

A dark blue silhouette of a city skyline with various building shapes of different heights and widths, set against a lighter blue background.

THE USE OF SHARED MOBILITY SERVICES IN DISADVANTAGED NEIGHBOURHOODS

A STUDY ON HOW SHARED MOBILITY SERVICES
CAN AFFECT URBAN NEIGHBOURHOOD RENEWAL

P5 PRESENTATION

Meltem Tamer | 4161955 | 1 July 2020

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A bicycle with a red basket is parked in front of a wooden door with a decorative metal grille. The image is overlaid with a dark blue semi-transparent filter.

01

INTRODUCTION

PROBLEM STATEMENT



Due to the urbanization, it is expected that more people live in the cities



Challenges and problems for cities



Urban mobility systems can be an important factor to solve these problems

PROBLEM STATEMENT



New developments are changing current mobility systems in cities by creating new possibilities for the application of smart solutions

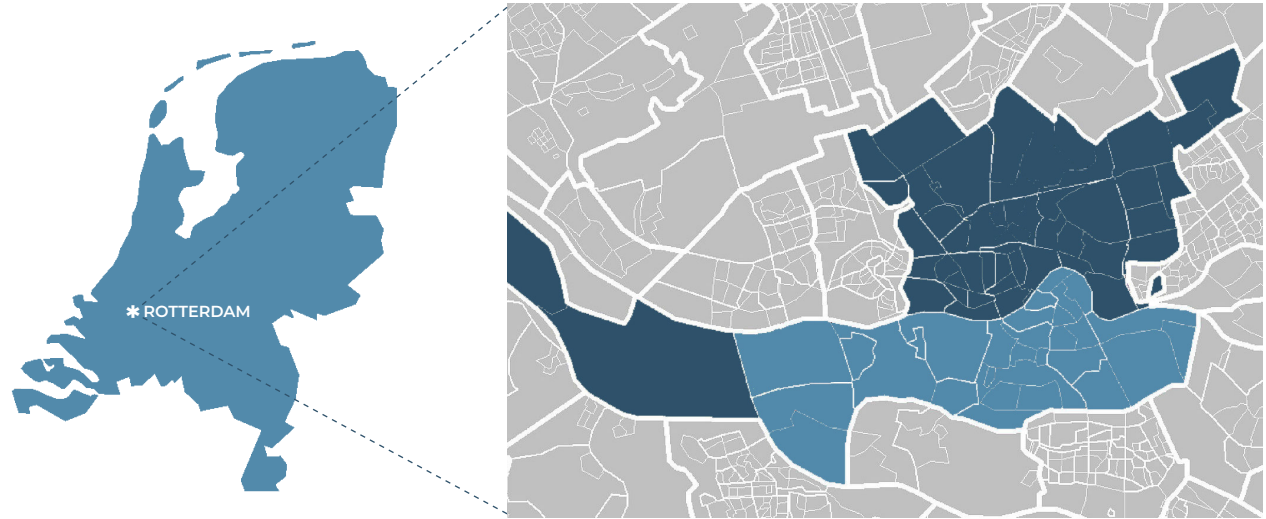


New shared mobility services as an opportunity for sustainable transport & address equity in transportation



Enhancement of ICT will potentially be a replacement for physical mobility + bring new equity concerns

PROBLEM STATEMENT



(Wikipedia, 2019)

Rotterdam - South:

Urban renewal area with socio-economic problems + transport poverty

RESEARCH QUESTIONS

“In what way can public parties use shared mobility services to stimulate urban neighbourhood renewal in Rotterdam-South?”

RESEARCH QUESTIONS

SUB-QUESTIONS

Urban renewal:

- What is urban renewal?

Shared mobility services in general:

- Which smart mobility services and business models are available?
- Who are the users of shared mobility services?
- What are potential barriers for using smart mobility services in a disadvantaged neighbourhood

RESEARCH QUESTIONS

SUB-QUESTIONS

Shared mobility services in Rotterdam-South:

- What is the main motivation of the municipality of Rotterdam when selecting a specific neighbourhood for implementing a shared mobility pilot project?
- Which shared mobility services are used in Rotterdam?
- In which areas of Rotterdam are these services distributed?
- Why are service providers providing services in Rotterdam-South or why are they not?
- What policy does the municipality of Rotterdam have for the implementation of shared mobility services?

Synthesis:

- Which potential solutions show the most promise in overcoming barriers in disadvantaged neighbourhoods in Rotterdam-South?



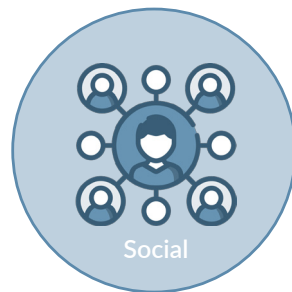
03

LITERATURE REVIEW

URBAN RENEWAL



- Revival of the local and regional economies
- Economic competitiveness and welfare



- Improving the living conditions
- Improved health and wellbeing
- Improved education and skill levels
- More facilities and greenspace
- Participation



- The state of buildings and environmental quality
- Improved infrastructure

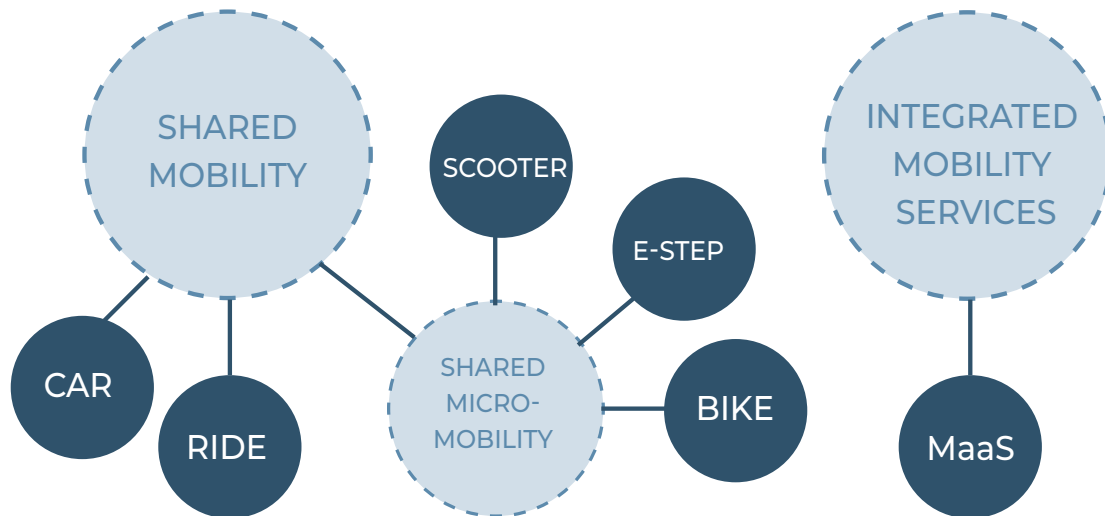


- Amenity improvements
- Land and ground renewal
- Improvement of accessibility and services
- The quality of the urban design
- Environmental quality

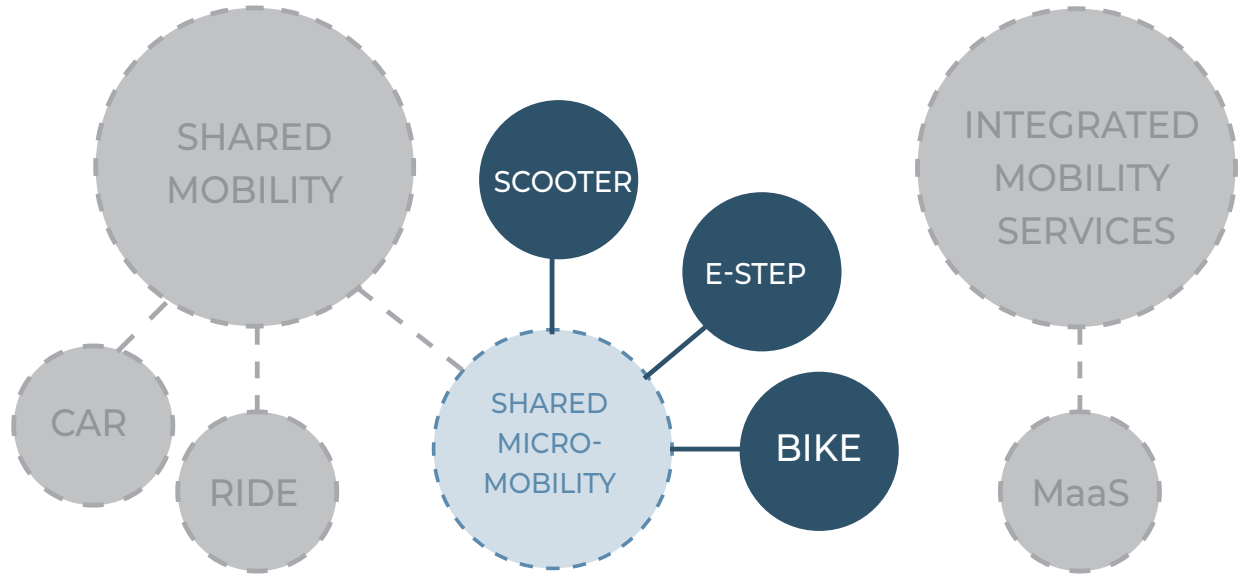
SMART MOBILITY

NEW MOBILITY SERVICES

- Complement existing public transport
- Provide citizens with multimodal and on-demand mobility solutions
- Possible at scale through ICT



SCOPE OF RESEARCH



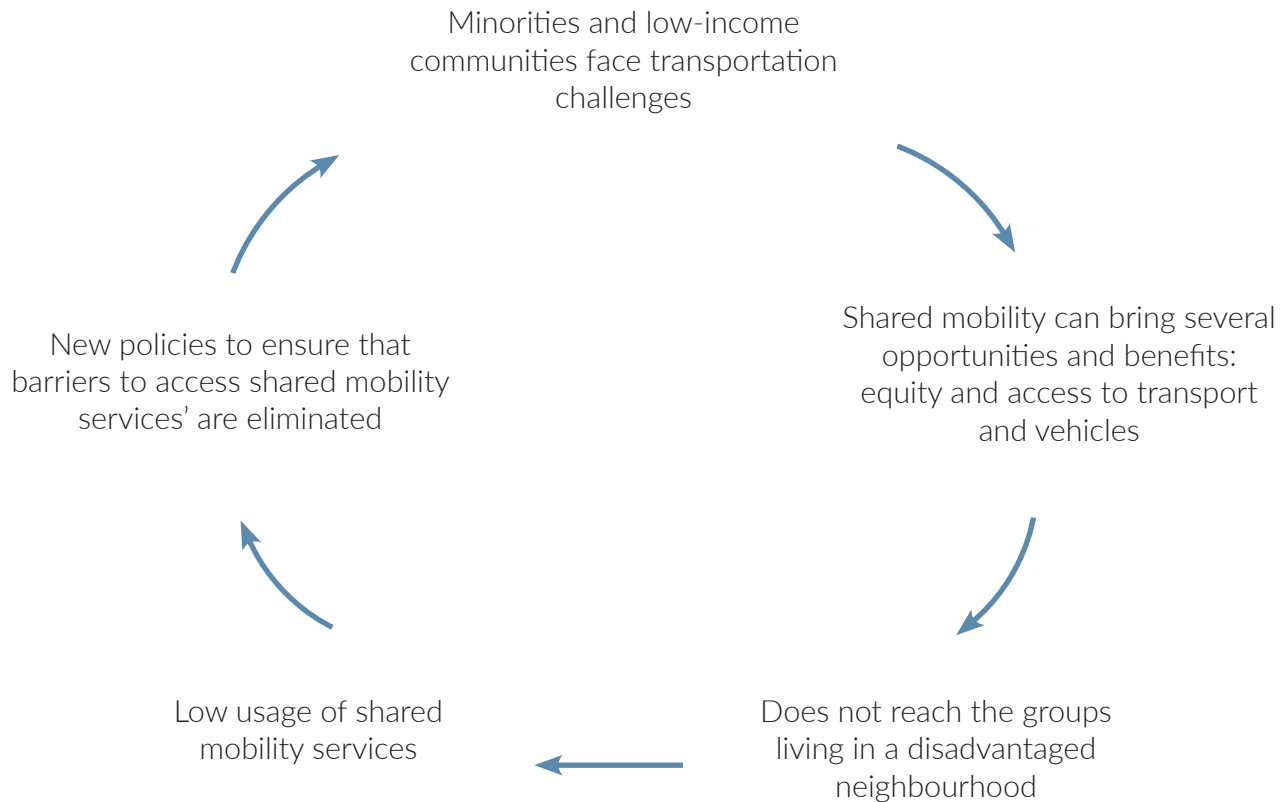
USERS OF SHARED MOBILITY

USER PROFILE



- 21-45 years old
- Well educated
- Adapted to digital transformation
- Middle to upper-income with no children (yet)
- Lives in the urban areas of the city
- Zero to one car household

EQUITY CONCERNS & BARRIERS



EQUITY CONCERNS & BARRIERS



EQUITY CONCERNS & BARRIERS



Offering shared mobility
services for certain groups

Strategy:

Equal level of services



Costs of services
Bank/credit card requirement

Strategy:

Reduce the fees and taxes
Subsidy programmes
Payment by pre-paid cards of
public transit cards



Access to a smartphone
and internet data

Strategy:

Potential of neighbourhood
mobility hubs

EQUITY CONCERNS & BARRIERS



Systems are rarely located in disadvantaged neighbourhoods

Strategy:
Policy that requires service providers to locate in disadvantaged neighbourhoods
Governmental subsidies



Usage influenced by cultural values
absence of information and education

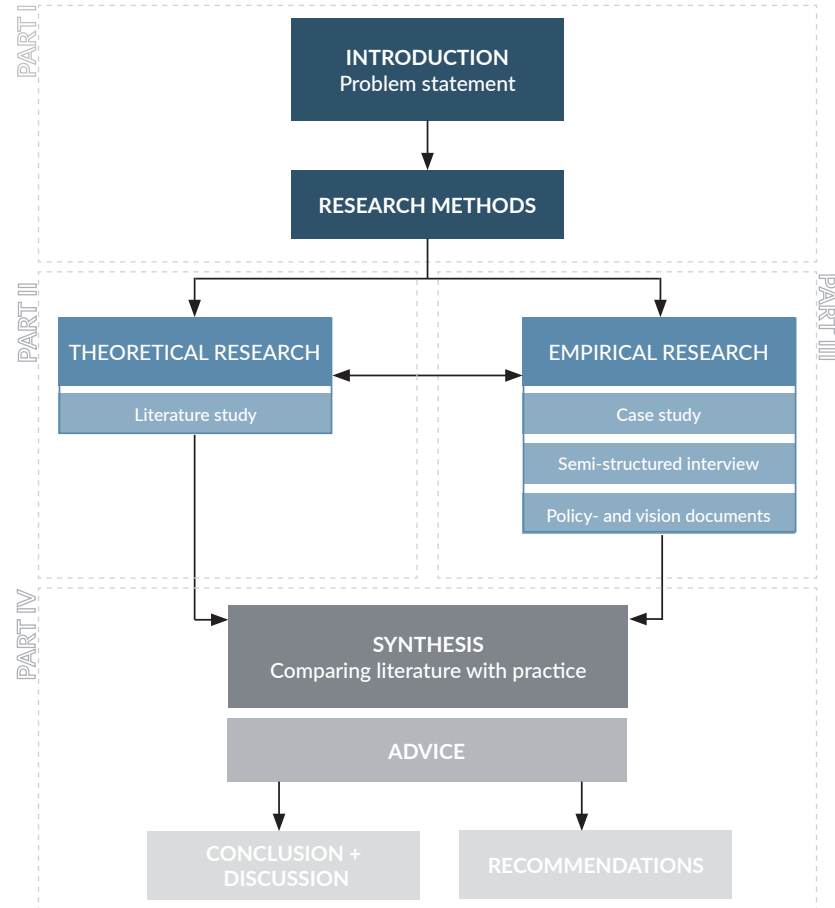
Strategy:
A tailored approach
Specific community outreach programmes



03

METHODOLOGY

RESEARCH DESIGN



The background image is a photograph of a cable-stayed bridge, likely the Jiaxing Bridge in China, spanning a wide river. The bridge has a tall, white, A-frame pylon with numerous stay cables. In the background, a city skyline is visible with several high-rise buildings. The sky is blue with some light clouds. The entire image is overlaid with a semi-transparent dark blue filter. The text '04' is large and white, positioned on the left side of the image. Below it, the text 'CASE STUDY' is in a smaller, white, sans-serif font, centered within a horizontal blue bar that spans the width of the image.

04

CASE STUDY

SHARED MOBILITY SERVICES

VISION

- The Rotterdam Mobility Approach (RMA) emphasizes four key principles for the future of the city:



More space for
pedestrians, cyclist
and public transport



Safe and healthy
connections



All inhabitants can
participate, so enriching
the mobility choices



Vital economic traffic,
more efficient and
clean logistics

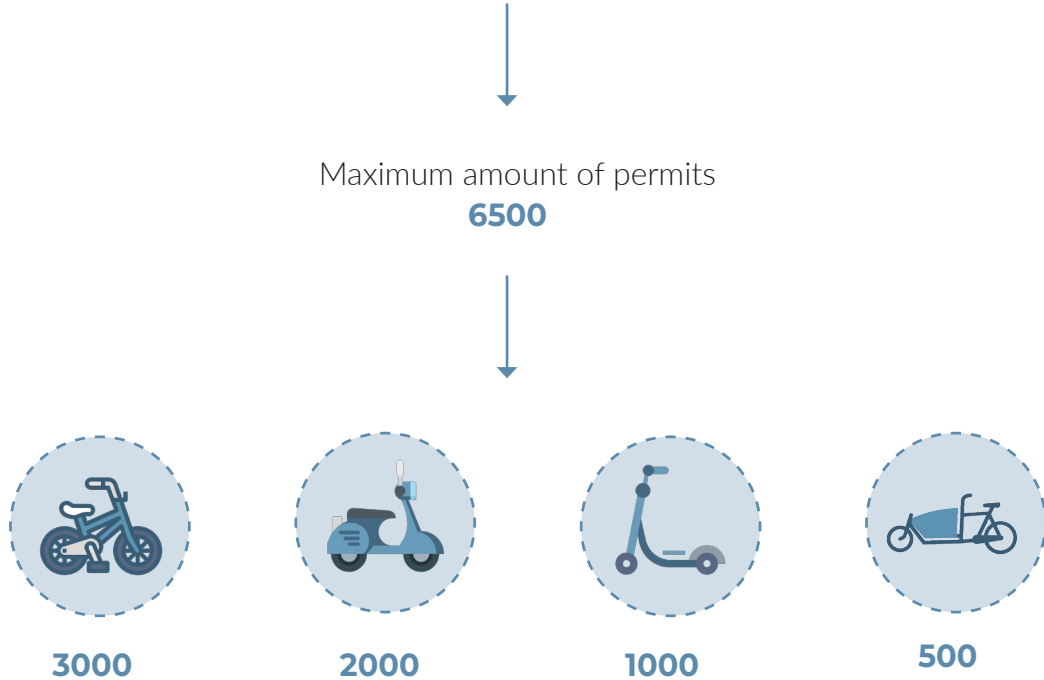
SHARED MOBILITY SERVICES

PERMIT SYSTEM FOR SERVICES

- From January 2020 onwards a new permit system
- Obliges the service providers to identify and manage the risks of their vehicles and services.
- The municipality of Rotterdam aims to improve the quality of shared vehicles, ensuring that users do not experience any inconvenience

SHARED MOBILITY SERVICES

Ensure that the supply of shared vehicles grows with the demand to minimize the negative impact of the shared vehicles on the public spaces in the city.



SHARED
MOBILITY
SERVICES

mobike

felyx!



CHECK.

URBAN RENEWAL

URBAN RENEWAL IN ROTTERDAM-SOUTH

- Rotterdam-South has a versatile concentration of socio-economic problems
- Part various urban renewal programs of the government:
 - The Vogelaars approach
 - The Pact on South
 - National Program Rotterdam-South



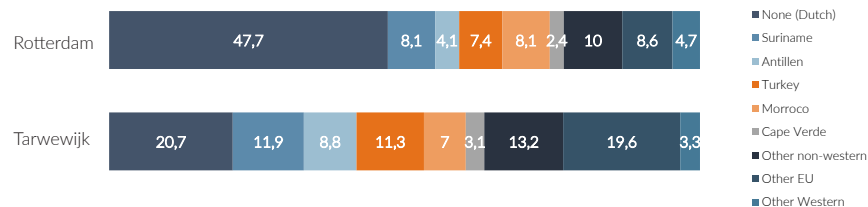
Areas in Rotterdam (Wijkprofiel Rotterdam, 2020)

TARWEWIJK

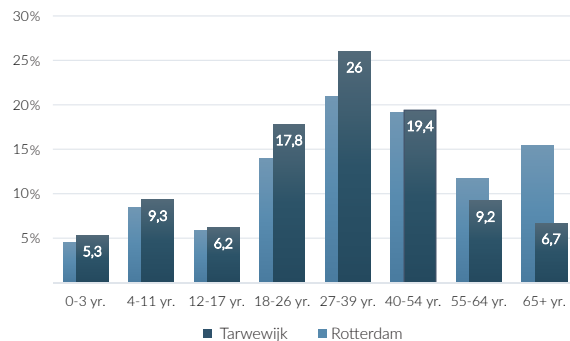


TARWEWIJK

THE DEMOGRAPHIC BACKGROUND OF THE POPULATION



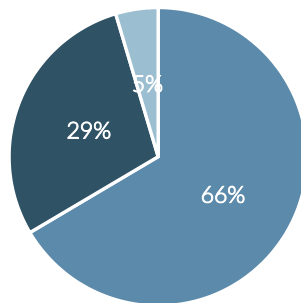
(BRP-OBI, 2020)



(BRP-OBI, 2020)

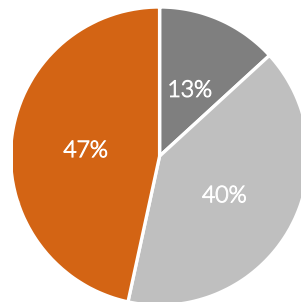
TARWEWIJK

THE SOCIO-ECONOMIC CONDITIONS



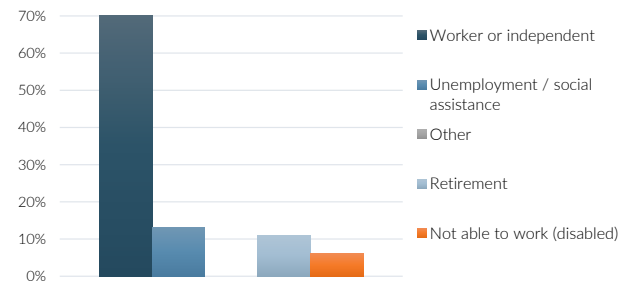
■ Low ■ Middle ■ High

(BRP-OBI, 2017)



■ To minimum wage
■ Minimum wage to modal
■ Modal and higher

(BRP-OBI, 2017)



(CBS-OBI, 2018)

TARWEWIJK

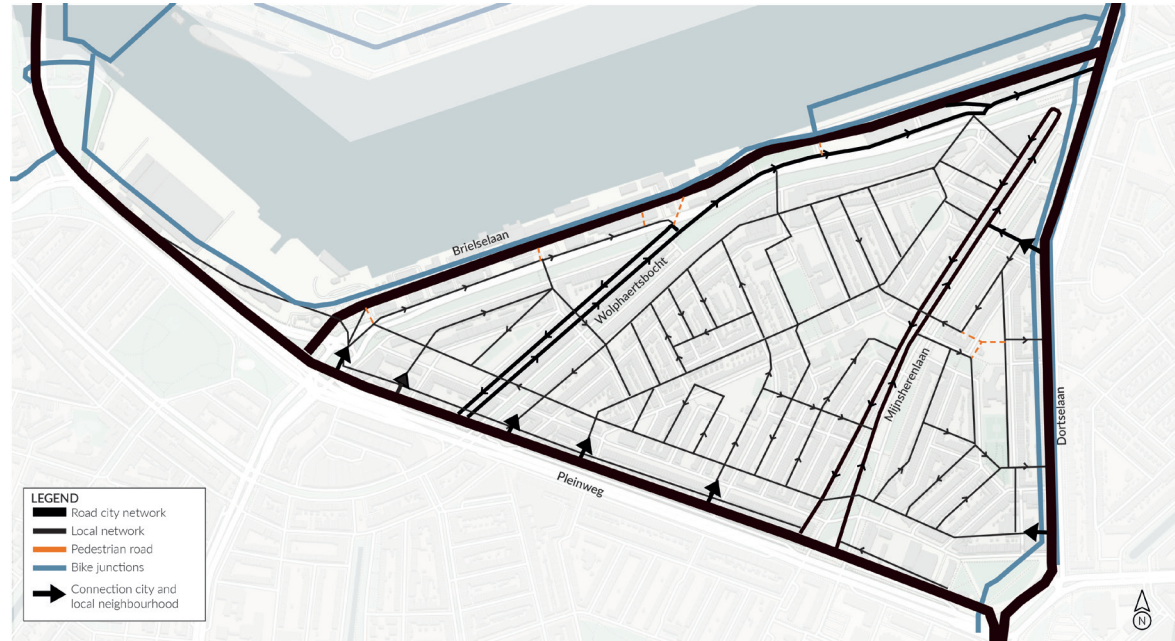
PUBLIC TRANSIT



Public transit in Tarwewijk (own illustration)

TARWEWIJK

CAR ROADS + SLOW TRAFFIC



Car roads and slow traffic in Tarwewijk (own illustration)

TARWEWIJK

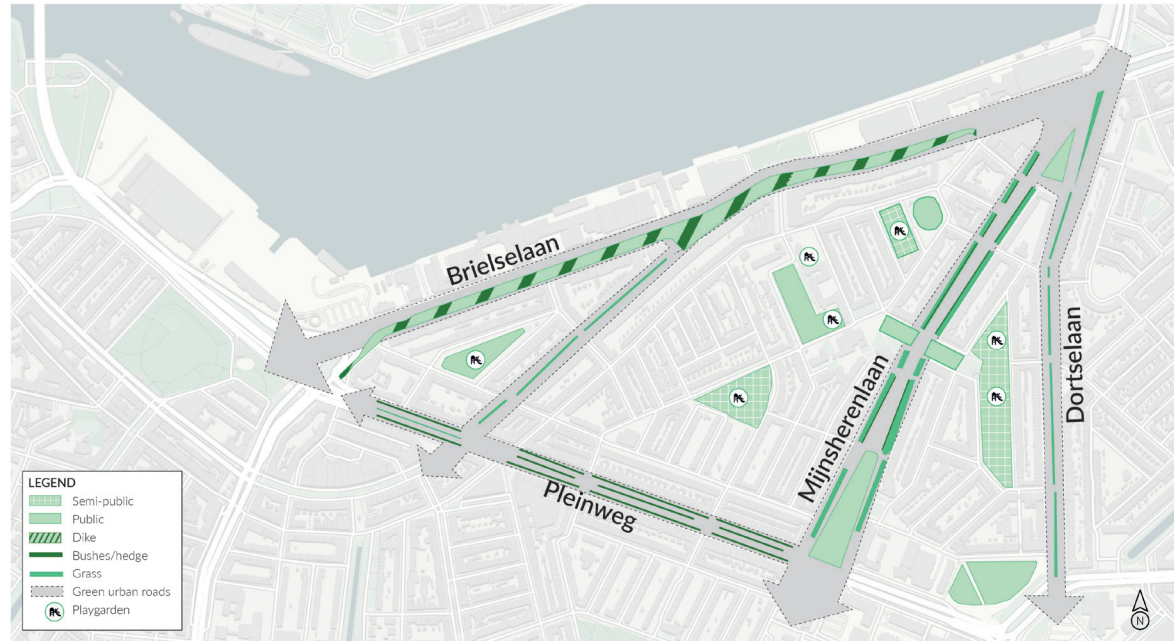
PARKING



Parking spaces and spots in Tarwewijk (adapted from Springco, 2020)

TARWEWIJK

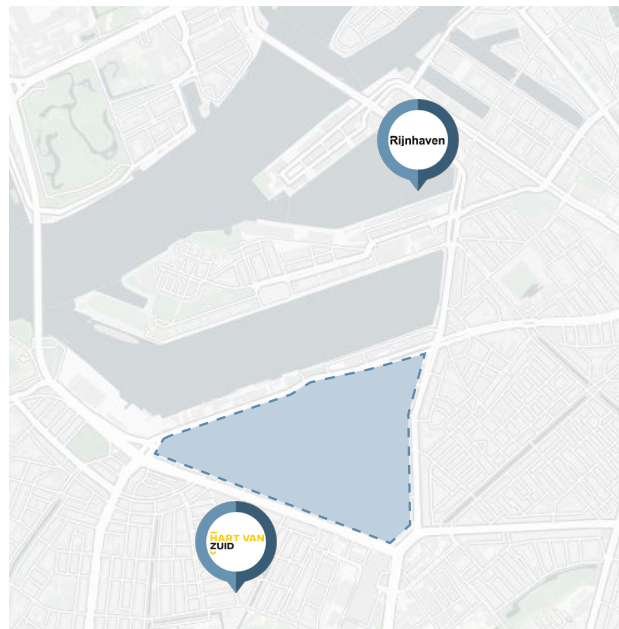
PUBLIC SPACE & GREEN



Public spaces and green in Tarwewijk (own illustration)

TARWEWIJK

URBAN DEVELOPMENTS





05

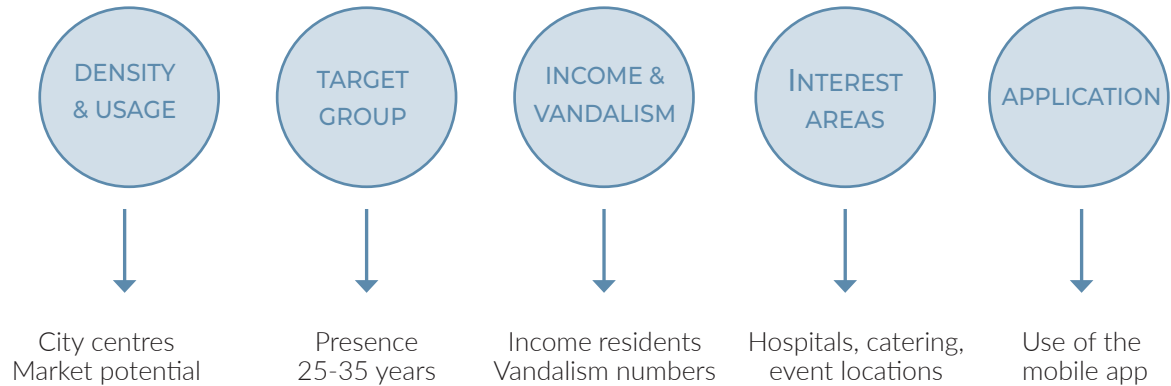
EMPIRICAL RESEARCH

PART 1:

SHARED MOBILITY SERVICES IN ROTTERDAM

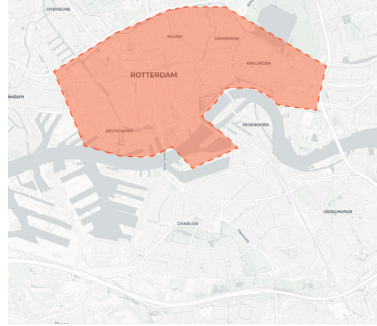
SHARED MOBILITY SERVICES

DETERMINATION OF THE SERVICE AREAS

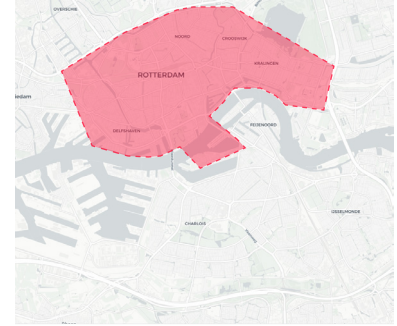
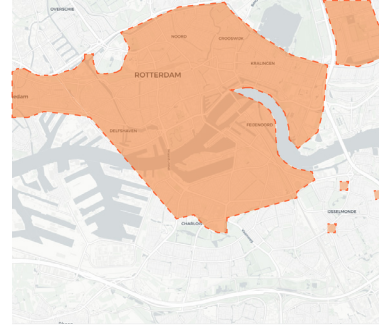


SHARED MOBILITY SERVICES

SERVICE AREAS

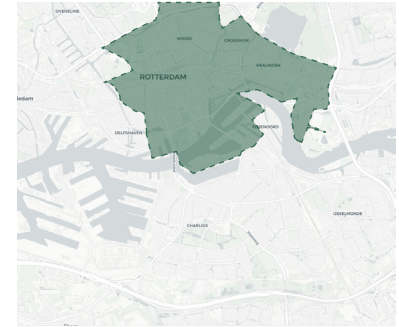
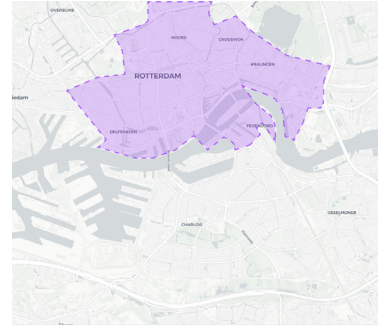


mobike

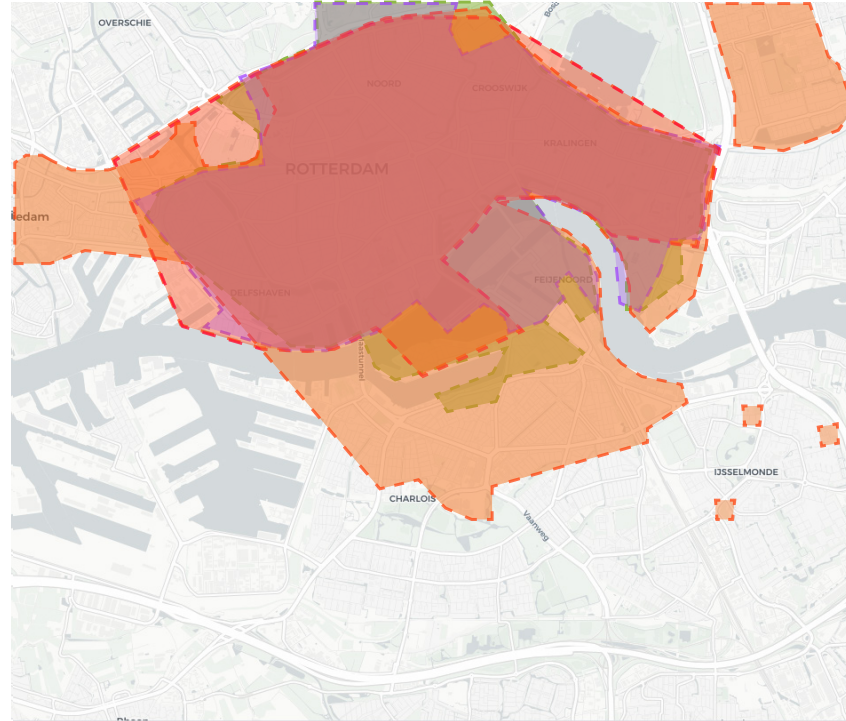


SHARED MOBILITY SERVICES

SERVICE AREAS

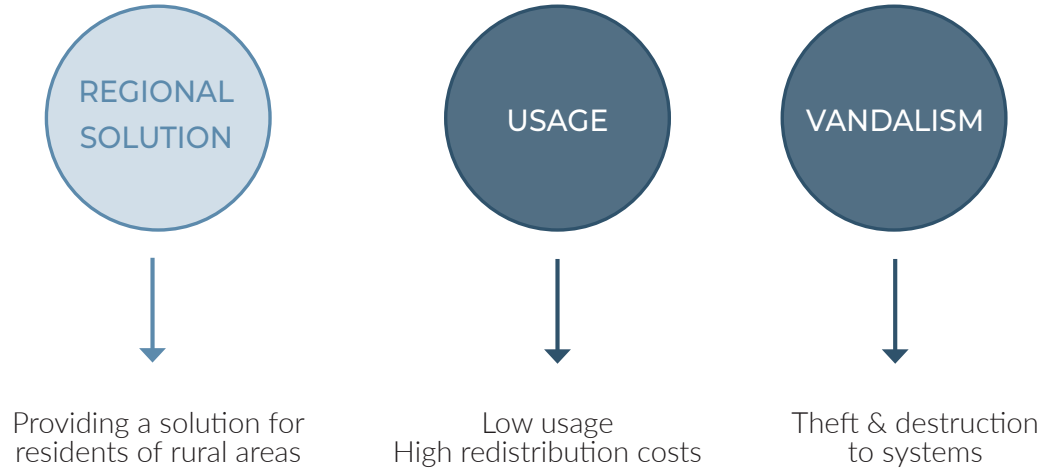


SHARED MOBILITY SERVICES



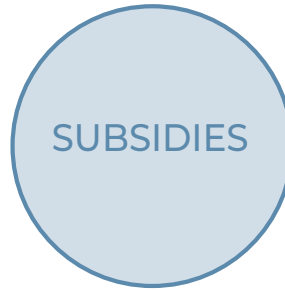
SHARED MOBILITY SERVICES

SERVICE AREAS IN ROTTERDAM-SOUTH

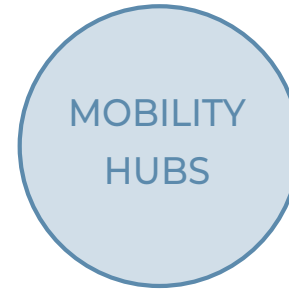


SHARED MOBILITY SERVICES

ENLARGING THE SERVICES AREAS



Economical risks



Located at strategic main
streets and subway stations

Counter vandalism

SHARED MOBILITY SERVICES

SHARED MOBILITY SERVICES IN TARWEWIJK

	FACTORS SERVICE PROVIDERS					
	Density	Usage	Target group	Income	Vandalism	Interest areas
TARWEWIJK	✓	✗	✓	✗	=	✗

✓ Present = Equal ✗ Absent

PART 2:

SHARED MOBILITY SERVICES & URBAN RENEWAL

URBAN RENEWAL

URBAN RENEWAL AND SHARED MOBILITY



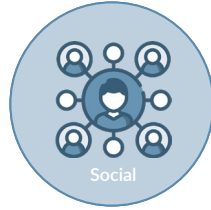
Results interviews:

- Not adding any economic value
- Service providers can withdraw from certain neighbourhoods
- Services are only used by a specific target group, this will remain something for a niche

Tarwewijk:

- The potential effect of shared mobility services on economical renewal in Tarwewijk and other disadvantaged neighbourhoods is minimal.

URBAN RENEWAL



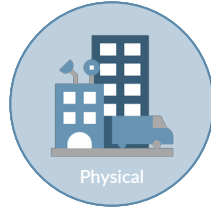
Results interviews:

- Reclaim public space and street space for community activity.
- Active forms of shared mobility have health benefits
- More flexibility and freedom of choice for transport modes.
- Positively affect the happiness of users
- Counter transport poverty in the neighbourhoods of Rotterdam

Tarwewijk:

- Improve the social cohesion and participation of the inhabitants into society
- Contributes positively to decrease transport poverty
- Contribute to improving the isolated location of Tarwewijk
- Connect and access the nearby neighbourhoods.
- More active mobility as walking and cycling within the neighbourhood.

URBAN RENEWAL



Results interviews:

- No direct response to the effects of shared mobility on the aspects of physical aspects of urban renewal

Tarwewijk:

- Shared mobility services can be an option to connect Tarwewijk again to the nearby neighbourhoods.
- Shared mobility may be used to improve the accessibility for people from outside to the neighbourhood, by solving the last mile problem

URBAN RENEWAL



Results interviews

- Low-traffic streets or more people-oriented streets
- A neighbourhood can be made not only more social but also more green and liveable streets
- Shared mobility can lead to more cleaner and quieter neighbourhoods.

Tarwewijk:

- Increase the amount of public green spaces, and hereby improve the livability of the neighbourhood.

A bicycle with an orange basket and fenders is parked in front of a wooden door with a decorative metal grille. The image is overlaid with a dark blue semi-transparent filter.

06

SYNTHESIS

SYNTHESIS

ADVICE

- Granting governmental subsidies to service providers
- Provide shared mobility services in the form of mobility hubs
- Introduction of dynamic pricing for all shared mobility services
- Granting subsidies for low-income persons
- Public parties should reach disadvantaged neighbourhoods in a tailored way



07

CONCLUSION, DISCUSSION & RECOMMENDATIONS

CONCLUSION

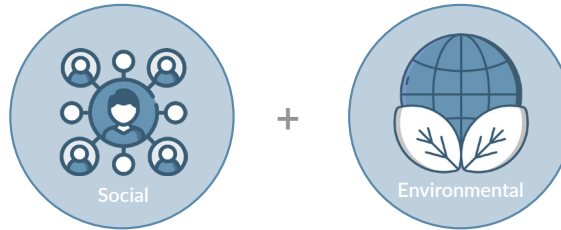
MAIN RESEARCH QUESTION

“In what way can public parties use shared mobility services to stimulate urban neighbourhood renewal in Rotterdam-South?”

CONCLUSION

CONCLUSION

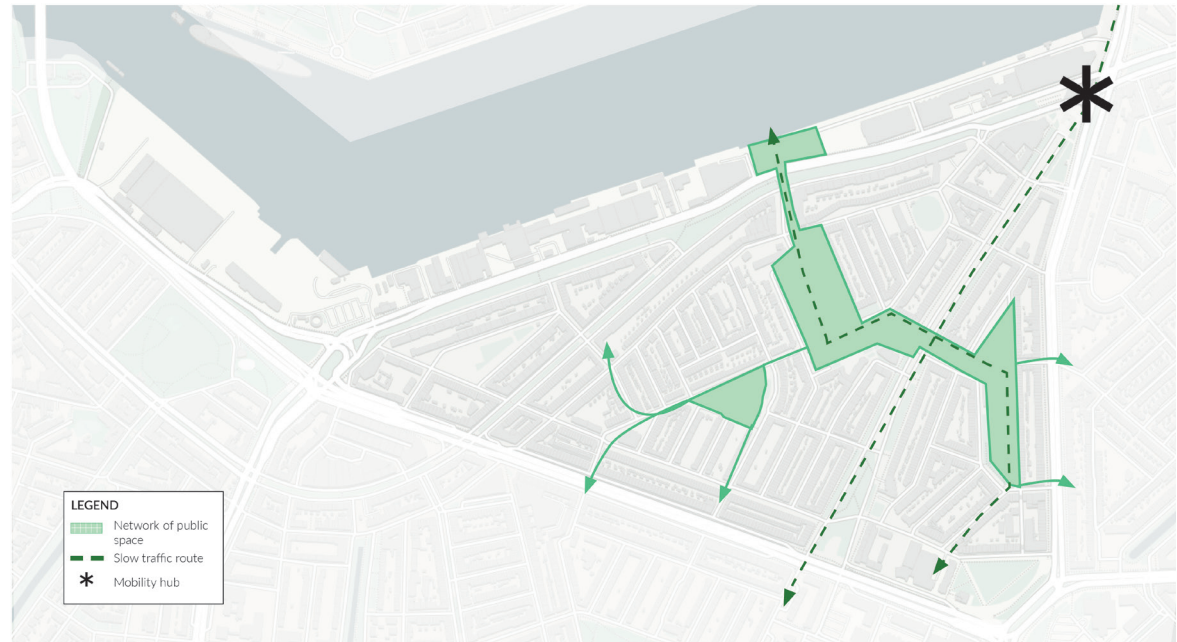
- Urban renewal is about improving and upgrading the economic, social, physical and environmental conditions of a neighbourhood.
- Public parties can positively affect and stimulate:



- Ensure that the barriers to using these shared mobilities are eliminated.

DISCUSSION

VISION BASED ON RESEARCH RESULTS



Vision slow traffic route and network of public space (own illustration)

DISCUSSION

DISCUSSION

Urban renewal

- The four aspects of urban renewal have interrelationships, which were disregarded in the study
- When examining the effects of shared mobility services on urban renewal, the other aspects of urban renewal must remain stable
- The political aspects need to be added to the other four aspects of urban renewal.

Shared mobility services

- This research has assumed that service providers will operate again in Rotterdam-South in the future.
- The perspective of the inhabitants of disadvantaged neighbourhoods are not obtained.
- Other forms of shared mobility could give other results.

RECOMMENDATIONS

RECOMMENDATIONS

For practice

- A more tailored approach for the implementation of services.
- Subsidies for service providers and users.
- Mobility hubs in disadvantaged neighbourhoods.
- Test the system of dynamic pricing.

For further research

- Broaden the research by adding the perspective of users and non-users is necessary to understand their perceptions of shared mobilities.
- Conduct research in practice (pilot) to examine the impact of subsidies on the actual usage of services by low-income people.
- Conduct research on how mobility hubs should be organised and where they should be placed within a disadvantaged neighbourhood.

A dark blue silhouette of a city skyline is positioned at the top of the slide, spanning most of its width. The skyline consists of various rectangular and trapezoidal shapes of different heights, representing buildings. The background is a solid, medium blue color.

THANK YOU FOR YOUR ATTENTION.

ANY QUESTIONS?