all the options of an eHUBS.

Type	Arnhem	Nijmegen
E-bike	42%	39%
E-car	37%	45%
E-cargo bike	15%	16%
speed pedelec	13%	12%
E scooter	21%	18%
E-step	12%	12%
No	*30%*	*28%*

Table 1. *Percentage of respondents who want to use means of transport.*

USE (QUESTION 5)

Below is indicated which part of the respondents would use the means of transport for which activity. It is striking that shopping is often mentioned as an activity in Arnhem, and never in Nijmegen. With the e-cargo bike, the expected activity is completely different. In Arnhem 71% would use it for groceries and 40% for recreation. In Nijmegen, 73% want to use the e-cargo bike for recreation, and groceries are not in the top 3.

E-bike
Arnhem: Recreation (65%), Shopping (51%), Visit (44%)Nijmegen: Recreation (58%), Visit (47%), Work (36%)

E-cargo bike
Arnhem: Shopping (71%), Recreation (40%), Visit (19%)
Nijmegen: Recreation (73%), Visit (38%), Work (20%)

Speedpedelec
Arnhem: Recreation (55%), Work (45%), Visit (40%)
Nijmegen: Recreation (55%), Visit (48%), Work (38%)

E-scooter
Arnhem: Recreation (61%), Visit (45%), Shopping (36%)
Nijmegen: Recreation (54%), Visit (53%), Work (40%)

E-step
Arnhem: Recreation (55%), Visit (35%), Shopping (32%)
Nijmegen: Recreation (47%), Visit (35%), Work (29%)

E-car
Arnhem: Visit (64%), Recreation (59%), Shopping (44%)
Nijmegen: Recreation (62%), Visit (57%), Work (45%)

SUMMARY

The digipanel has provided more insight into whether and how residents of Arnhem and Nijmegen would like to use an eHUB. The most important lessons from this are that the residents are positive about the arrival of eHUBS, and a reasonable proportion say they will start using it. E-bikes and e-cars are particularly popular here, and the favorite activities for shared transport are recreation and visits. The next step is to find out why people would or would not use an eHUB, so that we can respond to this in communication. We have investigated these underlying behavioral factors and are described in the next chapter.

LAUNCH INTERVIEW ROUND - 2020

In the previous chapter, we described how we used digipanels to investigate how residents feel about eHUBS. As a next step, we wanted to delve into the underlying reasons why people would or would not use an eHUB. That is why we took to the streets at the beginning of 2020 to discuss this project with residents of Arnhem and Nijmegen. With this we wanted to inform, enthuse and show residents that eHUBS is coming. Another aim was to find out what motives and resistances, if any, were to use the eHUBS. By collecting information about this, we knew which barriers residents had and were able to respond to this at launch. Below we discuss the structure of the interviews, the materials we brought with us and the results of the interviews.

THE INTERVIEWS

In weeks 9 and 10 of 2020, two behavioral psychologists visited each location where an eHUB would be set up in Arnhem and Nijmegen. At each location, residents were interviewed to find out what their transport needs were and how they felt about the eHUBS. This was done on the basis of semi-structured einterviews. For example, we gave residents the space to indicate what they found important, but there was also sufficient guidance to ensure that all themes were discussed. Conversations lasted 15 to 50 minutes.

MATERIALS

The interviewers had flyers met informatiewith them to inform passers-by who did not have time for an interview about the arrival of eHUB. In addition to information about the eHUBS, the flyer also contained a call-to-action. Interested parties could visit the website **ikwileenehub.nl** to indicate that they were interested in an eHUB

in their neighbourhood. This gave the municipality of Nijmegen and Arnhem insight into which areas were in high demand.

Figure 1. *Flyer about the arrival of eHUB with a call-to-action.*

In Arnhem there was also a coffee cart with a barista and diethe interviewers vergezelde to offer residents a free cup of coffee. This appeared to have a positive effect on the willingness of residents to participate in an interview.

Figure 2. *Coffee cart and interviews.*

RESULTS

A total of 168 interviews were held. Below we discuss the main results of these interviews.

INTENTION

Of the 168 people we spoke to, 72% were interested in using an eHUB. People generally reacted positively and enthusiastically to the arrival of eHUBS and wanted to know more about it. Analysis of the interview data showed that the intention to use an eHUB in the future is greater if someone:

- Previously used partial transport;
- Mainly used the bicycle for travel;
- is younger.

In addition to the general intention to use the eHUB, we studied the interest in different modes of transport as shown in graph 1. We distinguished between car users and bicycle users. A car user is someone who has indicated that they use a car for most trips. This is an interesting distinction as we mainly want to reach the

car user with the eHUBS. Replacing a car journey contributes the most to sustainable mobility.

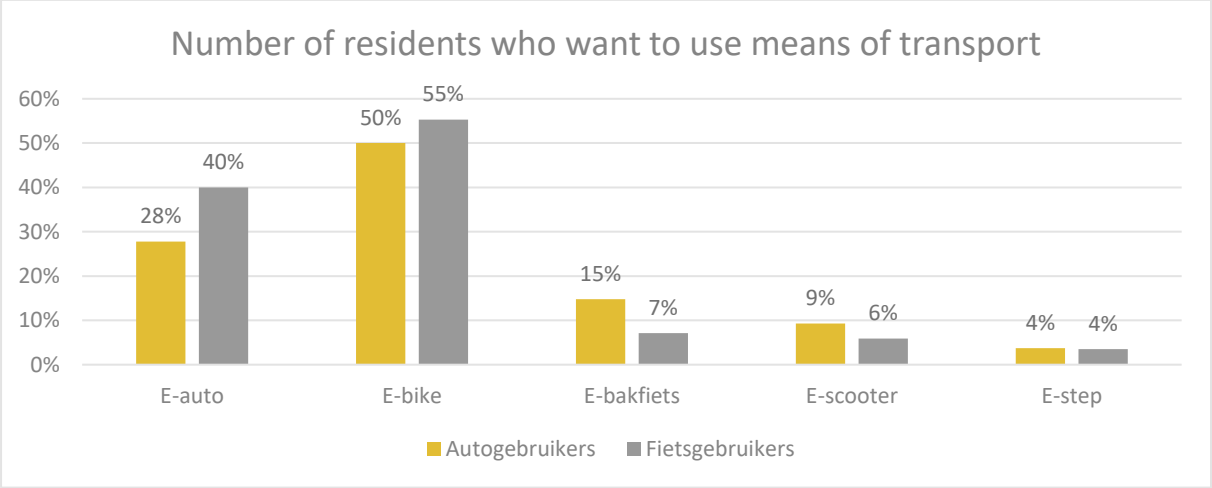
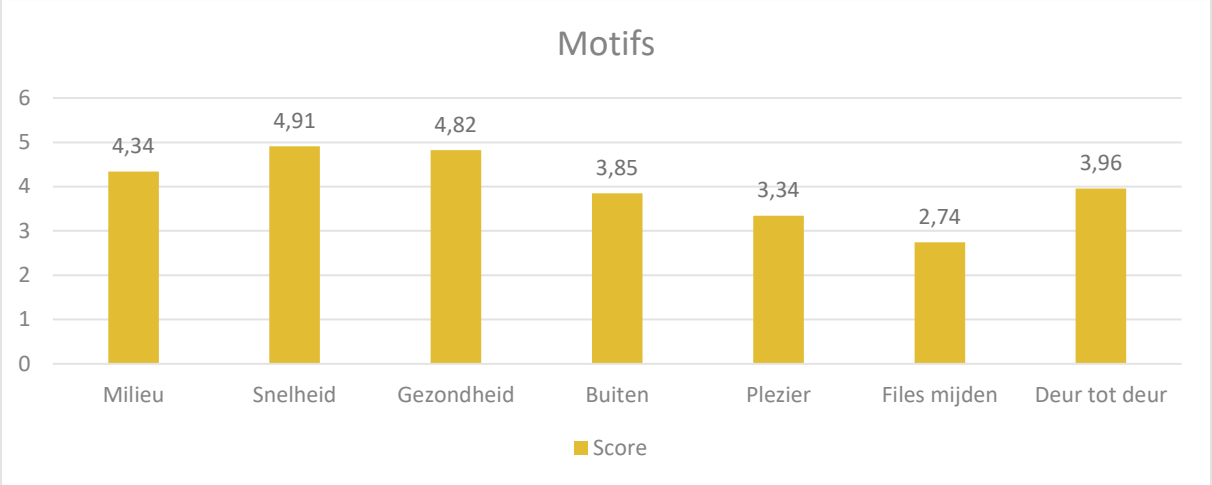


Chart 1. *Percentage of car and bicycle users iewho have an intention tovervoermiddel of an eHUB.*

As can be seen in graph 1, the e-bike and the e-car were the most popular. Interestingly, this is the case for both car users and bicycle users.

MOTIFS

We chose to present residents with different motives. Since each motive can feel important, we did not ask residents to score each motive, but asked them zevento rank motives. So they made a list from hetmost important motive to use an eHUB to least important motive. The most important motive got zevenpoints and the least important motive got points één. We then calculated deaverages to find out which motives are on average the most important for the residents of Arnhem and Nijmegen. The results of this can be seen in graph 2.



Graph 2. *Average score on each motif to use the eHUB.*

The three main motivations for respondents to use the eHUBS in the future were:

- Speed: with a means of transport from the eHUB they can get to their destination faster;
- Health: using the eHUB is good for health;
- Environment: electric vehicles are better for the environment.

RESISTORS

In addition to the main motives for using an eHUB, we were also curious about possible barriers. As with the motives, we also had the respondents rank 7 different resistances. We then averaged each resistance to find out what the main resistances were (see Chart 3).

> "Very clear transparent information is needed. With normal rental there is always a problem with extra costs per kilometer and so on. I want to be able to access it easily, quickly and clearly."

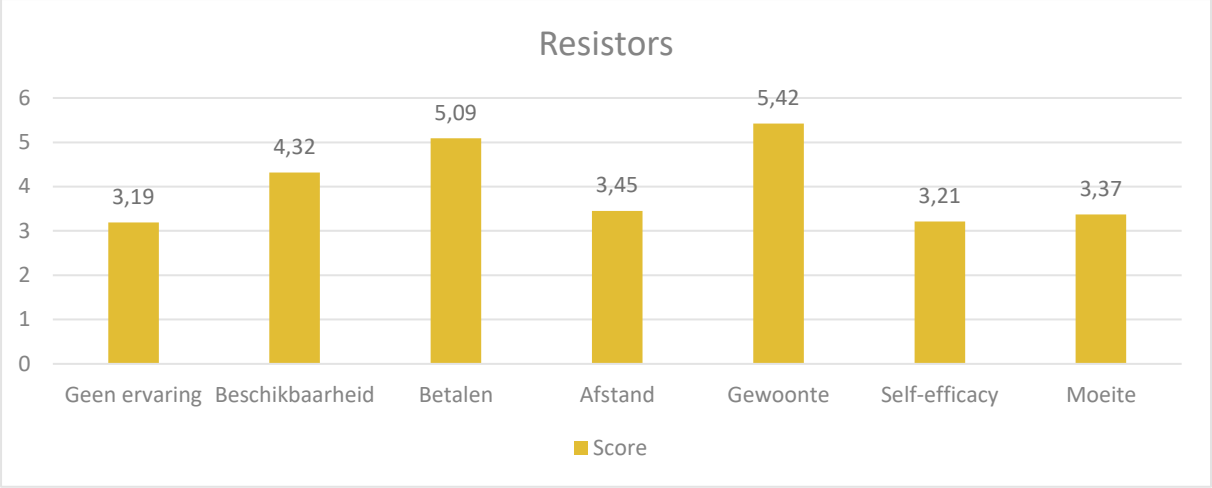


Chart 3 . *Average score on each resistance to use the eHUB.*

The three main resistances to using an eHUB were:

- Habit: people are used to traveling in a certain way, ;they don't think about the eHUB;
- Costs: it costs money to use means of transport from the eHUB;
- Availability: people want certainty about their journey ;they want to be sure that means of transport are available.

In addition to this ranking of resistances, the respondents indicated that they would like to walk to an eHUB for a maximum of 5 minutes.

> "If the eHUB has an e-car, it could ensure that I mijn auto sneller wegdoe. Then there must always be one available."

SUMMARY

The interviews showed that a large part of Nijmegen and Arnhem residents were enthusiastic about the introduction of eHUBS, but no fewer than 72% intended to use the eHUB. The e-bike and e-car were the most popular. Important motives for using the eHUB were speed, health and the environment. The main resistances were habit, cost and availability. The distance that people wanted to travel to use an eHUB was small: a maximum of 5 minutes.

The motives (such as sustainability) and resistances (such as high costs) provided insight into what actually drives people to use shared transport or not. We then used these insights in the launch of the eHUBS by showing to what extent it fits with important motives such as speed, health and the environment, but also by removing the main resistances to use.

INTERVENTIONS - 2021

One of the goals of the eHUBS project is to encourage use, in other words: behavioral change. For effective and long-lasting behavioral change, it is crucial to understand the target group. The main resistances and motives that influence the use of eHUBS have already been asked through interviews and surveys. The insights formed the basis for the intervention strategy, namely: removing the main resistances and reinforcing the motives. In this chapter the interventions are shown and substantiated.

DECORATING AND STEP-BY-STEP PLAN IN THE EHUBS

PSYCHOLOGICAL LANDSCAPE

Based on our previous studies (interviews, digipanels) and a literature search, we were able to develop a psychological landscape analysis. In this we name the factors that have a lot of influence on the target behavior (target group tries a shared car from the eHUB).

- **lack of knowledge.** A lot of people had never heard of eHUBS and didn't know how to use it.
- **Habitual behavior.** It was the custom for people to take other transport than the eHUB.

Based on these factors, we were able to set four goals for the interventions to have an effect on:

1. Increase knowledge about the eHUBS
2. Making it easier to use the eHUBS so that it becomes easier for people to change their habit
3. Increase salience of the eHUBS
4. Increase the self-efficacy of (potential) users to give them the feeling that they can use the eHUB.

INTERVENTION 1: DECORATING AND STEP-BY-STEP PLAN IN THE EHUBS

To increase knowledge about eHUBS, we wanted to make the eHUB more striking and share more knowledge. We also wanted to break through habitual behavior by simplifying the behavior and increasing self-efficacy. We did this by making a step-by-step plan on a column. The column makes it clear what you have to do if you want to use the eHUB. It was important to describe the steps as simply and concisely as possible, and to reduce the number of steps (but teremain complete). The column with the step-by-step plan is large and bright green and therefore stands out well. People therefore do not have to search long and immediately see that it is not that difficult to use the eHUB. As a result, people are more likely to use it. To make the eHUB even more striking and easier to find, the surface has been sprayed green and footsteps have been sprayed on the ground towards the eHUB. Finally, 'signing' was used. This is an indication of the height of the eHUB, for example on top of the column or on a lamppost.

Step-by-step plan in the column

1. Download the carrier's app
   scan de QR code with the camera on your phone.
2. Create an account in the app
3. Unlock your mode of transport with the app
   Enjoy your ride!
4. Put your means of transport back

Image 3. *The information kiosk at an intervention location.*

Afbeelding 4. *Aanduiding van de eHUB in de hoogte, ook wel metrosigning.*

Afbeelding 5. *Voetstapjes richting de eHUB.*

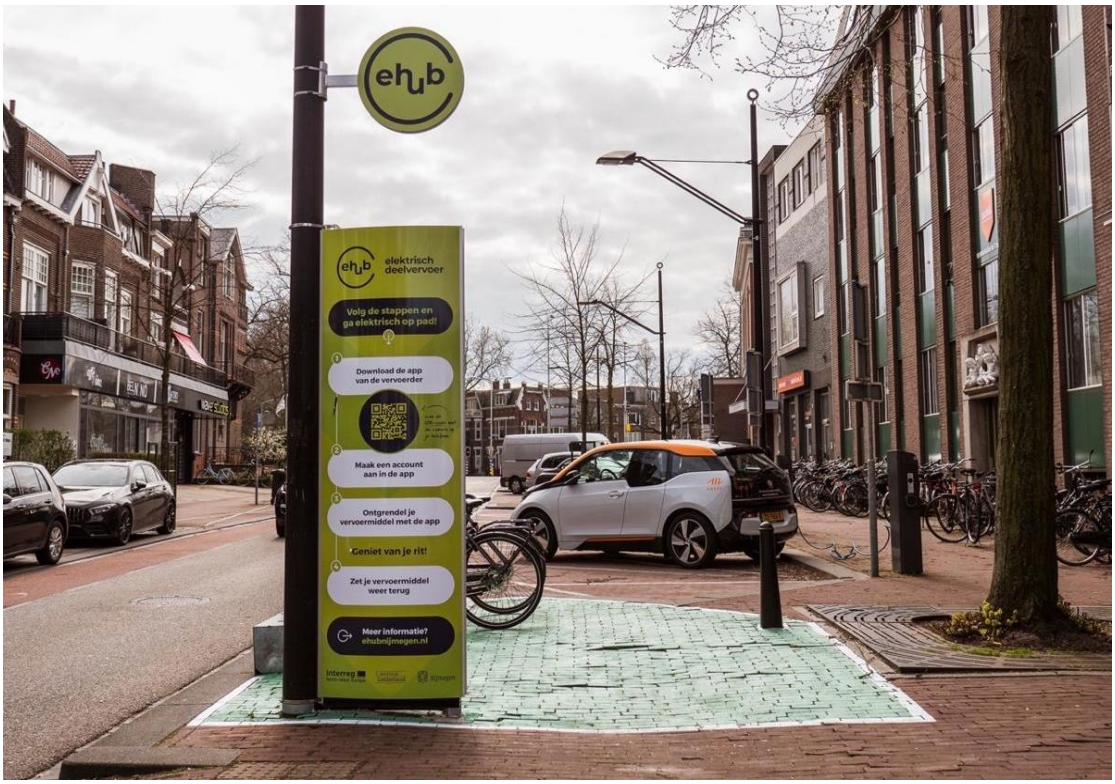


Figure 6. *The eHUB including interventions.*

INTERVENTION 2: USE VIDEO

In addition to improving the decoration of the eHUBS, an online intervention has also been developed. Namely a user video that clearly shows how you can use the

eHUBS. In the usage video you can see someone going through the steps necessary to use the eHUB. Because someone sets an example, the desired behavior is easier to copy. The number of steps has also been kept low in the user video and formulated concisely. This increases the perceived ease of the desired behavior. This intervention was developed together with advertising agency Byron.

Step-by-step plan for the usage video

1. Install the carrier's app at home and go through the registration
2. Go to an eHUB near you
   Don't have the app yet? Scan the QR code and open the website
3. Choose your means of transport
4. Unlock your mode of transport with the app
   Enjoy your ride!

Additional advice with a usage video

The following recommendations have not been implemented in the current intervention, but may be of added value in the future.

- Increase knowledge about eHUBS with a short introduction so viewers know where the closest eHUBS are, why they are there and what they can use the eHUBS for.
- Combine the usage video with a discount code for a first ride. The first ride has the most resistance. A discount code lowers the resistance to the price of the ride. Once the eHUB has been tried out (and liked it), there are already fewer resistances.

The usage video

The usage video can be seen via the following link: https://youtu.be/mvWML0rzd9o
.

EVALUATION

After the implementation of the interventions, a survey was carried out at the eHUBS to evaluate the results of the project. Part of the study was to measure the effect of the interventions mentioned above. We did this by conducting interviews at locations where we had not placed an intervention (control locations) and locations where we had improved the eHUB (intervention locations). See below this section for the distribution of the locations. We spoke to passers-by and asked them specific questions about the conspicuousness and clarity of the eHUB. We

then compared the response between the control sites and intervention sites. We used this to test whether the interventions contributed to the factors we wanted to respond to. The entire study design is described in the next chapter. An important remark is that during the evaluation no green areas and footsteps to the eHUB had yet been placed at the intervention locations. The effects of the intervention are expected to be stronger when these elements were also present.

Controlelocaties

- Hatert
- Arnhem CS
- Hengstdal

Interventielocaties

- Start-Up
- Radboud UMC
- Hertogplein

Afbeelding 7. *Een controlelocatie (links) en een interventielocatie (rechts).*

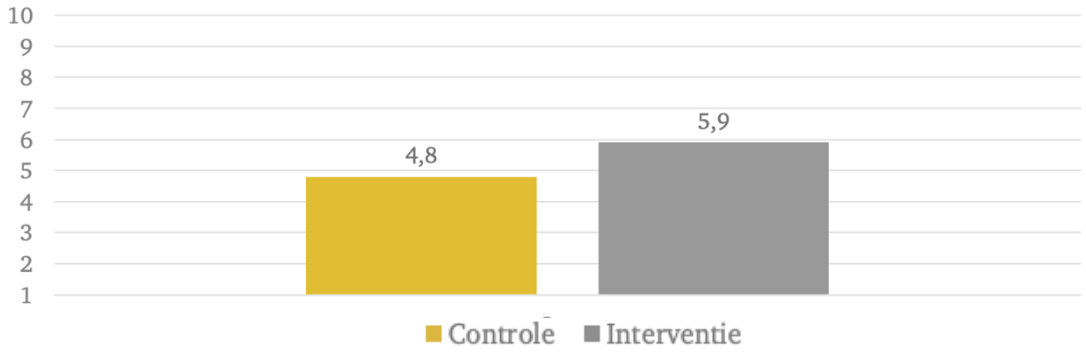
All intervention locations were experienced as more striking and clearer than the control locations, as can be seen in the table below.

Locatie	Conditie	Opvallendheid (1-10)	Duidelijkheid (1-5)
Hengstdal	Controle	5	2,91
Arnhem CS	Controle	4,56	3
Hatert	Controle	5	3,17
Start-Up	Interventie	5,54	3,21
Radboud UMC	Interventie	6,78	4,11
Hertogplein	Interventie	5,79	3,64

Table 2. *The conspicuousness and clarity of the control locations and intervention locations.*

CONSPICUITY OF EHUBS

The conspicuity scores higher at the intervention locations (5.9) than at the control locations (4.8). This difference is *not significant.*



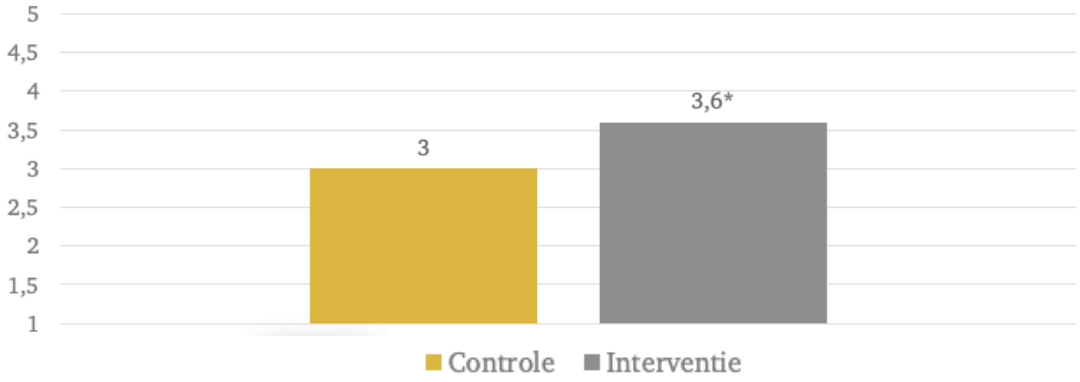
Graph 4. *The average conspicuity at the control locations and intervention locations.*

Interviewees thought the appearance of eHUBS was fine, but not so stimulating and therefore unobtrusive. This was especially true for control locations, but also for the intervention locations. It should be noted here that the green area on the ground of the eHUB has not yet been placed. Several interviewees mentioned that the eHUBS has a sleek, modern look. This is interpreted both positively and negatively. Green is named as a good color for the eHUBS **,** because it stands out and is associated with sustainability and nature. Finally came back a few times that the eHUBS was not so cared for or even unattended look. This referred to all bicycles and scooters parked (or on the ground) in the eHUB, which did not belong to the eHUB.

> “The appearance is a bit boring, could be more eye-catching”

CLARITY OF EHUBS

Clarity (about the use of the means of transport) scores higher at the intervention locations (3.6) than at the control locations (3). This difference is *significant* .



Graph 5. *The average clarity at the control locations and intervention locations.*

About the clarity of the new board people are mostly positive, although they sometimes think that this board contains too much information (especially for the spontaneous passer-by/user).

> “I would immediately know what to do”

It original plate **is more often experienced** as unclear In .particular door, that the information is somewhat succinct.

> “It is short-sighted and therefore not immediately clear that you can rent something there”

Interviewees are pleased with the QR code. Zand called its use convenient. However, it should be noted that this was especially true for the younger generation. Finally, downloading an app was described several times as ‘cumbersome ’and ‘hassle ’.

SUMMARY

A large part of the target group had never heard of eHUBS and they also used a different mode of transport than the eHUB out of habit. To stimulate the use of the

eHUBS, we have therefore developed interventions that respond to this. The aim of the interventions was to make the eHUBS more noticeable to increase attention and break habits. Another goal was to give people more knowledge on how to use the eHUB. The decoration of the eHUB has been improved :, a column has been placed with explanations and a user video has been developed. After the interventions were placed, an investigation was carried out at the eHUBS. Part of this study focused on the effects of the interventions. This showed that people generally found the eHUBS with the new decorations clearer and more striking. In the next chapter we discuss the next part of the research. In this we describe whether residents know and use the eHUBS, and what they think about it.

INTERVIEWS AFTER INTERVENTIONS - 2021

In the previous chapter, we described interventions, and we already shared their evaluation. This evaluation was part of a more extensive study. The next chapter describes this extensive research. The evaluation of the interventions is not considered further.

With the interview round in 2021 we wanted to gain insight into the yields of eHUBS until then. We did this by addressing passers-by at various eHUBS. We asked them specific questions about their knowledge, attitude and use of eHUBS. We had three goals:

1. Retrieve the extent to which residents are familiar with eHUBS.
2. Get what residents think of eHUBS.
3. Retrieve the extent to which residents use eHUBS, and provide insight into their resistances and motivations.

THE INTERVIEWS

In January 2021 we conducted 68 interviews at various eHUBS in Arnhem and Nijmegen. Here, questions were asked to passers-by about the knowledge, attitude and use of eHUBS. We conducted the interviews at three control locations (without intervention), and at three intervention locations (with intervention). The results are described below

Control locations

- hatert
- Arnhem Central Station
- stallion valley

Intervention Locations

- Start-Up
- Radboud UMC
- Duke's Square

FAME

Most of the interviewees (66%) were unfamiliar with eHUBS. Several explanations have been found for this, namely:

- Some of the interviewees did not come from the vicinity of Arnhem or Nijmegen.
- Several interviewees indicated that they had not seen any advertisements for eHUB

- Other interviewees regularly visited the eHUB(S), but did not pay any attention to it. In other words, the eHUB was not striking enough.

> “I get a lot of local news, but I don't know the eHUBS. There should be more PR”

For the people who did know the eHUBS, it was largely because they had passed by the eHUB. Other reasons such as via social media or via the news were hardly mentioned.

ATTITUDE

The vast majority had a positive attitude towards eHUBS, followed by people with a neutral and then very positive attitude. The attitude scored an average of 3.74 (on a scale of 1-5).

Furthermore, most of the interviewees were positive about the municipality being involved in this project. They thought it suited the 'green character' of Nijmegen and linked this to keywords such as: less emissions, more exercise, the sustainable idea. They also found that it can contribute to reducing the amount of car traffic and parking problems in the city. However, some interviewees were skeptical about the actual use of eHUBS, as the quote below well describes.

> “I think it's a good initiative, but I'm curious if it is actually used. I hope that has been properly researched.”

USING EHUBS

None of the interviewees had used the eHUB before. Most said they didn't need it. They had enough of their own means of transport. Other reasons mentioned were: unfamiliarity, too little time, too great a distance to eHUBS, wanting but not getting around to it, uncertainty about travel time or too high a price. Most of the interviewees therefore indicated that they did not want to use the eHUBS. Possible reasons for people to use the eHUBS were:

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The interviews showed that the awareness of eHUBS is low. The vast majority of people are unfamiliar with eHUBS, followed by those who have heard of it, but don't know what the concept is all about. There is therefore still room for improvement in increasing awareness through more and more active communication. However, most people are positive about electric shared transport and the eHUBS project. This does not mean that people will also use it. It turned out that people still lacked the added value. The eHUBS must therefore become even more relevant for the target group.

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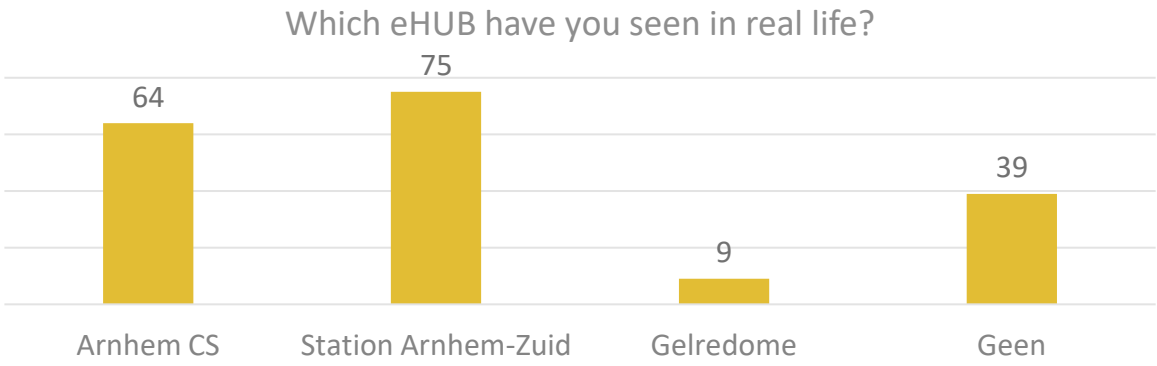
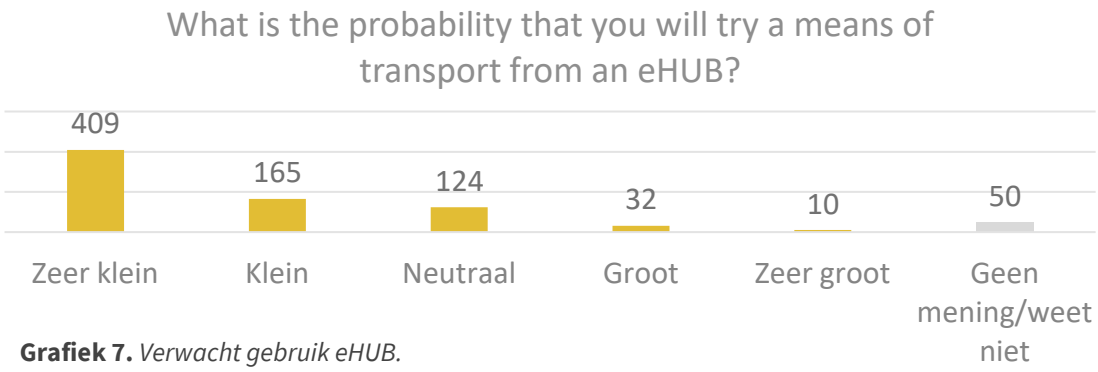


Graph 6. *Awareness of different eHUBS in Arnhem.*

There were also a number of questions for people who are familiar with the eHUB, but who have not used it. The main findings of this are:

- The respondents were positive about the pilot with eHUBS in Arnhem.
- For a fair part, figuring out how to use an eHUB seemed like a hassle.
- Few respondents indicated that they need a means of transport from an eHUB.

- Most respondents estimate that they will not try an eHUB, as shown in the graph below.



Grafiek 7. *Verwacht gebruik eHUB.*

EXPERIENCES

In Arnhem there were few people who had ever used a means of transport from the eHUB. Only the Urbee e-bike was mentioned. Their experiences are discussed below.

Experience Urbee

5 respondents from Arnhem used the Urbee. The key findings based on their responses are:

- The quality of the bike was not good.
- The instructions to use the e-bike were fairly clear.
- The e-bike was mainly used for recreational rides.

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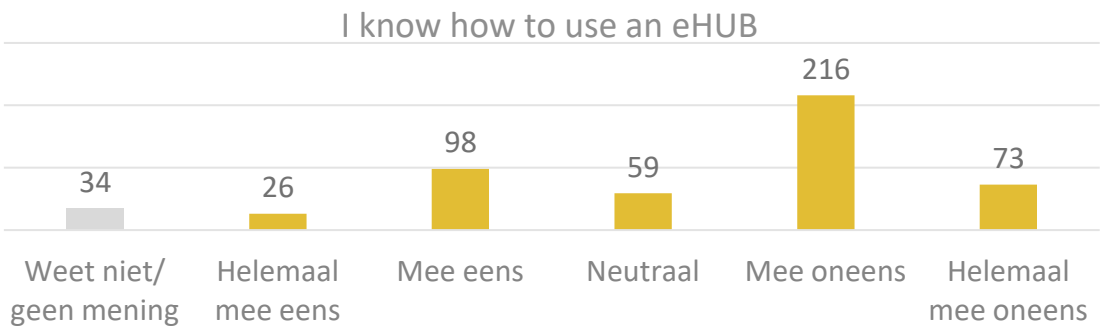
The eHUBS were better known in Nijmegen than in Arnhem. More than half (55%) had heard of eHUBS. Here too the majority knew the eHUB because they saw an eHUB. The eHUB at Handelskade is best known. Opinions on the conspicuousness and clarity of the eHUB are divided among the respondents. Most of the respondents do not know how to use an eHUB.



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The main findings from the questions for people who know but have not used the eHUB are:

- Most respondents are positive about the pilot with eHUBS in Nijmegen.
- Few respondents know how to use an eHUB.
- The majority of the respondents say they do not need an eHUB means of transport.
- Most respondents estimate that they will not try an eHUB.

EXPERIENCES

In Nijmegen more use was made of the means of transport than in Arnhem. Urbee's e-bike has been the most used, followed by Amber's e-car, and a number of people have also used Cargoroo's e-cargo bike.

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26 respondents from Nijmegen used the Urbee e-bike. The most interesting experiences are described below:

- The average age of e-bike users was 50 years. This is about 12 years higher than for other modes of transport.
- A large part of the respondents was not satisfied with the quality of the e-bike.
- A reasonable number of people thought the rental price of an e-bike was high.
- The majority of the respondents want to use the e-bike more often.

Experience Cargoroo

8 respondents have used an e-cargo bike from Cargoroo. The most interesting experiences are described below.

- The quality of the e-cargo bike was experienced as good.

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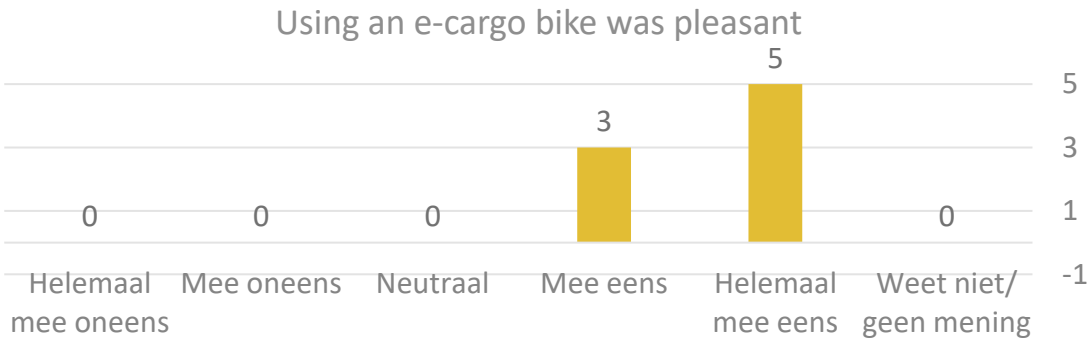
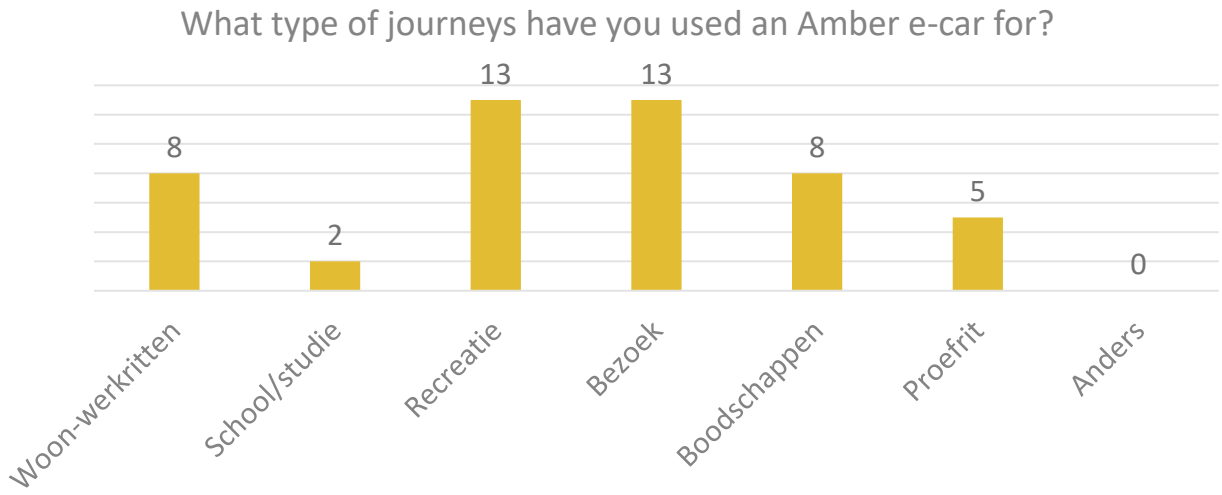


Grafiek 9. *Ervaring met Cargoroo.*

Experience Amber

21 respondents have used an Amber e-car. The most interesting experiences are described below.

- Most of the respondents found renting the e-car easy.
- The quality of the e-car was experienced as very good.
- The Amber was mainly used for recreation and visits.



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SUMMARY

eHUBS is better known in Nijmegen than in Arnhem. There are also more people from Nijmegen who have used an eHUB. People often know the eHUB because they have seen an eHUB. This may explain the differences in familiarity: there are fewer eHUBS in Arnhem, so they are less likely to see an eHUB. It is also noticeable that people are positive about the project, but in general have no intention to use the eHUB. The reasons for this are that people do not need a means of transport from the eHUB and they do not know how to use the eHUB. In Arnhem it seems like a lot of work for people to find out how the eHUB works. So there seems to be some gain in this: informing people how they can use the eHUB, and showing that it is easy. Finally, there are many positive experiences with Cargoroo's e-cargo bike and Amber's e-car. The quality of the Urbee e-bike was perceived as less good.

EHUBS 2.0 - 2021

In May 2021, the use of eHUBS declined sharply. At the same time, there were delivery problems from Cargoroo, and most eHUBS did not have a cargo bike. In addition, Urbee e-bikes were stolen or broken due to vandalism. As a result, they withdrew from the project. The aim was to get started with new shared bicycle providers, but e-bikes could not be delivered immediately. There were therefore temporarily no electric bicycles in the eHUBS. People lost confidence in the availability of means of transport at the eHUBS. Part of our role was to encourage the use of means of transport, but as there were almost no means of transport at this stage ,, an incentive was not appropriate. We therefore developed a plan to relaunch eHUBS when modes of transport become available again: eHUBS 2.0. With new interventions, we wanted to relaunch eHUBS and regain the trust of potential users. However, delivery issues persisted, with eHUBS 2.0 finally being implemented in May 2022.

THREE PROMISING PHASES

We knew from our previous research at the eHUBS what was going on with our target group regarding whether or not to use an eHUB. Based on this, we saw three promising phases that we can go through for a successful relaunch of eHUBS:

1. Make relevant
2. Breaking a habit
3. Responding to self-image

We explain per phase what it entails, what needs to be done, and what is a good example.

PHASE 1: MAKING RELEVANT

With this phase we want to let residents know that eHUBS is relevant to them. We do this by improving awareness, increasing perceived usefulness and removing skepticism. For example, we can show all the possibilities of a Cargoroo to increase its utility, share price comparisons to remove skepticism about costs, communicate a social norm or collaborate with local platforms such as Indebuurt Nijmegen and Arnhem to increase awareness.

Figure 8. *Example of using Cargoroo.*

PHASE 2: BREAKING HABIT

After we have introduced people to eHUBS in the first phase and they see the relevance of eHUBS, in the second phase we want to help people break their habitual behavior. This can be done by responding to (life) events, with an environment-oriented approach or by facilitating change. For example, change can be facilitated with a buddy day: a day on which people are ready to help you use the eHUB by explaining how the eHUB works, how you can install the app and how to turn on an e-bike. An environment-oriented approach can, for example, be done with signs on the edge of ofjust outside the city enin parking garages. Here it is possible to encourage the use of an e-bike for distances that are just too far for cycling on a city bike. At these moments you are reminded of the possibilities of the eHUB at moments that are relevant: as soon as you travel or have just traveled.

Figure 9. *Example of intervention that responds to relevance.*

PHASE 3: RESPONDING TO SELF-IMAGE

The first two phases encourage people to use the eHUB once. If interventions have been set up for these phases, phase 3 can focus on realizing lasting behavioral change. The aim here is to ensure that people continue to use the eHUB. We can achieve this by responding to the self-image of (potential) users. For example, by activating values or placing users in the desired role: " *Are you more climate-conscious? …% of Nijmegen residents are engaged in sustainable travel. You too? Choose eHUB* ". This works ,because people want to act consistently on their values. If they feel good about their behavior, they want to maintain that behavior. This creates a higher chance of long-term behavior.

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Because there were no means of transport at the eHUBS for a while, the confidence in the availability of potential users was damaged. We therefore wanted an eHUBS relaunch as soon as means of transport were available again. In addition, we advised to deploy interventions in three phases. Firstly, the relevance of eHUBS must be made clear again. .Secondly, habitual behavior must be broken and finally, lasting behavioral change must be stimulated by responding to the self-image of users.

INTERVIEWS AFTER INTERVENTIONS - 2021

In the previous chapter, we described interventions, and we already shared their evaluation. This evaluation was part of a more extensive study. The next chapter describes this extensive research. The evaluation of the interventions is not considered further.

With the interview round in 2021 we wanted to gain insight into the yields of eHUBS until then. We did this by addressing passers-by at various eHUBS. We asked them specific questions about their knowledge, attitude and use of eHUBS. We had three goals:

1. Retrieve the extent to which residents are familiar with eHUBS.
2. Get what residents think of eHUBS.
3. Retrieve the extent to which residents use eHUBS, and provide insight into their resistances and motivations.

THE INTERVIEWS

In January 2021 we conducted 68 interviews at various eHUBS in Arnhem and Nijmegen. Here, questions were asked to passers-by about the knowledge, attitude and use of eHUBS. We conducted the interviews at three control locations (without intervention), and at three intervention locations (with intervention). The results are described below

Control locations

- hatert
- Arnhem Central Station
- stallion valley

Intervention Locations

- Start-Up
- Radboud UMC
- Duke's Square

FAME

Most of the interviewees (66%) were unfamiliar with eHUBS. Several explanations have been found for this, namely:

- Some of the interviewees did not come from the vicinity of Arnhem or Nijmegen.
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- Other interviewees regularly visited the eHUB(S), but did not pay any attention to it. In other words, the eHUB was not striking enough.

> “I get a lot of local news, but I don't know the eHUBS. There should be more PR”

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The vast majority had a positive attitude towards eHUBS, followed by people with a neutral and then very positive attitude. The attitude scored an average of 3.74 (on a scale of 1-5).

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USING EHUBS

None of the interviewees had used the eHUB before. Most said they didn't need it. They had enough of their own means of transport. Other reasons mentioned were: unfamiliarity, too little time, too great a distance to eHUBS, wanting but not getting around to it, uncertainty about travel time or too high a price. Most of the interviewees therefore indicated that they did not want to use the eHUBS. Possible reasons for people to use the eHUBS were:

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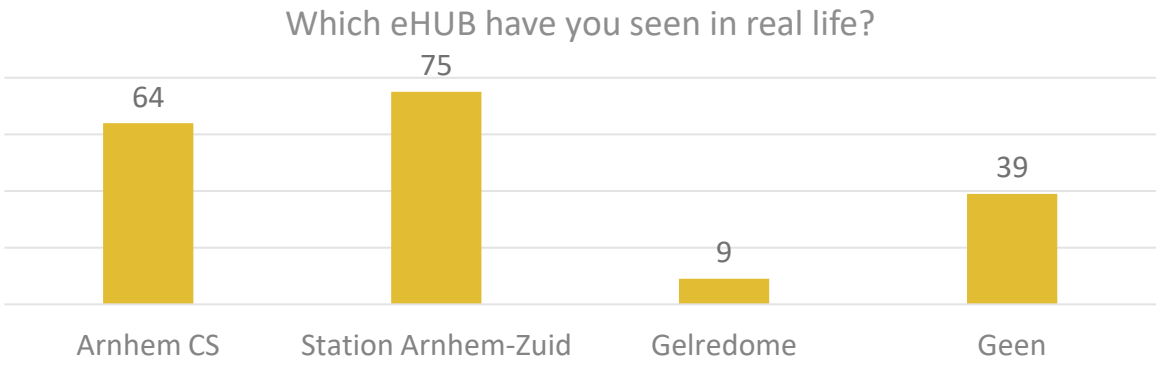

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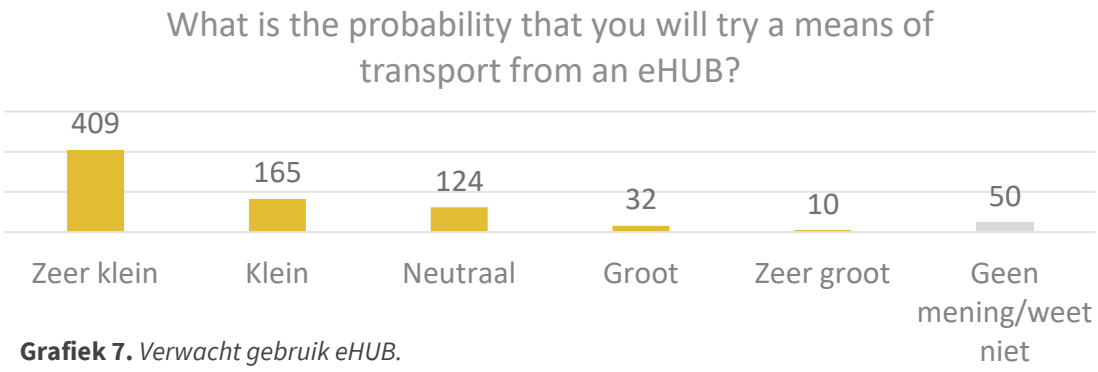

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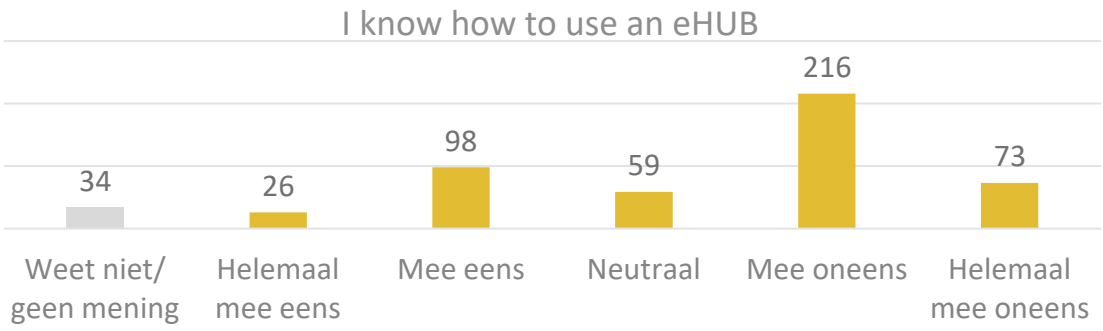

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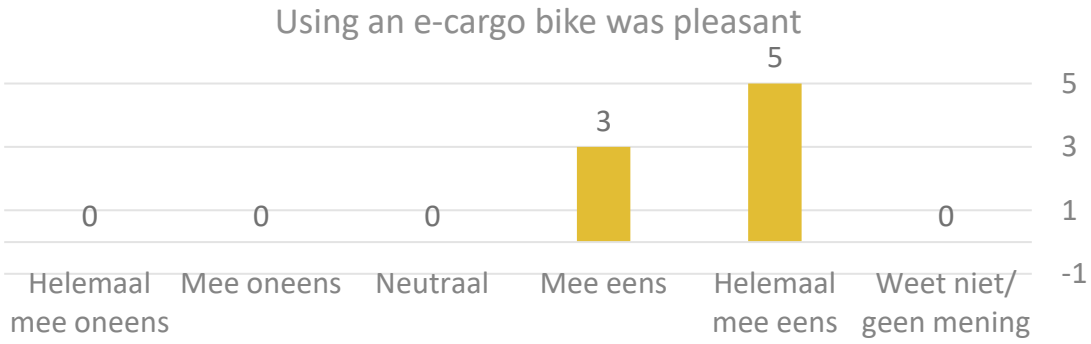

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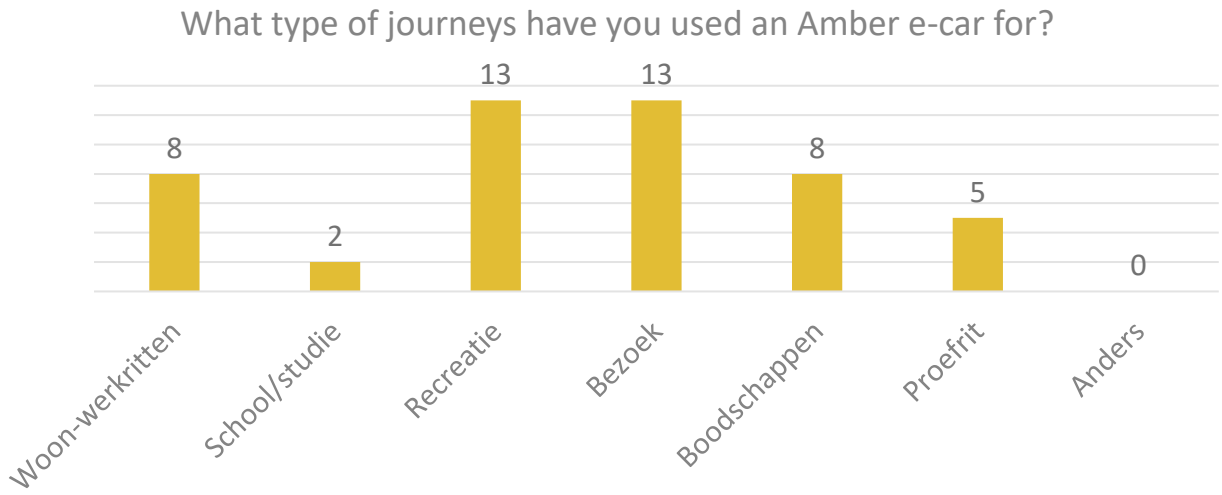

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INTERVENTIONS - 2022

At the end of 2021, it was decided to extend the eHUBS project by six months. Part of the extension was to develop new interventions that stimulate eHUB use and reduce car ownership. This chapter describes how we approached this, which interventions we ultimately implemented and how they were evaluated.

REDUCE CAR OWNERSHIP

The initial idea for this intervention round was to develop interventions for the target group 'two-car owners'. However, this seems to be a target group with a low willingness to change. Before they are open to the desired behavior (using a shared car), they must first sell their own car. That is a high threshold that requires a long behavioral change process. In order to achieve faster results, a different target group was chosen that is probably more open to the target behaviour: young professionals between 25 and 35 years old. Young people are more willing to try electric shared transport. In addition, many cars are purchased by this target group in this phase of life. It therefore seems to be a promising target group. The long-term goal is for the target group to use the shared car instead of buying a car. The target behavior has been chosen for the short-term interventions: 'the target group is trying out the eHUBS shared car. This is a concrete target behavior that can be realized within the project duration. This target behavior also contributes to the long-term goal: trying an electric shared car is a precondition for continuing to use the shared car. We have developed interventions in collaboration with advertising agency Byron. We first mapped out the psychological landscape and developed the behavioral strategy based on that. Byron then turned this into creative interventions.

PSYCHOLOGICAL LANDSCAPE

Based on our previous studies (interviews, digipanels) and a literature search, we were able to develop a psychological landscape analysis. Below we list the factors from this psychological landscape that have a lot of influence on target behavior (target group tries a shared car from the eHUB).

- **Skepticism.** There is doubt about the functioning of an eHUB shared car. For example, the target group has the following questions: is the car always available? Do you need a subscription? Where can you return the shared car? How much does a ride cost?
- **values.** Independence, freedom and flexibility are important values for this target group. These values are in line with the values of a shared car.

- **social norm.** People tend to determine how they should behave based on social norms. If my friends don't do it, why me?
- **Previous experience.** People who have used an eHUB before are more likely to use it again.

The interventions aim to influence factors from the psychological landscape. The interventions are described below.

INTERVENTION 1: CAMPAIGN

We want to convince young professionals that an eHUB car sharing helps them to achieve their goals: being independent, free and flexible. The trick is to remind the target audience of this at times when they are already working on these values. For example, during the holidays, around festivities, after graduation or when obtaining a driver's license. The latter, for example, gives a feeling of freedom because you can travel to more places. Also during travel is a good time, for example in bus shelters or along the road. The campaign focuses on experiencing the value of 'freedom' with a shared car and communicating a positive social norm. The campaign was posted on Instagram, Facebook and at various bus shelter locations in Nijmegen (and later possibly also in Arnhem).

Advice on campaign material

- Clearly show a value with the communication material that is in line with the target group. For this target group these are, for example, the values of freedom, flexibility and independence.
- Deploy the campaign in locations where many people from the target group visit.
- A first positive experience in the shared car is an important basis herhaald gebruikfor stimulating the shared car. In the long run, the goal is for people to continue using the eHUB, rather than buying their own car. This intervention is aimed at trying out the shared car. Continued use may require additional interventions.

INTERVENTION 2: TRY ACTION

We not only wanted to stimulate the use of the shared car by means of a campaign, but also to carry out an active intervention in which people actually experience the shared car. To achieve this, a trial campaign has been set up. People can register via the website and have a chance to win 1 of the 50 test drives worth 50 euros. Winners are requested to record and share a piece of content on their own social media in return. This action also communicates a social norm. The trial campaign has been set up through various channels: social media (from eHUBs and the Municipality of Nijmegen), the eHUBS website and newsletter and a local neighborhood newspaper. The trial campaign was also promoted online via (paid) sponsored social posts.

Afbeelding 10. *Abri-campagne voor de deelauto.*

Afbeelding 11. *Probeeractie voor de deelauto op social media (Instagram).*

Advice on a try action

- Doesn't social media have a large reach? Then use sponsored social posts to still reach the target group.
- Advertise with channels that are read by your target audience, such as Instagram.
- Make the trial an opportunity to promote social media. For example, have participants follow or share the social media as a condition to participate in the promotion. This makes it easier for you to reach your target audience over the long term. This is not done in the current setup.
- Add elements from the behavioral strategy of intervention 1 (campaign) to the promotion of the trial, such as the values :of freedom, flexibility or independent communication. This is not done in the current setup.

EVALUATION

After setting out the interventions, we conducted a final evaluation at the eHUBS. In the final evaluation we also included a part to evaluate the campaign intervention. We did this by showing interviewees the bus shelter developed by D&B and Byron (which was aimed at the shared car). Then we asked some questions about this. For more information about the set-up hierof, see the next chapter: Final evaluation eHUBS – 2022. At the time of writing, registrations are still being collected for the trial campaign. Therefore, no evaluation is included.

EVALUATION CAMPAIGN

General evaluation

In general, the interviewees reacted positively to the design of the shelter. The design was alspositively experienced, among other things because of the green color and the appropriate photo. The message was also short, powerful and clear. A number of interviewees would have liked more information on the bus shelter. They are especially curious about how the eHUB works: how much does it cost, can you reserve a car, do you need a subscription? The behavioral strategy already showed that these questions are relevant to the target group. Ultimately, we did not focus on this for the campaign, because people first have to find the shared car interesting before they want to know how it works. Responding to the value of freedom contributes to making it interesting. The next step is to remove doubts about the practicalities of the shared car.

> “Clearly, but I don't see a price. And I miss what the added value is compared to other landlords. Can you rent it for half a day, for example?”

Freedom

We were also curious whether the bus shelter would evoke the value of 'freedom' among the target group of 'young professionals between 18 and 35 years old'. This is an important value for this target group, which is why we tried to communicate in the campaign. We investigated this by asking the interviewees to what extent they thought the shelter exudes the value of freedom. During the interviews, however, we noticed that interviewees found it difficult to answer this question. We noticed that people - on the spot - were not so quick to formulate an answer about what value the shelter should illustrate or what the shelter evoked in them:

> “I've never seen this poster, don't really have an opinion on it but I like the overall concept”

And when people went deeper into what the shelter evoked in them, it was often about the design or the images of the shelter:

> “An open tailgate looks inviting”

However, we know that communication expressions can often unconsciously evoke certain values in people and that it is difficult for people to articulate unconscious associations in a conversation. So what people say during a conversation does not have to match what the bus shelter evokes in them

unconsciously. As a result, interviews or questionnaires can give a distorted picture. There were a number of interviewees who were able to articulate why the bus shelter evoked the value of freedom in them:

> “Freedom is clear, because it says: 'out and out'. And they pack suitcases and go somewhere. That gives a feeling of freedom.”

Yet the value of freedom is not yet as clear to the target group as we would like. We had already expected this in the feedback on the campaign concept and advised how freedom can be communicated more strongly. We recommend that you do this in the future. For example, by adding several concrete activities to 'out and about', such as:

- “Out and about! Which city are you driving to? Try now:"
- “Out and about! Easy to the beach? Try now:"
- “Out and about! Always nearby and quickly on the road. Try now"

Descriptive standard

Another goal of the campaign was to communicate a positive descriptive standard. The descriptive norm is what people think other people do. So with the bus shelter campaign we wanted to show people that other people use shared transport. We did this by using the phrase ' *more and more people are using electric shared transport* '. We cannot scientifically substantiate with interviews whether this addition has indeed led to a higher descriptive standard. We did, however, ask for the descriptive standard of the electric shared car and compared it with how much the electric shared car is actually used. With this we tried to gain insight into the social norm that prevails among people (after seeing the campaign). The answers of the target group varied between 1% and 60%. The correct answer is 5%, but the vast majority of the target group estimated the social norm to be (much) higher. It is impossible to say what contribution the shelter made to this, but it is in any case clear that (after seeing the shelter) there is a stronger positive descriptive norm among the interviewees.

SUMMARY

In 2022, interventions were developed with the aim of stimulating eHUB use and decreasing car ownership. A concrete and achievable target behavior was: young professionals between 25 and 35 years old try out the eHUB shared car. To change their behaviour, two interventions have been developed: 1) a campaign that communicates the descriptive norm and links the value of 'freedom' to the shared

car, and 2) a trial campaign in which people have a chance of a test drive in return for a piece of content on social media. media. An evaluation of the campaign was done by interviewing people. This showed that interviewees were positive about the design of the bus shelter and made a high estimate of the descriptive standard. The evaluation also shows that people still need practical information about the shared car, such as the price and reservation options. It also appears that the word 'out there' and the picture of loading suitcases evoke a sense of freedom tin some people, but not everyone. So this could be communicated even more strongly.

BEHAVIORAL PRESENTATION - 2022

In March 2022, the European consortium met in Nijmegen to learn more about the eHUBS in Nijmegen, Arnhem and the Netherlands. The consortium also did a bike tour along the eHUBS and short presentations were given. We gave a presentation at eHUB Hertogplein containing our lessons of behavioral change. The main message we presented was:

1. Create awareness and break habitual behavior.
2. Make eHUBS relevant to the target audience.
3. Invite for a test drive.
4. Connect with the values of the target group: freedom, flexibility and independence.

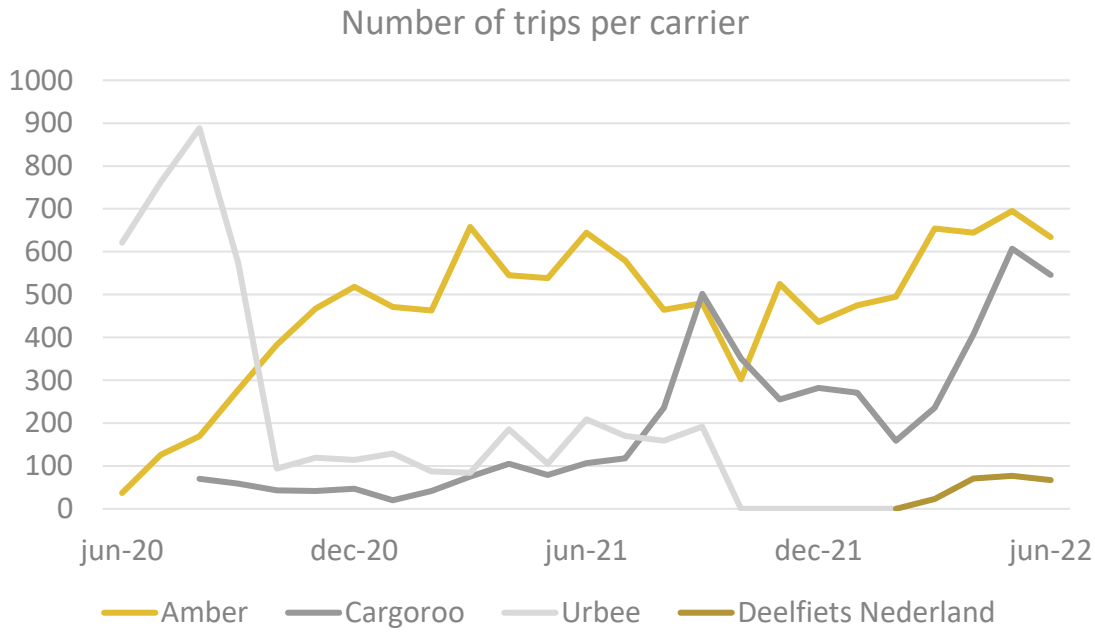
Afbeelding 12. *Presentatie bij eHUB Hertogplein door Guido Lammerts (links) en Daan van Velsen (rechts).*

USAGE FIGURES EHUBS – 2020 TO 2022

During the eHUBS project we monitored the use of the different modes of transport. The aim of this was to provide verschillen in gebruikinsight into locations, means of transport and time. As a result, we knew which locations and means of transport were used a lot and which less. Possible explanations for this have been identified and shared in this chapter.

TOTAL USAGE OVER TIME

At the beginning of summer in 2020, the eHUBS went into effect. We started with 13 eHUBS: 10 in Nijmegen and 3 in Arnhem. A lot has happened with the eHUBS between the start and the end. We explain this per year on the basis of the usage figures.



Grafiek 11. *Het aantal ritten per vervoerder door de jaren heen.*

2020

In June 2020, the e-bikes, e-cargo bikes and e-cars were installed for the first time. This was in the middle of the cycling season (with summer weather more people go by bike). The number of rides of the e-bikes was therefore immediately fairly high. In the summer months that followed, usage increased further, probably because the eHUBS became more and more known. The number of e-car journeys also

continued to increase.

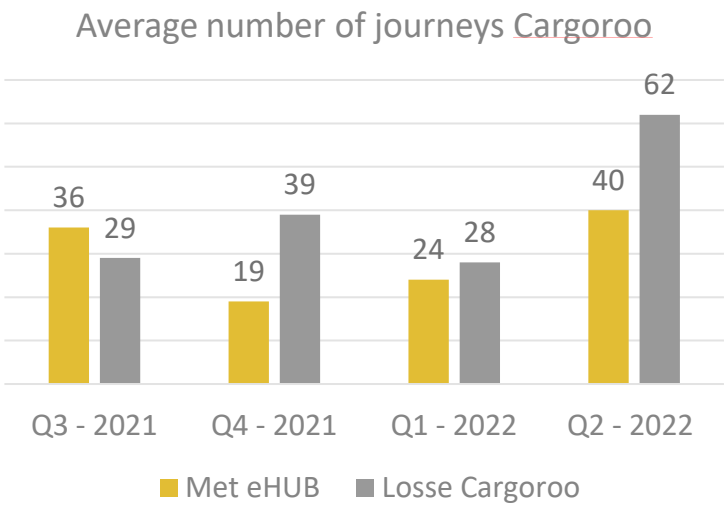
> *In de maanden maart t/m september is er veel interesse om gebruik te maken van e-bikes en e-bakfietsen. Bij voorkeur worden in deze maanden campagnes uitgezet om mensen te informeren en gebruik van eHUBS te stimuleren. Een campagne is minder relevant in de wintermaanden.*

After the summer, the use of the e-cargo bike decreased. This was to be expected as the cycling season and summer holidays were over. A decrease can also be seen for e-bikes. However, this decrease was caused by problems Urbee was experiencing. The e-bikes were stolen or broken by vandalism. As a result, less were used . In October 2020 Urbee decided to remove most of the bicycles due to vandalism and theft. This is reflected in the strong decline. The e-car was not affected by the end of the summer, and the number of journeys continued to increase.

Due to the spread of COVID-19, the Netherlands will continue to be in lockdown from October. As a result, fewer activities are possible and it would also be expected that fewer journeys are made. This is not reflected in the usage figures.

2021

In 2021, the number of rides remained fairly stable, but there are some zaken die opvallen. Because Urbee has removed many e-bikes, there are not such extreme differences between the number of rides in summer and winter. With regard to e-cargo bicycles, it is striking that there is a significant peak in the number of journeys in September. This is not due to the seasonal influence, but due to the placement of extra e-cargo bikes. Since this moment nthere are 21 places with an e-cargo bike from Cargoroo (with or without eHUB). Chart 12 shows the differences between the average number of journeys made by Cargoroo cargo bikes that are located at an eHUB, or that are separate from an eHUB. The cargo bikes that are separate are used more often on average. But beware: there are many factors that influence the use of a cargo bike, such as: other shared transport locations in the area, population density around the location, type of inhabitants around the location, etc. The higher number of trips with the separate cargo bikes does not mean that it is better to place a cargo bike separately from an eHUB.



Grafiek 12. *Verschillen in Cargoroo-gebruik tussen locaties met eHUB of enkel een Cargoroo.*

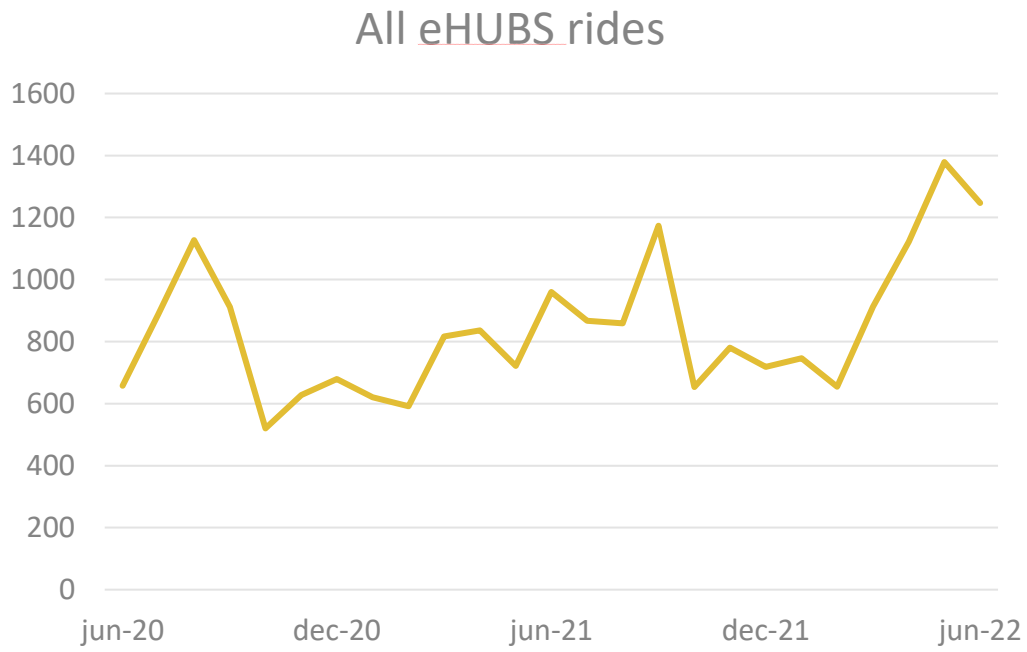
Furthermore, the e-cargo bikes were used less in the winter months, and somewhat more in the summer months. In October all bikes were removed from Urbee and in November 2021 Urbee will officially stop the project. The number of e-bike rides therefore fell to 0. In 2021 Amber had too few e-cars in their fleet. As a result, they could no longer provide a ride guarantee to private individuals. This meant that private individuals could only reserve a car 3 hours before a ride with a guarantee that the car was available. Reservations were not possible at all on weekdays. In the interviews with potential users, we saw that a lack of a ride guarantee is an important resistance. If they do not have a guarantee on the car for the journey they want to make, this creates uncertainty. In October we see a decrease in the number of journeys from Amber. This is the month in which the ride guarantee expired. In the months that followed, the number of journeys fortunately rose again towards the old level.

From March, the danger of COVID-19 will decrease and the lockdown will be relaxed. Cargoroo and Amber show that more trips are being made this month.

2022

In 2022 a new party with e-bikes will be involved: Share Bike Netherlands. They have stronger e-bikes that are more resistant to theft and vandalism. Despite Urbee's previous experiences, they dared to collaborate with eHUBS. However, the delivery of the e-bikes was delayed for several reasons. As a result, the first e-bikes from Deelfiets Nederland could only be rented in February 2022. So there was a long time during the project where there were no, or only a few e-bikes available. That is a shame, because the electric bicycle is a means of transport in which many

people are interested, according to the interviews and the usage figures from the start of the project. In addition, the e-bikes at an eHUB are very visible and they fill the hub, making the eHUB more noticeable. From April, most eHUBS will again have two e-bikes. The plan is to further expand the number of e-bikes in the eHUBS in June.



Grafiek 13. *Het totaal aantal ritten met de eHUBS door de jaren heen.*

INSIGHTS

We have closely monitored how much the means of transport have been used over the years. This gave us insight into the influence of cooperation with providers. We also learned which eHUBS locations work well and which work less well.

DEPENDENCE ON PROVIDERS

In an eHUB, electric means of transport of different shared means of transport are centered. The availability of the means of transport therefore depends on the providers. The success of an eHUB therefore partly depends on the providers. For example, as described earlier, the eHUBS had few (or no) e-bikes for a while, and Amber took the ride guarantee off the cars. When promoting eHUBS, it is important that awareness and relevance are created among the target group. This is difficult if little happens or is visible at the eHUB for a long time. The challenge is therefore to make good agreements so that the eHUBS remain relevant and attractive.

DIFFERENCES BETWEEN LOCATIONS

Stations

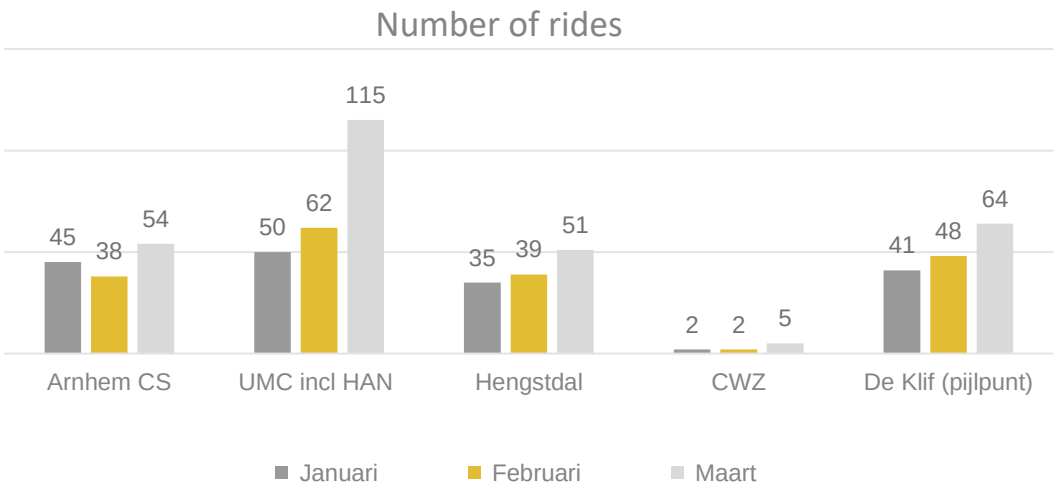
eHUBS have been installed at both Arnhem and Nijmegen train stations. As expected, many use was made of the offer at these locations. Many (travelling) people pass here and the location has a large reach compared to a location in a neighbourhood. An eHUB at a train station can be used to cover the last part of a journey.

eHUBS far from the center

Another successful location is the Klif in Oosterhout (Nijmegen). This location is far outside the center, which may be a reason that the eHUB is used more often here. People from Oosterhout have to travel further and the eHUB has fast means of transport. Other eHUBS far outside the center, such as Plant-je-vlag and Hatert, are also doing reasonably well.

Big companies

Large companies have the option to request an eHUB for hunstaff. The Canisius Wilhelmina Hospital (CWZ) in Nijmegen also wanted an eHUB. This has been placed on their site after consultation with CWZ, so that only their own staff can reach the eHUB properly. However, CWZ has taken little action to encourage the use of the eHUB. This was reflected in the usage figures, as shown in graph 14: the eHUB at CWZ is hardly used. An important lesson here is that an eHUB can be effective on the premises of a large company, but that it requires something extra. The target audience should know that there is an eHUB, what they can do with it, how they can use it and ideally a favorable employee arrangement is also made for its use.



Grafiek 14. *Het aantal ritten van verschillende eHUBS in 2022.*

SUMMARY

During the eHUBS project we monitored the use of the different modes of transport. A number of interesting topics emerged from this. So logically had the cycling season and the amount of transport invloedon the number of rides. The eHUB was also not always complete due to problems encountered by the transport providers. There were delivery problems, connection problems, vandalism, theft, and changes in terms and conditions. This makes it more difficult for an eHUB to become known and relevant to the target group and thus hinders its use. Finally, there were also differences in use between the eHUB locations. eHUBS at stations often performed well and eHUBS further outside the center also did. An eHUB at a large company can be promising, but then it must be actively promoted.

In the chapter 'Interventions – 2022' we described interventions from 2022 and their evaluation. Simultaneously with the evaluation of these interventions, we conducted a final evaluation of the eHUBS. The final evaluation will be described in the next chapter. We took to the streets to talk to people in Arnhem and Nijmegen about the project. The aim of the final evaluation was to retrieve the extent to which residents were familiar with the eHUBS, what they thought of the eHUBS and to what extent the eHUBS was used. We also collected information about what people thought of the campaign to stimulate eHUB use. Because the evaluation of the campaign was described in an earlier chapter, it is not considered in this chapter. Below we describe the structure and the results of the interviews. We also show the differences compared to the evaluation in 2021.

THE INTERVIEWS

We visited four locations. Three eHUBS in Nijmegen and one eHUB in Arnhem. Passers-by were interviewed at each location to find out what they thought of the eHUBS. Like the previous interview rounds, this was done using semi-structured interviews. In total we interviewed 85 people. The conversations lasted about 10 minutes. Some characteristics of the interviewees:

- 66% were female.
- 62% lived in the same neighborhood as the eHUB.
- 49% were aged between 18 and 30 years.

RESULTS

In the results we describe to what extent the interviewees were familiar with the eHUBS, what they thought of the appearance, what their opinion was about the project and whether they used the eHUB.

FAMILIARITY WITH THE EHUBS

We wanted to know how familiar people are with eHUBS. It turned out that 60% of passers-by were familiar with eHUBS. The extent to which they were known was more dispersed. For example, 17% had heard of eHUBS, but did not know what it meant ield.

> “I've seen it, but I wasn't sure what it was. I had a suspicion that you could rent means of transport”.

APPEARANCE

Half of the interviewees were positive, a small number of whom were even very positive. Yet there was also a part that reacted neutrally or negatively about the appearance of the eHUBS. It was often argued that the eHUB looks untidy or that it looks more like a private bicycle shed. The interviewees were positive about the green color and often mentioned that the eHUB stands out.

> “I didn't know it was already in operation, it looks more like a bicycle parking space”
>
> “Better than before, when there were only bicycles. Now it is beautiful with a roof. When it rains, I sometimes add my own bike.”

OPINION PROJECT

We were interested in what people thought about the start of this project by the Municipality of Arnhem and the Municipality of Nijmegen. The vast majority was positive about this. 73% of the interviewees indicated that they are positive about the fact that the municipality has started the eHUBS project. 19% even indicated that they are very positive.

> “It's great that this is possible, I think it's better that the transport should be placed in the same place here. In Amsterdam you have to look for a lot more”
>
> “More electric shared transport is great. Should actually be more in the Netherlands. It is good that as a green municipality we are reducing car traffic”

In addition, we asked people what they thought of the fact that there are different providers of shared transport at an eHUB (instead of scattered across the city). 38% of respondents were positive or very positive about centering providers in one place. The majority (58%) of the interviewees answered neutrally. Hardly anyone (4%) thought it was a bad idea.

> “Sometimes you need one thing and sometimes the other, handy that it's in one place. Then you don't have to go to different locations."

> “I don't care as long as there's a bicycle. The price-quality must be the same.”

It's a shame we haven't spoken to people who use the eHUB. Their opinion on this subject would have the most added value. We would then know, for example, whether they have also started using other means of transport. There are reasons for centering the means of transport from the perspective of behavioral psychology. For example, previous behavior is an important predictor of behavior. So if someone has a positive experience with an e-bike, there is a greater chance that he will also use the e-cargo bike next to it. In addition, an eHUB becomes more conspicuous the more means of transport and communication are placed together, instead of being distributed separately. That triggers people to look at it sooner, which ultimately leads to more attention and knowledge. We also saw this when we improved the signing at the eHUB. The eHUB was more noticeable and people knew better what to do.

USING EHUB

Finally, we asked people if they had ever used the eHUB before. Of the 85 interviewees, 1 person had used the e-bike. Because he gets this from work, he doesn't have to use an app or make a payment. Most questions are therefore irrelevant to this person. His experience is generally positive. The other means of transport were not used by any of the interviewees. It is in line with the expectation that we have spoken to few people who have used the eHUBS, as we have only spoken to a small part of the entire population of Arnhem and Nijmegen residents. 56% of the interviewees indicated that they would like to use an eHUB. However, we know that having an intention does not always lead to behavior. To move from these intentions to actual eHUB use, additional stimulation is often needed. This can be done, for example, with trial campaigns, reminders at the right times, or facilitating the rental process.

CHANGES OVER TIME

An interim evaluation of the eHUBS project already took place in March 2021. Below we describe the differences with the final evaluation of 2022 and what this means.

FAME

The 2021 evaluation found that 34% of those surveyed were aware of the eHUBS. Of these 34%, about half also knew what eHUBS was all about. After this evaluation, the advice was: create more awareness and focus on the added value of the eHUBS. The current final evaluation of 2022 shows that 60% of passers-by are familiar with the eHUBS. About a quarter of them have heard of it, but don't know what an eHUB is all about. The awareness of the eHUBS thus seems to have improved.

OPINION ABOUT THE PROJECT

We measured the opinion of the project by asking people's attitudes. In 2021, people were positive that the municipalities have started a pilot with eHUBS. Attitude scored an average of 3.74 (on a scale of 1-5). In 2022, the reactions became even more positive, and attitude scored an average of 4.05.

APPEARANCE

The interviewees thought it was sloppy that there were many other bicycles or scooters in the eHUB in both 2021 and 2022. This brings with it the problem that the eHUB is less noticeable, looks less attractive and it becomes more difficult to return the e-bike. Ideally, the eHUB is kept tidy and others are not allowed to park their private bicycles there. Furthermore, the color green was perceived as positive and sustainable during both evaluations.

SUMMARY

The awareness of eHUBS seems to have improved from 2021. More people know eHUBS and what it means. At the same time, there is still profit to be made, because there is also a large part that does not yet know what an eHUB is or what it can do for them. It therefore remains important to create awareness, and thereby mainly focus on the added value of the eHUB. Furthermore, it appears that a large part of the interviewees has an intention to use the eHUB. Yet hardly anyone had actually used an eHUB. To move from these intentions to actual eHUB use, additional stimulation is needed. Think of trial campaigns, reminders at the right times, or facilitating the rental process.

People have also become more positive and are happy that the municipalities of Arnhem and Nijmegen are involved in facilitating eHUBS. This fits in with the sustainable image that Nijmegen promotes. We also investigated whether people see added value in placing the means of transport together in one eHUB. The reactions are positive and neutral about this. Hardly anyone thought this was a bad idea. Unfortunately we were unable to speak to people who have used the

eHUB. There are, however, arguments from behavioral psychology why it is valuable to center shared means of transport. This can contribute to the use of several shared means of transport and it increases the conspicuousness of the eHUB. Finally, the appearance of the eHUBS seems to have improved and people are happy with the color green.