

# Evaluation report

Shared Bicycles in the Province of Overijssel

Deelfiets Nederland

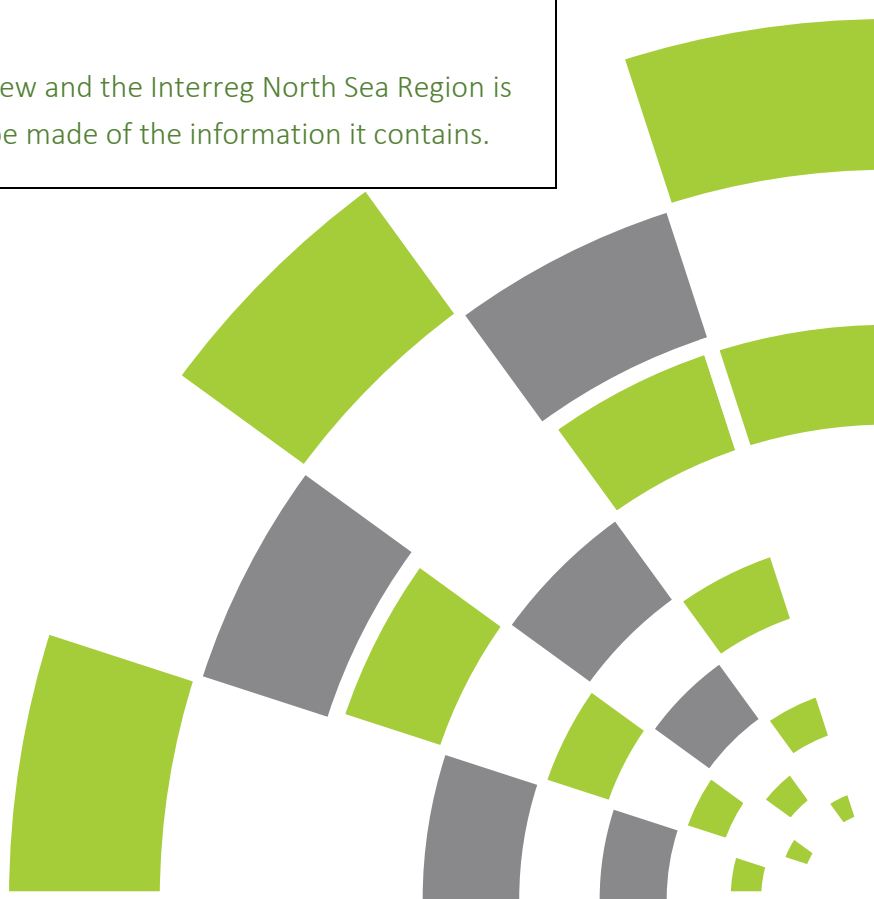
29/11/2022

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Disclaimer:

This paper reflects only the author's view and the Interreg North Sea Region is not responsible for any use that may be made of the information it contains.



## Short description

The main objective of the bike sharing project has been providing (electric) share bikes on strategic locations in the Province of Overijssel to give the different target groups a sustainable alternative for transportation by car and/or public transport. The key parts of the unique proposition of Deelfiets Nederland are station-based share bikes, own developed portal/app and the intention of collaboration with local partners. In consultation with every city Deelfiets Nederland picked the best locations of the share bike stations.

In the end Deelfiets Nederland has placed over 120 share bikes on 13 locations in the Province of Overijssel. In almost all cases, these share bikes can be used by anyone with a Deelfiets Nederland account. In the specific case of the Deltion College, a closed user group of 100 student users have been made. In the area of Steenwijkerland 42 share bikes have been equipped with air quality measurement sensors, providing useful data during every ride. The data is used by the city of Steenwijk for getting insights of air quality in the area. This end report will focus on two unique projects:

- shared bikes in the Steenwijkerland area
- the Deltion College shared bikes.

## Type of ITS

- Platform/App: Most share bike companies are using a standard shared mobility app. This kind of apps do have all the generic features, but because the world of shared mobility is changing rapidly, Deelfiets Nederland has decided in 2019 to start developing its own platform/app. This has been a huge challenge, but currently we are enjoying the benefits of this IT journey. The set-up of the platform is quite flexible, so if Deelfiets Nederland is facing a new opportunity with additional requirements, a rather small adjustment in back/front office set-up will be enough to match these additional requirements. This provides a huge Unique Selling Point in the shared mobility market.
- Dashboard; another feature of the Deelfiets Nederland platform is the option to provide a real-time dashboard to the share bike partners. In case partners are involved, a real-time dashboard has huge benefits in the daily operation. Based on the dashboard, a party is able to plan its operation efficiently and is always in control regarding the status of the shared bike fleet.
- In the Steenwijkerland region Deelfiets Nederland has equipped all the electric share bikes with Sodatq air quality measuring sensors connected to the battery of the share bikes. These sensors are providing air quality data during every ride which can be used for different goals.

## Timeline

### Steenwijkerland project:

- Start date: August 1, 2022
- Implementation Air Quality Sensors : October 10, 2022
- End date: December 31, 2024
- First Survey: October 12, 2022
- Second Survey: November 14, 2022

### Deltion College project

- Start date: January 8, 2022
- End date: December 31, 2024
- Survey: May 9, 2022

## Hypothesis

The main hypothesis of this share bike project is that share bikes can be a good and sustainable alternative for cars and public transport in many cases in both cities and rural environment.

## Data sources

- Data from shared bike rental trips
- Data from air quality measurement sensors
- Survey users shared bikes
- Input project manager

Deelfiets Nederland is monitoring every ride made. Depending on the type of share bike real-time GPS data is provided. Currently, Deelfiets Nederland is testing a state-of-the-art share bike providing real-time data like battery status, technical issues, crash indicators, etc. This will be quite helpful in upgrading customer support.

The Sodaq Air Quality Measurement Sensors are providing different type of data like:

- Humidity
- Particular Matter types PM1, PM 2.5 and PM 10

Based on customer feedback, Deelfiets Nederland is constantly looking for improvement of the products and services used. Next to share bike ride feedback, Deelfiets Nederland is doing customer surveys on a regular basis.

For every project Deelfiets Nederland is taking part, a project manager is assigned, responsible for delivery and communication to all stakeholders involved. Communication is key for the success of a project.

## Analysis

### Report of the pilot

#### Deelfiets Nederland shared bikes in Overijssel

Data from shared bike rental trips during the period 1/1/2019-30/11/2022, where it should be noted that some projects started only in 2022.

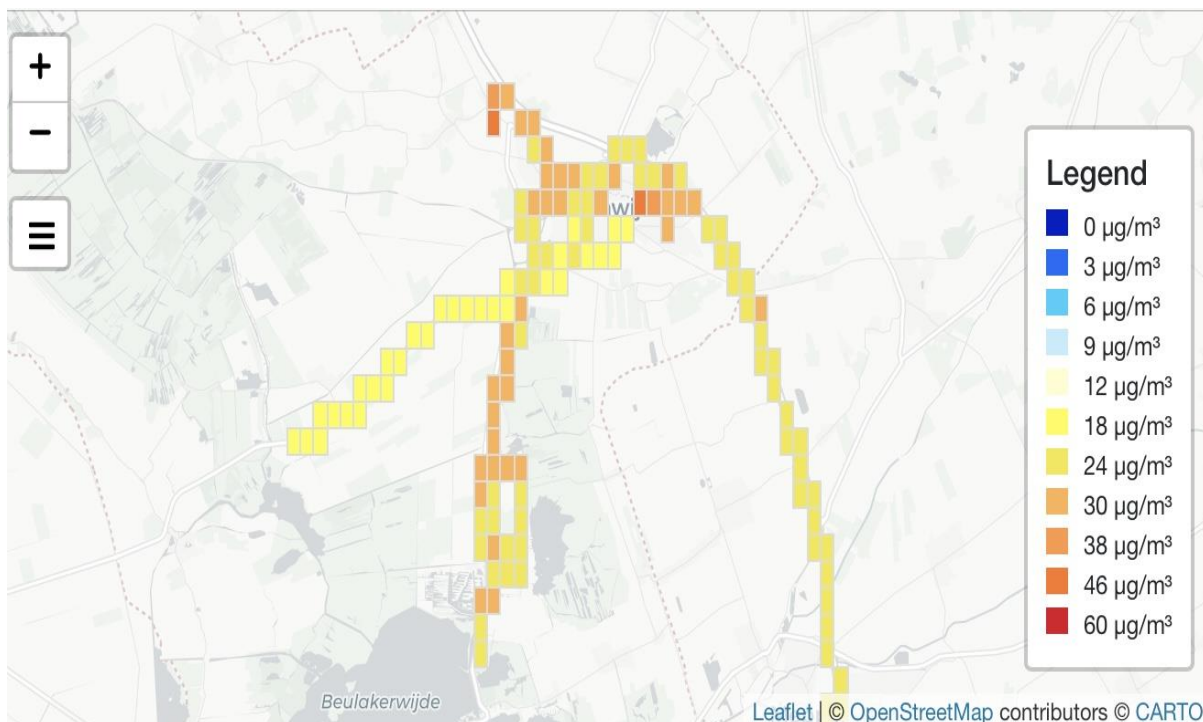
	Zwolle	Kampen	Enschede	Steenwijkerland	Dalfsen/Ommen	Deltion	Total
Number of rides	452	122	22	322	183	2683	3784
Average number of km's per ride	5	6	4	18	13	3	
Indication CO2 reduction (kg)	266	11	20	725	297	1.006	2.324

In total approximately 2.324 kg CO2 reduction has been realized (based on assumption of 125 grams CO2 reduction per km cycled (compared to car/public transport)).

#### Deelfiets share bikes with air quality measurement in Steenwijkerland

The Steenwijkerland project has started in august 2022. Deelfiets Nederland is the first shared bike provider in this area, so it's a brand-new concept for most of the people.

The Sodaq Air Quality Measurement Sensor data is provided during every shared bike ride in the Steenwijkerland area. Hereby a picture of one day in the Steenwijk area:



The Air Quality data is shared with the City of Steenwijk. The following sheet is showing the Sodaq air quality data of one share on a single day.

lat	lon	temp_avg	temp_min	temp_max	pm_1_avg	pm_1_min	pm_1_max	pm_2_5_avg	pm_2_5_min	pm_2_5_max	pm_10_avg	pm_10_min	pm_10_max	hum_avg	hum_min	hum_max	date
52.807	6.081	12.234047	12.214465	12.25719	44.13312	43.35455	44.94155	47.869286	47.229126	48.638298	49.33512	48.918682	49.99925	94.09322	93.960464	94.17563	2022-10-13
52.809	6.079	12.299916	12.299916	12.299916	40.075294	40.075294	40.075294	42.556152	42.556152	42.773598	42.773598	42.773598	42.773598	94.15732	94.15732	94.15732	2022-10-13
52.808	6.08	12.194437	12.187762	12.201113	45.719578	43.72941	47.709743	49.27723	47.702675	50.85178	50.413723	49.48647	51.340973	94.059654	93.94368	94.17563	2022-10-13
52.808	6.079	12.278553	12.25719	12.299916	44.55087	42.627975	46.47376	47.133858	45.08159	49.18613	47.161972	45.08663	49.237316	93.93148	93.82771	94.03525	2022-10-13
52.809	6.08	12.355992	12.355992	12.355992	37.402447	37.402447	37.402447	40.052666	40.052666	40.052666	40.664547	40.664547	40.664547	93.94673	93.94673	93.94673	2022-10-13
52.81	6.084	12.665751	12.665751	12.665751	27.552258	27.552258	27.552258	29.80551	29.80551	29.80551	30.62387	30.62387	30.62387	93.13649	93.13649	93.13649	2022-10-13
52.809	6.081	12.313267	12.313267	12.313267	36.574974	36.574974	36.574974	39.399612	39.399612	39.399612	40.28262	40.28262	40.28262	93.6736	93.6736	93.6736	2022-10-13
52.809	6.082	12.329289	12.329289	12.329289	37.10103	37.10103	37.10103	40.134228	40.134228	40.134228	41.235	41.235	41.235	93.81856	93.81856	93.81856	2022-10-13
52.81	6.083	12.327954	12.313267	12.342641	38.48695	37.807034	39.166866	41.707344	40.9649	42.449787	42.939518	42.168438	43.7106	93.91164	93.85213	93.971146	2022-10-13
52.811	6.084	12.49051	12.286564	12.665751	30.815615	26.85809	36.612324	33.007305	29.057339	39.257736	33.521442	29.85846	39.91922	93.5128	93.049515	94.065765	2022-10-13
52.809	6.086	12.639047	12.58297	12.695124	33.315674	33.2598	33.371548	36.014053	35.74674	36.28137	36.971584	36.44995	37.493217	93.38368	93.34248	93.42488	2022-10-13
52.81	6.085	12.667086	12.639047	12.695124	32.02887	31.017912	33.03983	33.95626	32.90317	35.009354	34.062447	33.028843	35.096046	93.29289	93.22499	93.360794	2022-10-13
52.808	6.087	12.602998	12.566948	12.639047	32.58849	32.567383	32.609596	35.76458	35.693253	35.835903	37.356606	37.22543	37.48778	93.41496	93.27992	93.55	2022-10-13

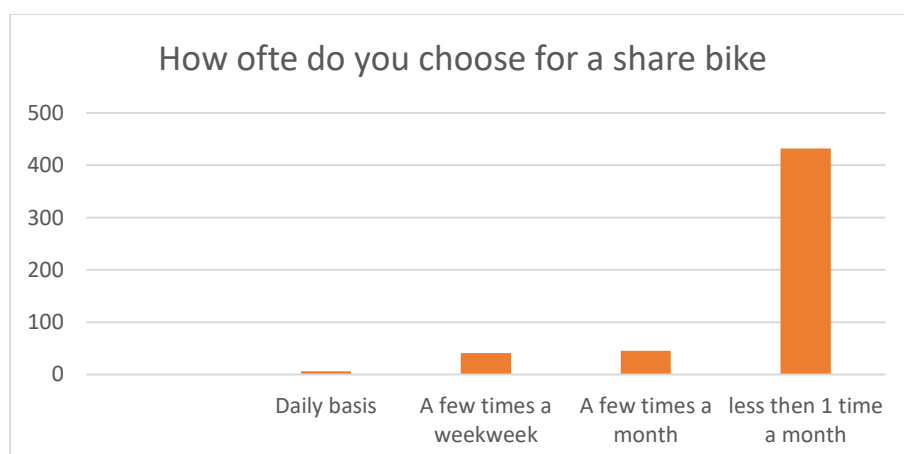
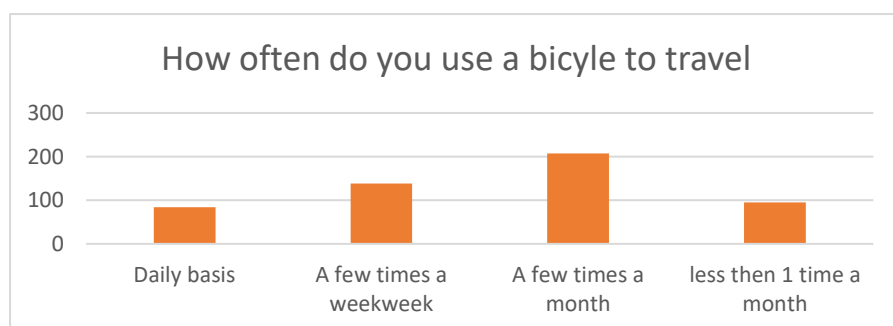
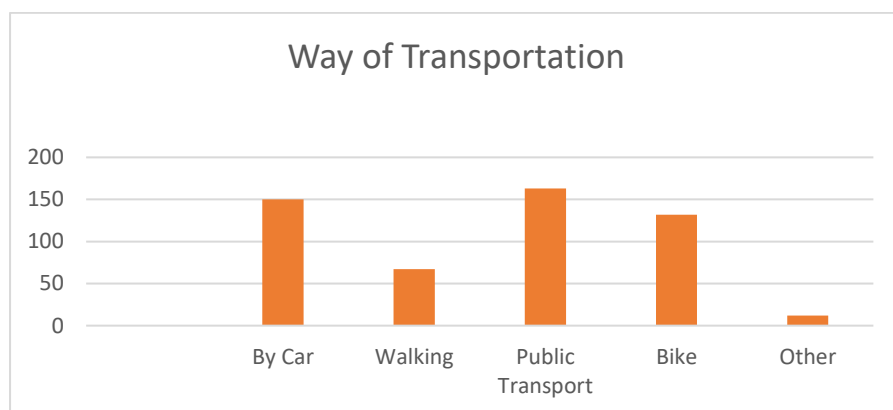
During a project Deelfiets Nederland is doing surveys amongst customers and non-customers to get a better understanding if the existing set-up is matching the needs and requirements of the customers. Every project has unique characteristics. Surveys are an important tool to finetune every specific project. The survey data is used for the monthly review meetings with the project stakeholders.

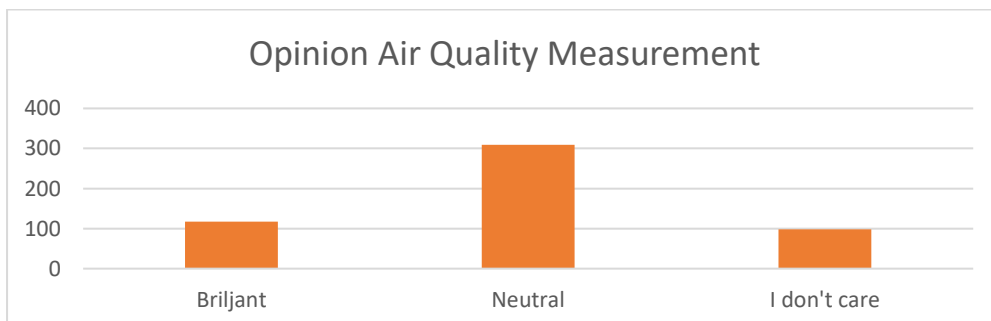
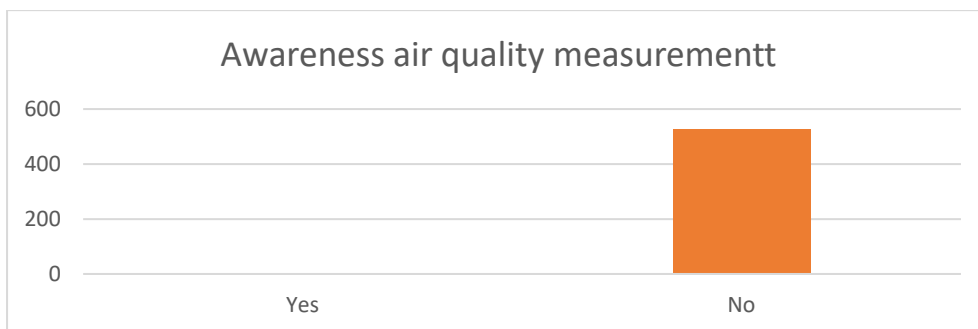
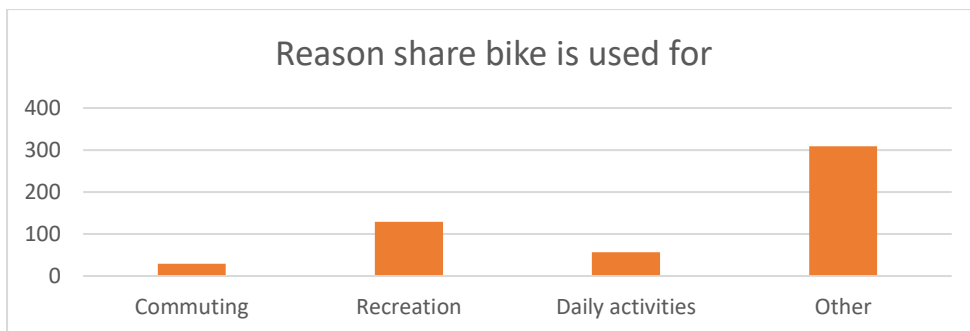
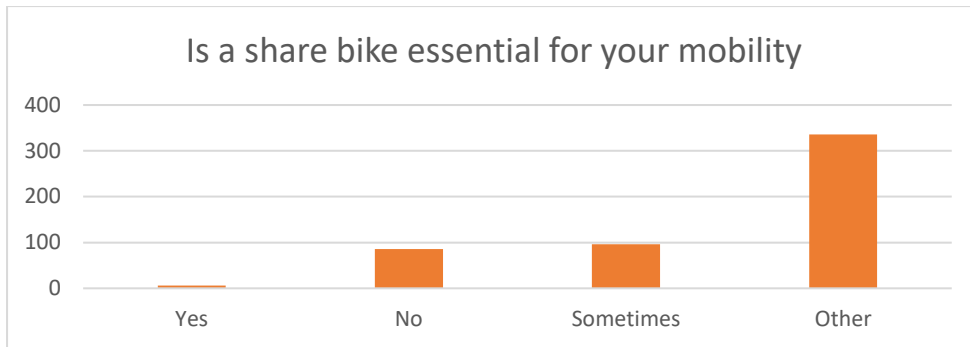
The survey used in the Steenwijkerland area consisted of the following questions:

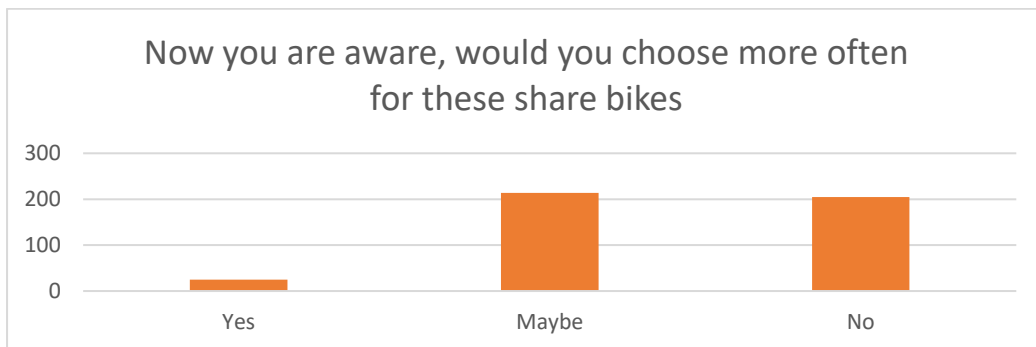
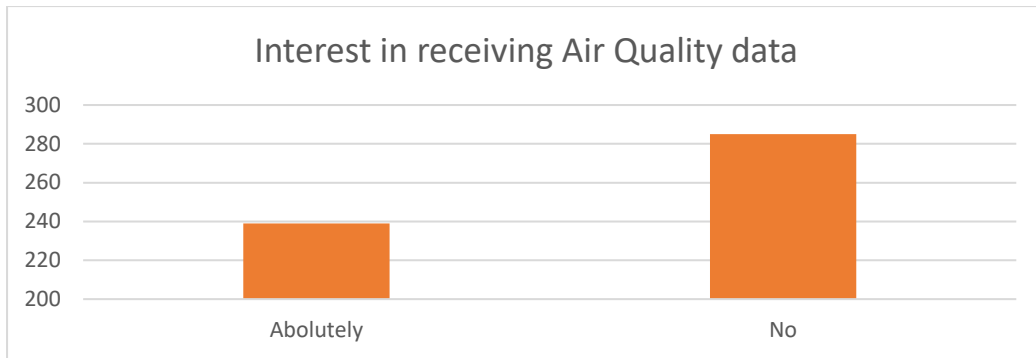
- Which way do you travel the most?
- How often do you use a bicycle to travel?
- How often do you choose for a share bike?
- Do you consider a share bike as an essential part of your mobility?
- What is the reason you will use a share bike?
- Do you know these share bikes are providing air quality data?
- What's your opinion about the measurement of air quality data?
- Would you be interested in receiving the data?

Deelfiets Nederland received feedback from 524 people. In this case we did not ask specific questions regarding the quality of the share bikes. This because we know people in general are only willing to participate if the survey will not take a lot of time. Apart from the survey Deelfiets Nederland is also receiving feedback from users through the app functionality.

The survey results of Steenwijkerland are shown in the following graphics:







Besides feedback from the surveys and the app, Deelfiets Nederland is also receiving questions from public and private organizations in the area interested in taking part in the project. We are planning to expand the number of share bike drop points from 4 to 10 in Q1 2023. The number of share bike drop points in the network is essential for the success of the project.

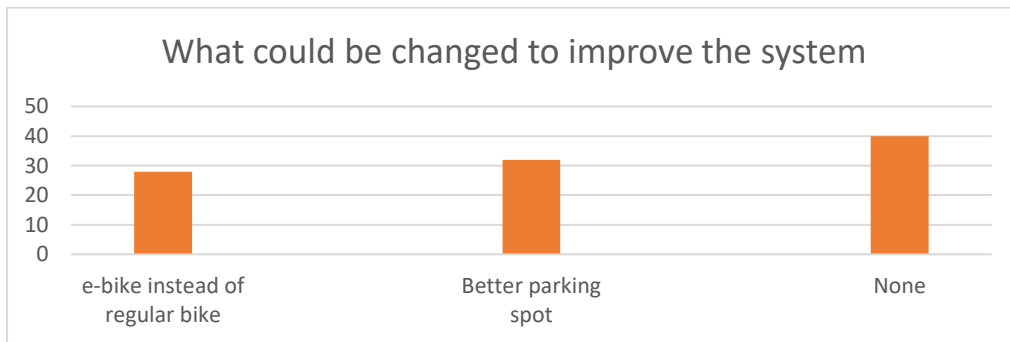
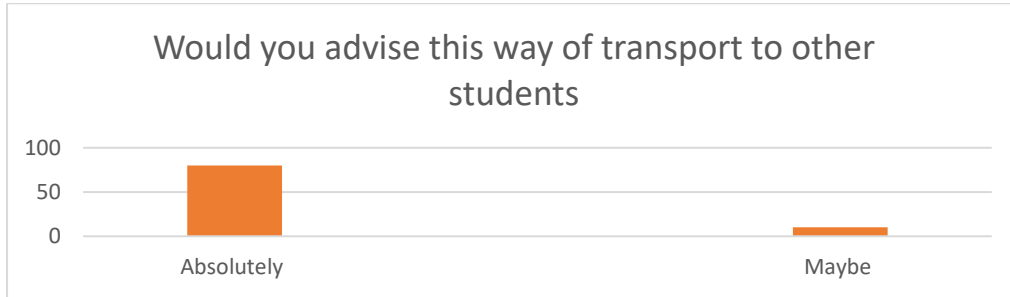
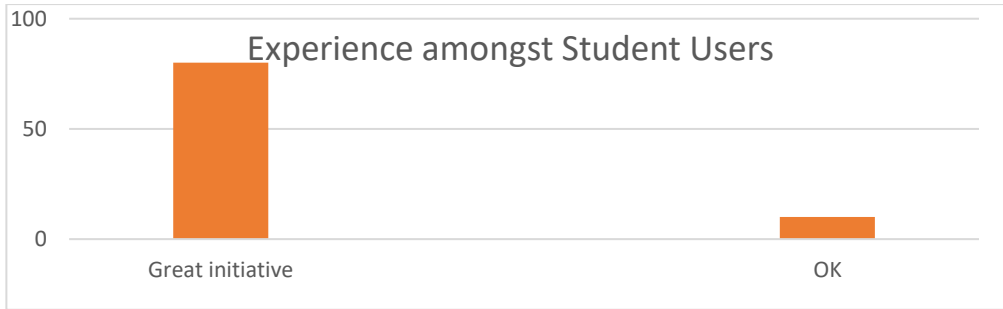
### Deelfiets share bikes for Deltion College students

Deltion College is a huge College in the city of Zwolle with over 20.000 students and 1.800 staff. The Deltion project is about using shared bikes by students from Zwolle Central Station to the Deltion Campus in Zwolle, thus replacing trips normally done by free public transport. This will reduce the pressure on the public transport system especially during peak hours.

The pilot is limited, 25 share bikes connected to a closed user group of 100 students. Since the start in January 2022, over 2500 rides have been made by this group of students.

A Deltion survey amongst the users is showing positive feedback and as a result it is the intention to roll-out more shared bikes amongst a larger group of 250 students.





Next to the planned increase of this project to 250 students, the Province of Overijssel is promoting this concept to other colleges similar to Deltion College.

### Experiences project managers

In general, the good news is that these pilots are seen as great initiatives to a more sustainable and efficient way of transport.

The spin-off of the Steenwijkerland project is the interest from public and private organisations to join this initiative. The tourist sector will adopt this concept to expand their business. From the public sector we experience interest from neighbouring cities and the Ministry of Defence with a huge military base in this area and facing transportation issues with retracting public transport. We expect to increase the number of share bike drop points from 4 to 10 in Q1 2023.

Next to the planned increase of the Deltion College project to 250 students, the Province of Overijssel is promoting this concept to other colleges similar to Deltion College.

Together with Deltion College we are planning a promotional tour and expect the same enthusiasm amongst other colleges.

## Conclusions Deelfiets Nederland

Implementing a shared bike initiative can only be successful if all stakeholders are committed to the project. It's not about putting shared bikes on the street and then people will use these automatically.

It all starts with clear objectives shared amongst all stakeholders. The right share bike concept on the right locations combined with a good marketing campaign are key elements. Even with all this in place, external factors like Covid 19 can be of huge impact on the number of share bike trips. Deelfiets Nederland is still facing the impact of Covid 19, looking at the challenges of getting share bikes and parts.

The intention of Deelfiets Nederland is that the implemented project will be profitable after the subsidy period has ended. Therefore Deelfiets Nederland will only take part in new share bike project if every project partner is committed to make this project a success.