Focus session

B1: Mobility hubs for intermodality

9.00–10.30

TRAFICOM Finnish Transport and Communications Agency

eParking.fi

SITOWISE The Smart City Company

Regional Council of Southwest Finland

Evolution of Madrid Bike-Sharing System BiciMAD and impacts on mobility patterns

Andrés Monzón
Raky Julio

ECOMM TURKU 2022
EUROPEAN CONFERENCE ON MOBILITY MANAGEMENT
31/5 – 2/6

INTRODUCTION - BiciMAD

- **BiciMAD** is Madrid's public bike-sharing system (**BSS**)
- It was **introduced** in mid **2014**

EMT MADRID
BiciMAD

- **4th Generation** BSS
- **SoA technology**
  - 1st Fully E-bikes
  - GPS tracked
  - Solar powered stations
  - Self-balance system

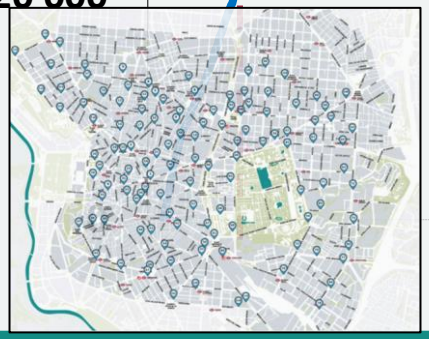
INTRODUCTION - MILESTONES

2014
Central districts
123 stations
1560 bikes

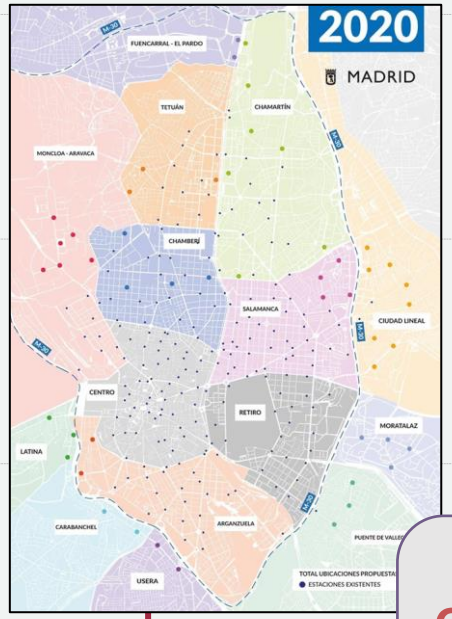
2016
Municipalization

2019
Maturity

80 000
60 000
40 000
20 000



2014-2016
Sustained
expansions

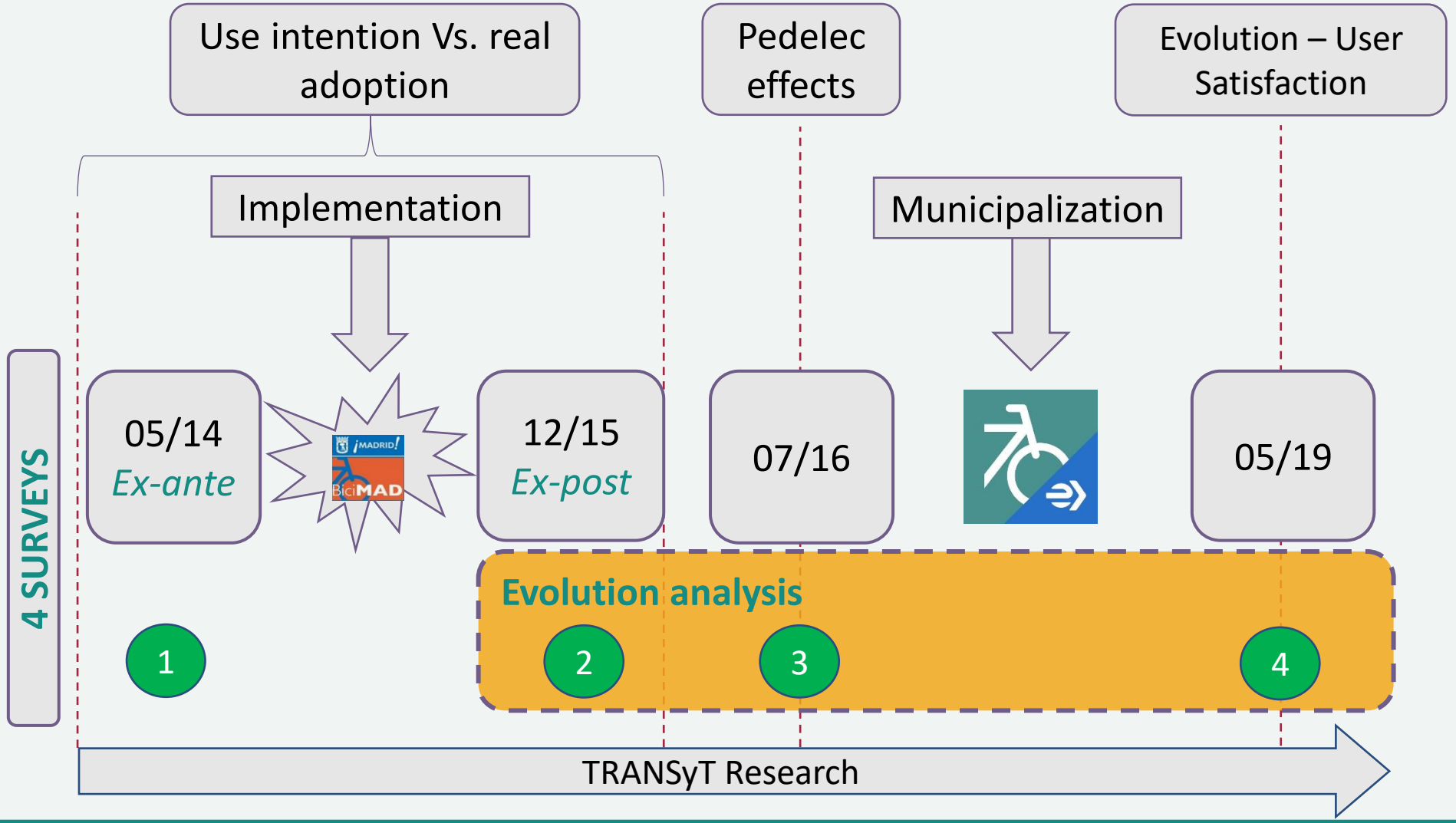


2020
COVID 19
Lockdown
release
20k new users

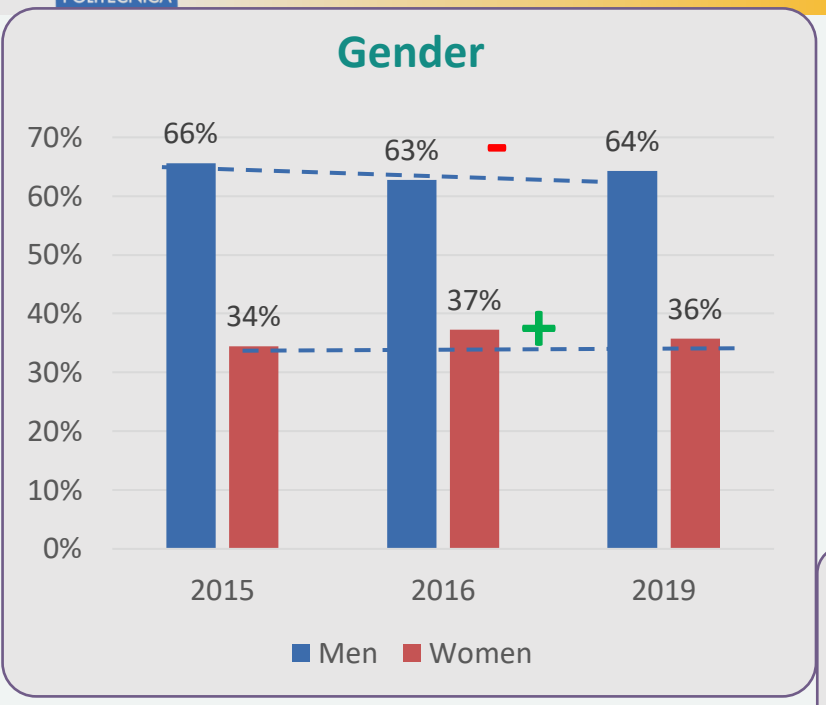
2020
Outside M30
264 stations
3000 bikes

TOTAL Subscribers

RESEARCH BACKGROUND

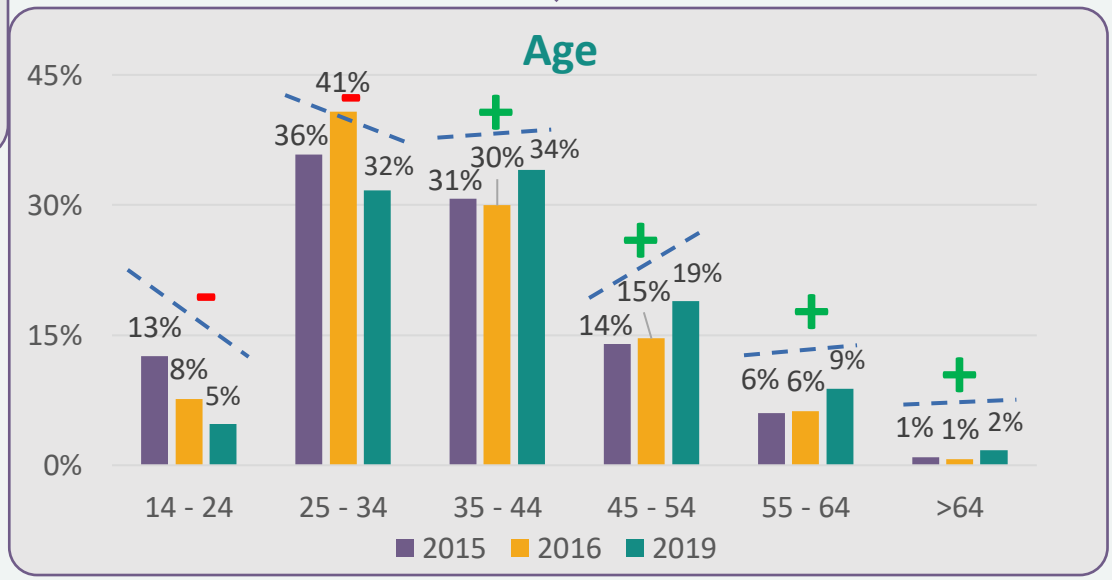


EVOLUTION OF THE USER PROFILE



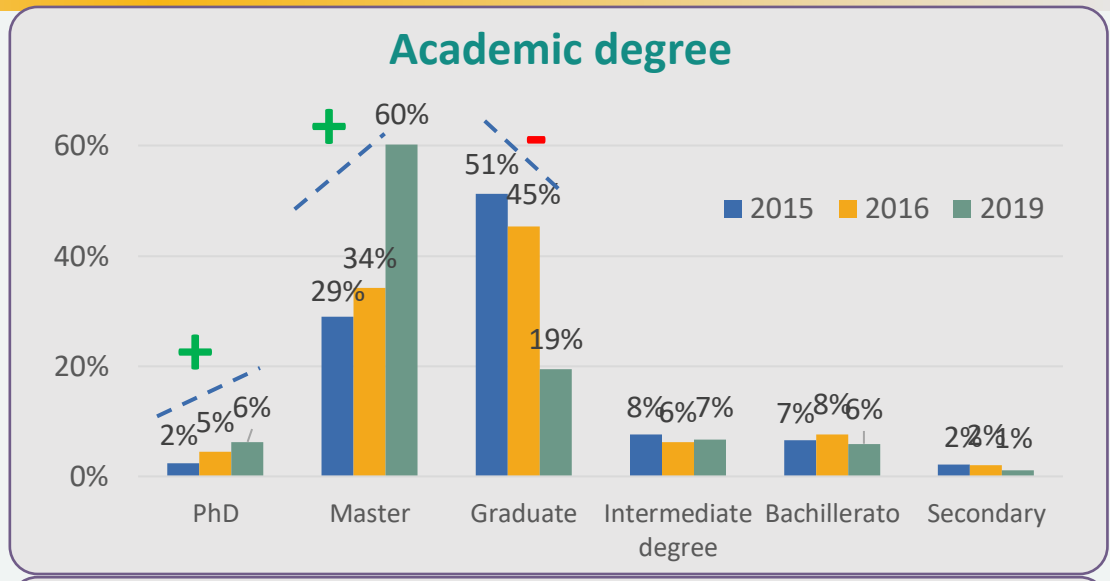
- **Gender:** Barely changed. Big gap (65% **M** - 35% **W**)

- **Age:** Reduction of young, increase of middle aged

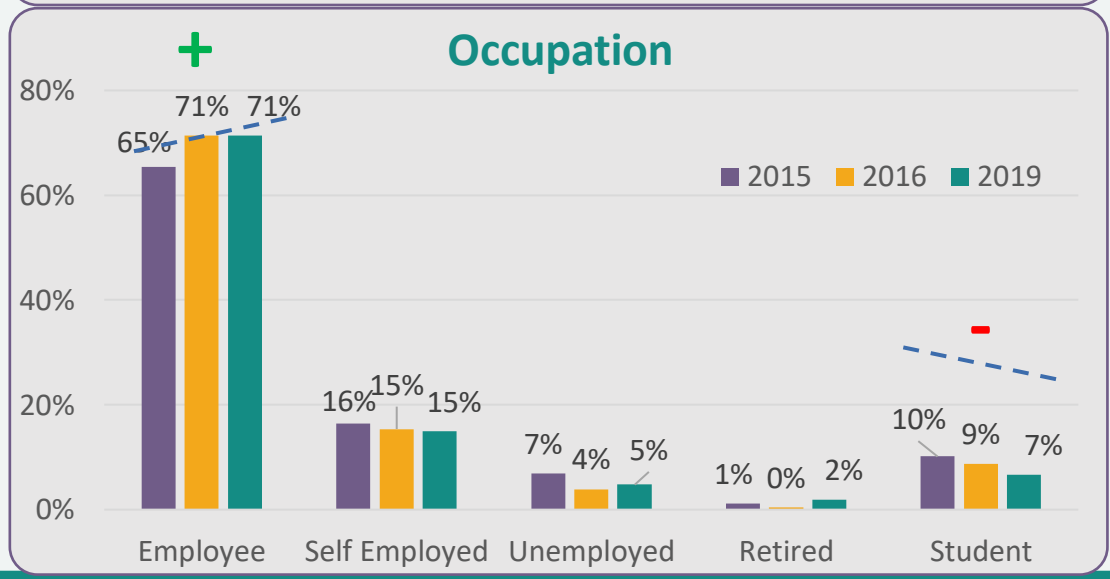


EVOLUTION OF THE USER PROFILE

- Users are becoming **more educated**



- Transitions from **students to workers**



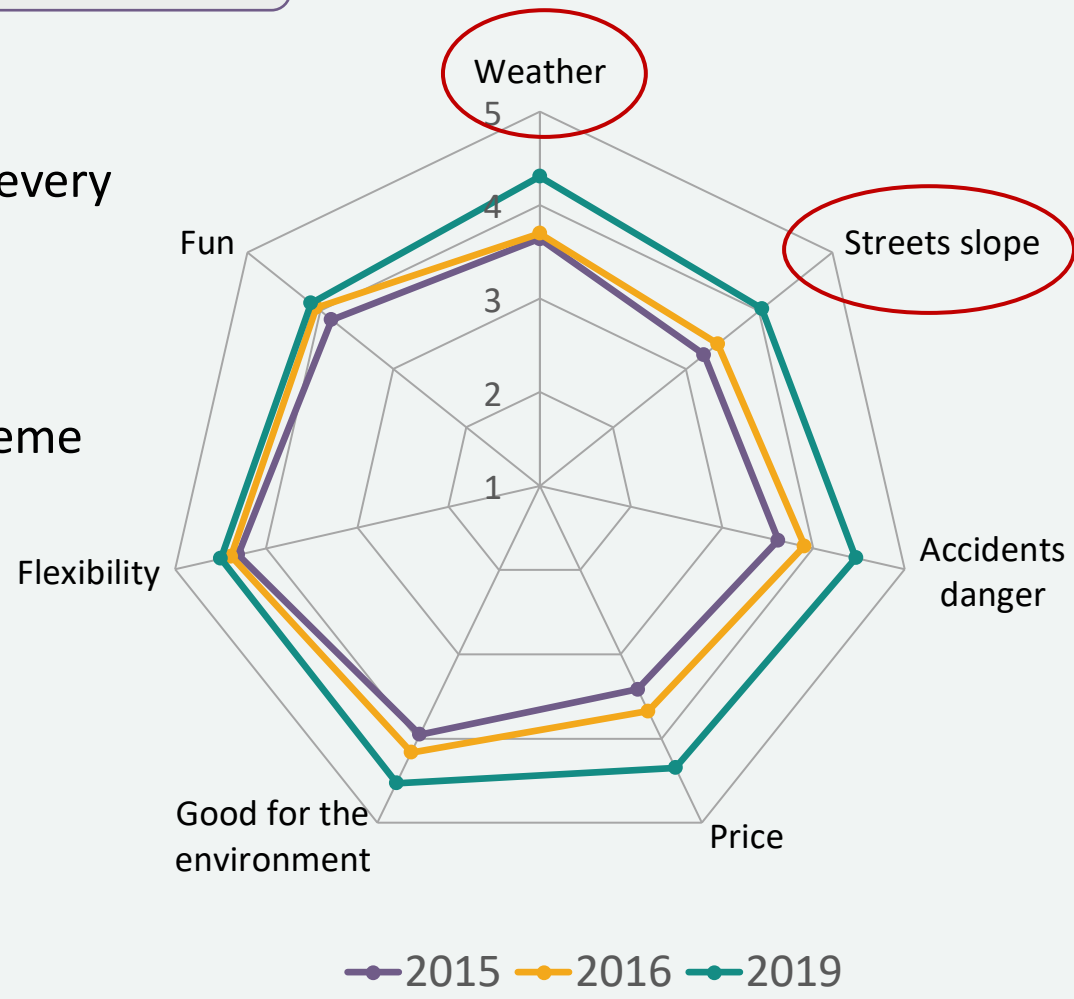
EVOLUTION OF FACTORS PERCEPTION

KEYS TO OVERCOME DETERRENT FACTORS

- **Street slopes**: Lowest importance every year, albeit up to 200 m elevation.
  KEY ⟶ **pedelec**

- **Weather**: BSS are sensitive to extreme weather. Madrid:
  cold winters
  warm summers

  KEY ⟶ **pedelec**

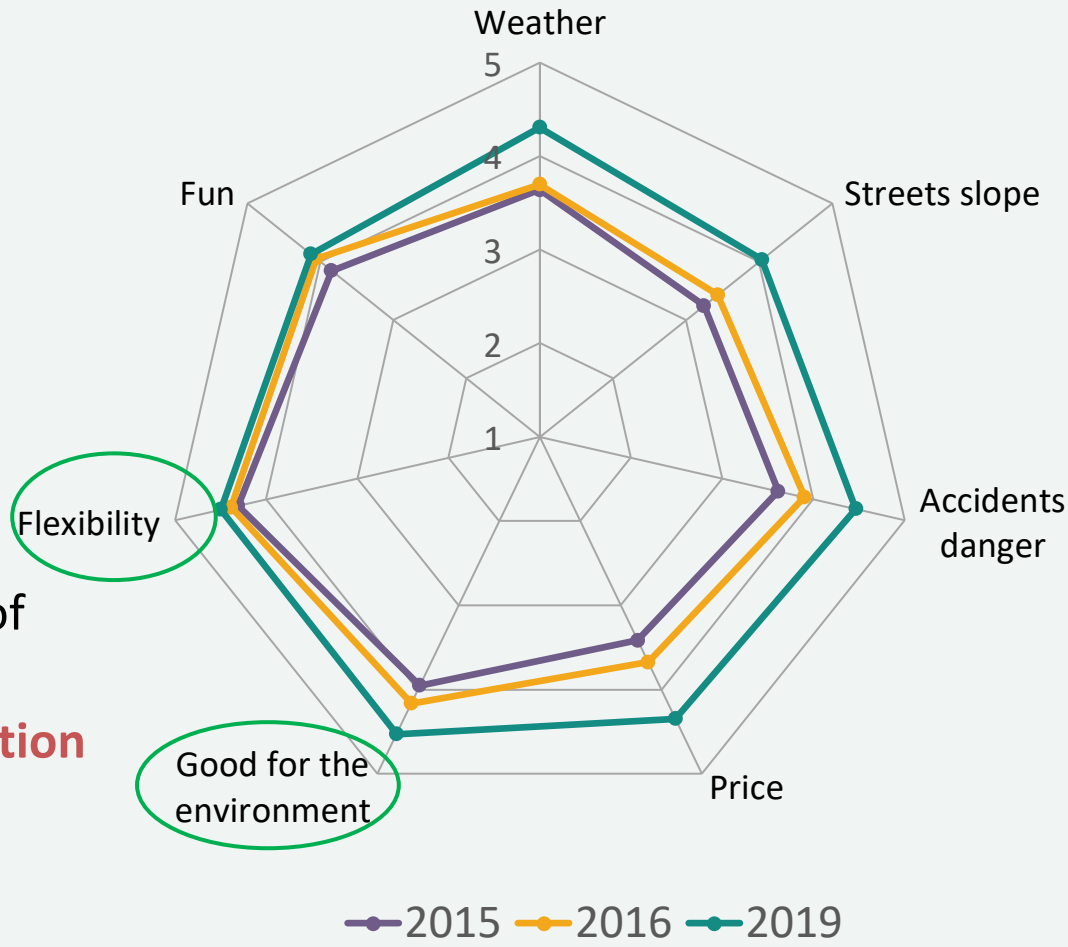


EVOLUTION OF FACTORS PERCEPTION

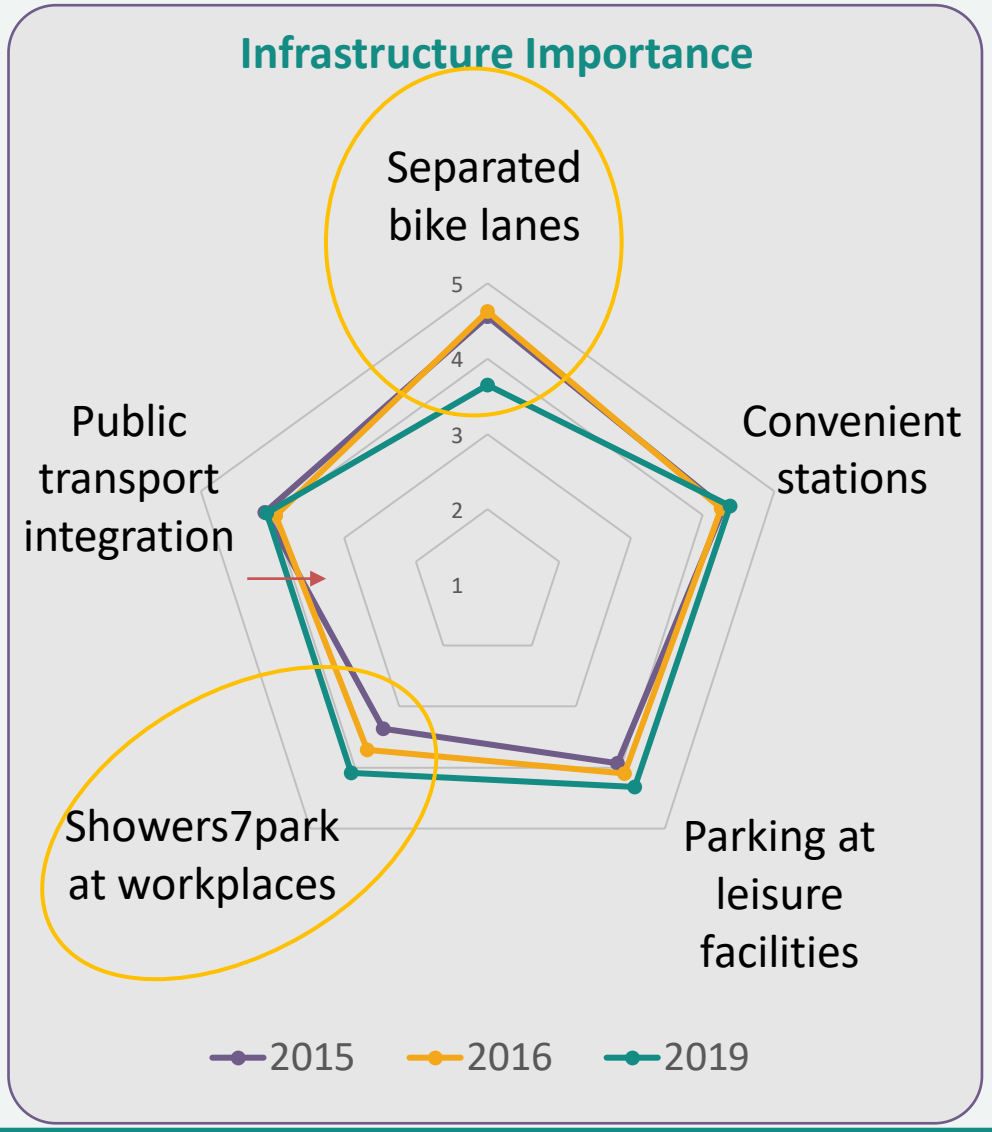
KEYS FOSTERING FACTORS

- **Flexibility:** No need for storage, parking, maintenance, 24/7, etc.
  KEY → **convenience, dense system**

- **Good x Environment:** Awareness of the environmental issues
  KEY → **Active mobility promotion**

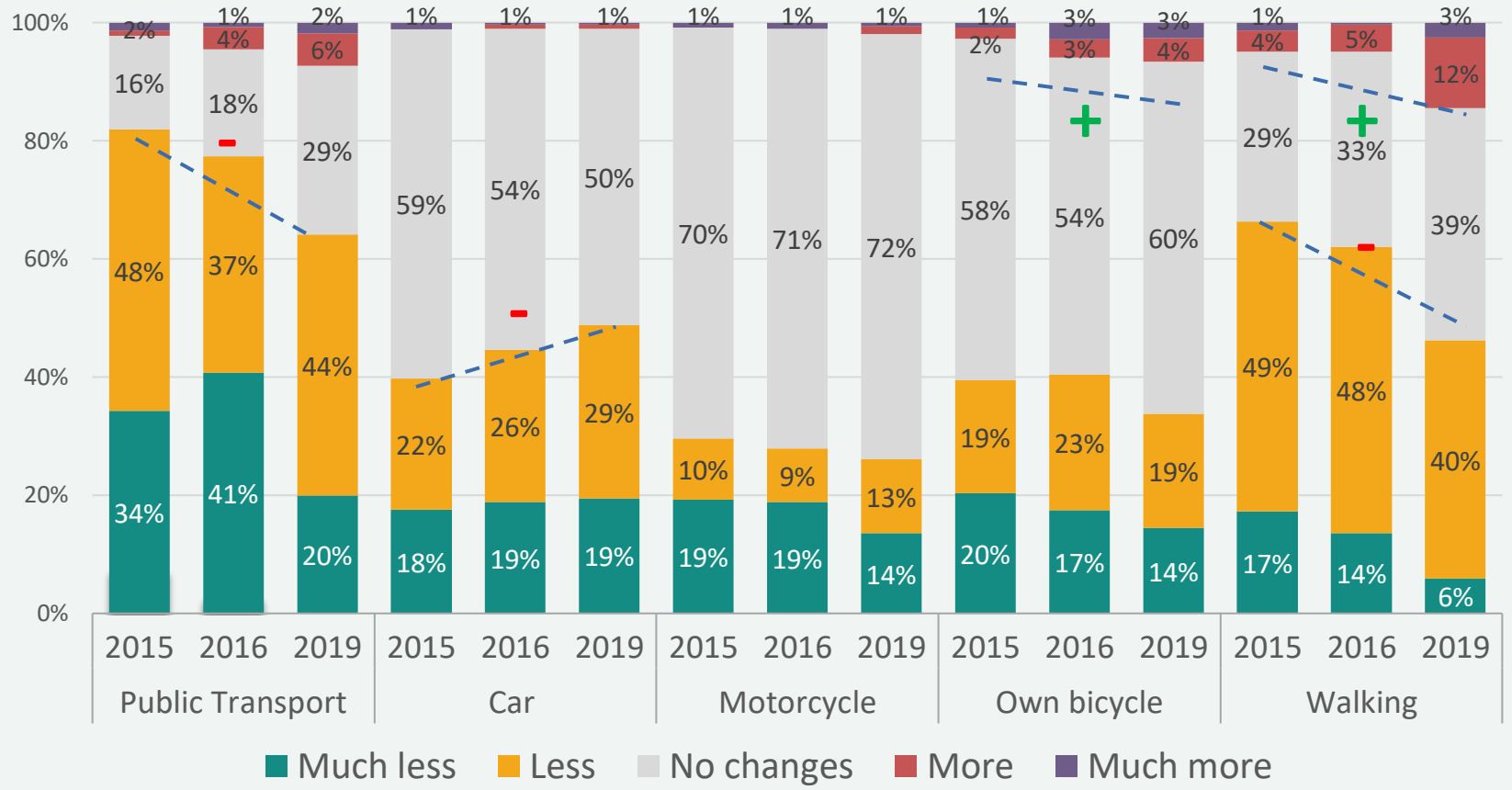


EVOLUTION OF INFRASTRUCTURE



- **Segregated bike lanes** lose importance
  KEY → **Familiarity**
- **Showers at workplaces** gain importance
  KEY → **Change of user profile**

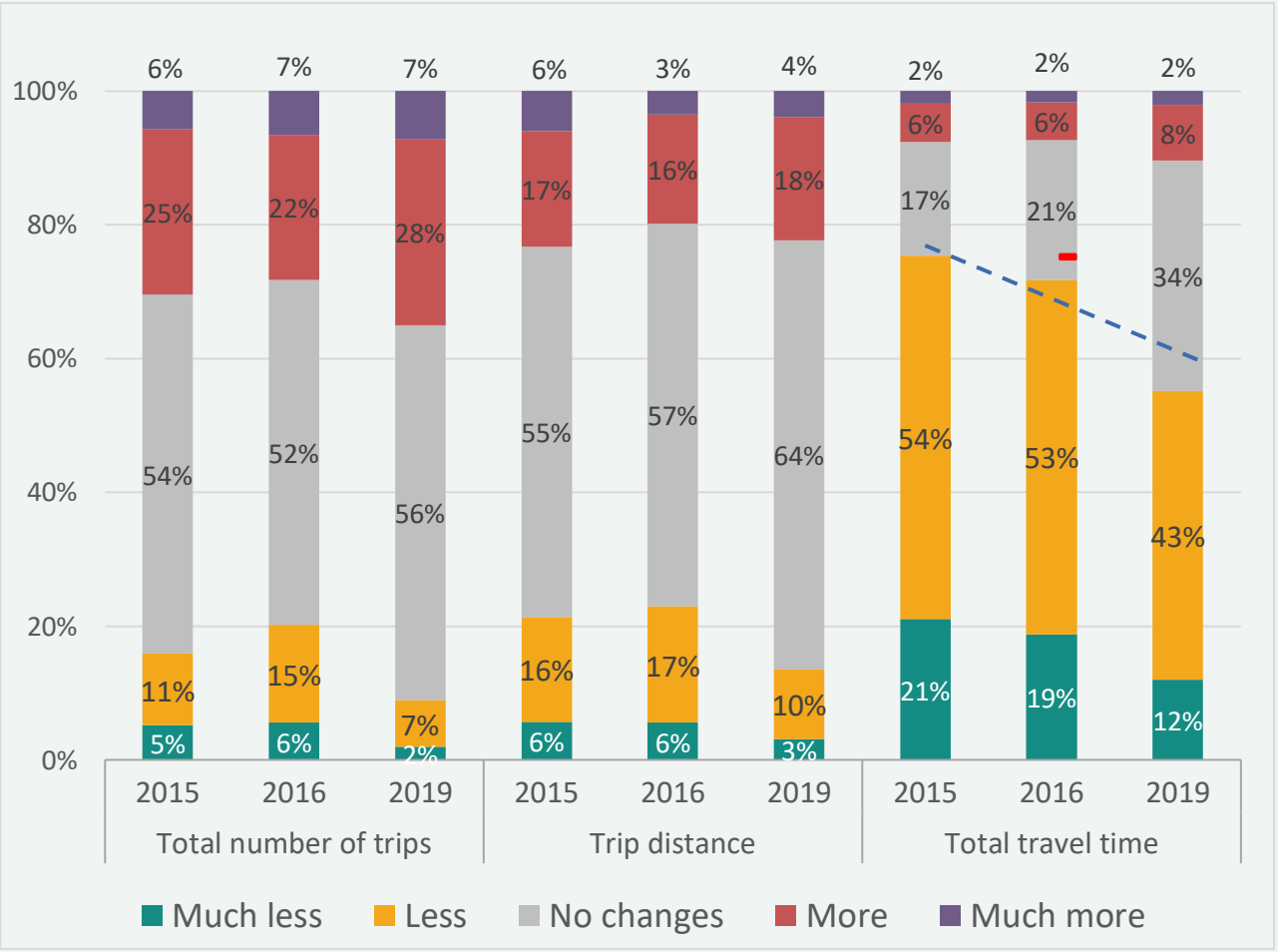
BICIMAD POSITIVE EFFECTS



- **Less leave** the **public transport**
- **More leave** their **cars**

- **More use** more their **own bikes**
- **More walk** more (and **less walk less**)

CHANGES IN TRAVEL PATTERNS



- **Reduction of travel time**

Within short distances in dense urban environments, **cycling is competitive with PT and cars**

CONCLUSIONS

NOVELTY: The **analysis of the evolution of the first ebike-sharing system**, and the **effects on mobility patterns**.

TRANSFERABILITY: **Experience managing an e-bike system**, due to the **change** in the paradigm, turning **from ordinary to partially or fully electric bikes.**

OUTCOMES AND CONCLUSIONS

- **Electric BSS are potential triggers for bicycle adoption** in dense urban environments.
- **Users reduce their own car usage.**
- The user profile evolves to **young male adults, well educated commuters concerned with the environment.**
- **Need** to concentrate efforts **to reduce the gender gap. Improve cycling infrastructure**, at least during the first stages of cycling adoption.

THANK YOU

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HOW DO MOBILITY SOLUTIONS AFFECT CAR DEPENDENCE IN NEW HOUSING DEVELOPMENTS?

ECOMM, 2022-06-01

Financed by Vinnova, research call *Changing travel behaviour*, step 1

MOBILITY SOLUTIONS

Place specific package of services

Decreased demand on car parking

Implemented in several Swedish municipalities

Offers a wider range of mobility than just parking

BACKGROUND

Lack of knowledge

Policies and guidelines are based on incomplete data

”No complete research on how mobility solutions will affect our travel behaviour.” (**Boverket**)

”We are in the middle of a learning phase and our knowledge needs to increase.” (**Fastighetsägarna**)

AIM

To develop and test a generalisable model to evaluate the effects of mobility solutions in new housing developments

METHOD

1. Data gathering

- Occupancy rate of parking
- Degree of use of mobility solutions
- Semi structured interviews
- Previous research

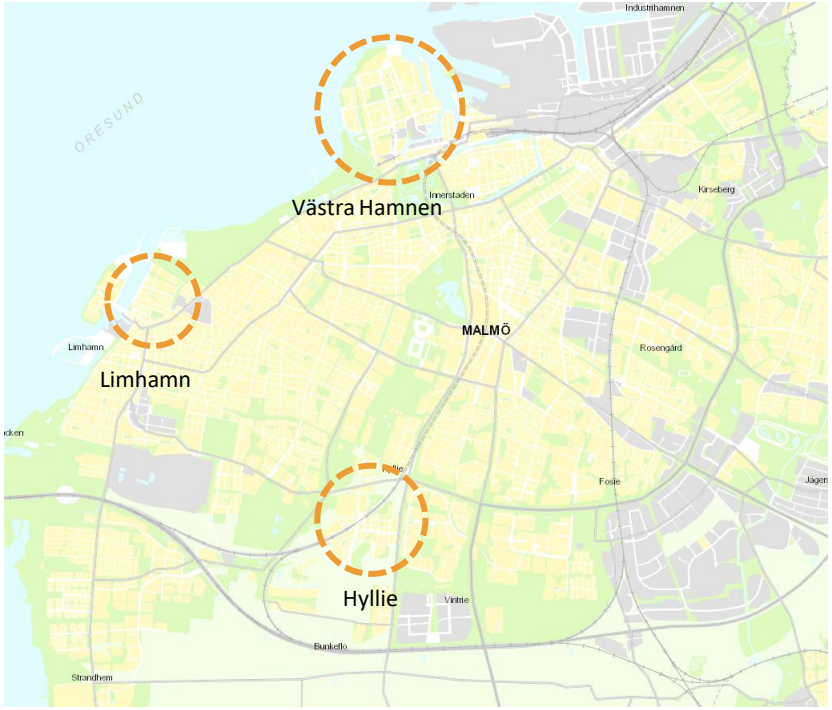
2. Methodological tools

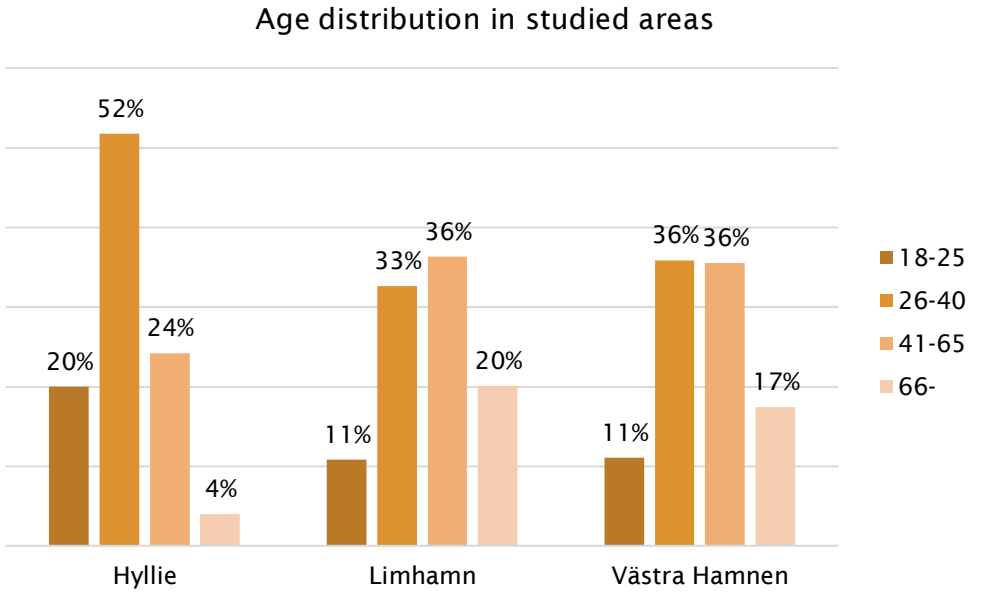
- Modelling
- Analysis
- MER-analys

3. Effects

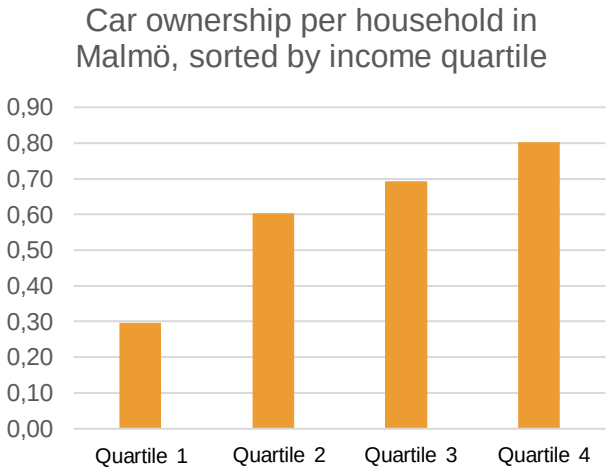
- Effects from solutions
- Effects at differents places
- Effects on different demographical groups

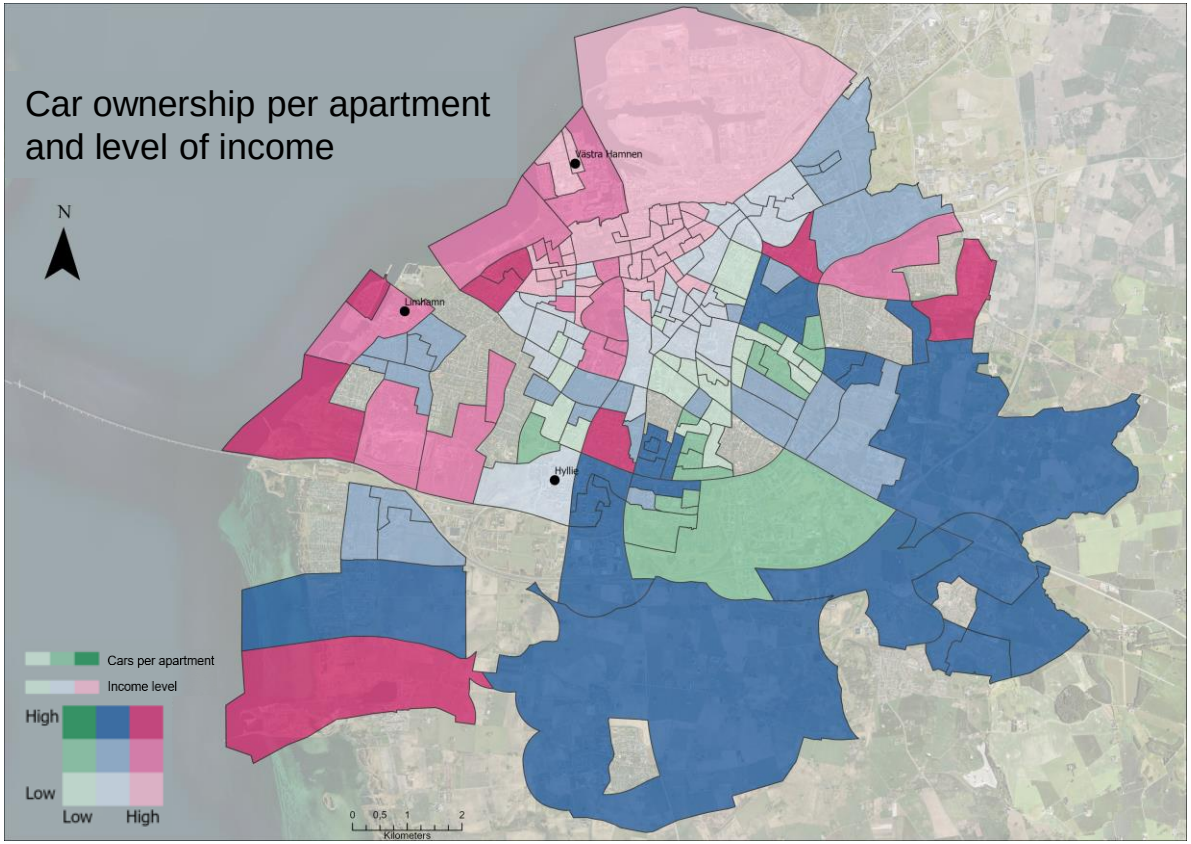
STUDIED AREAS



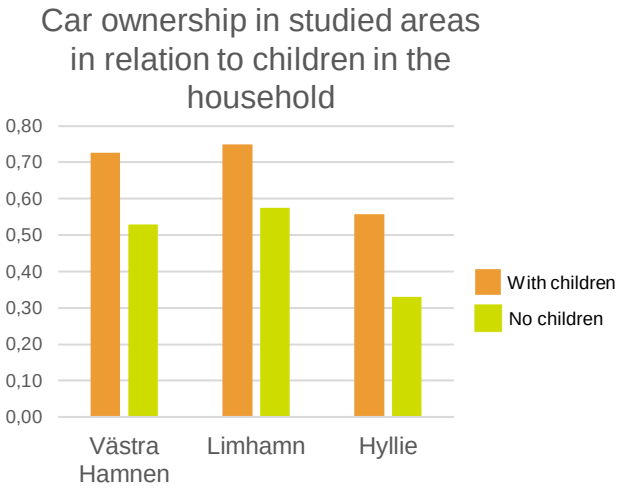


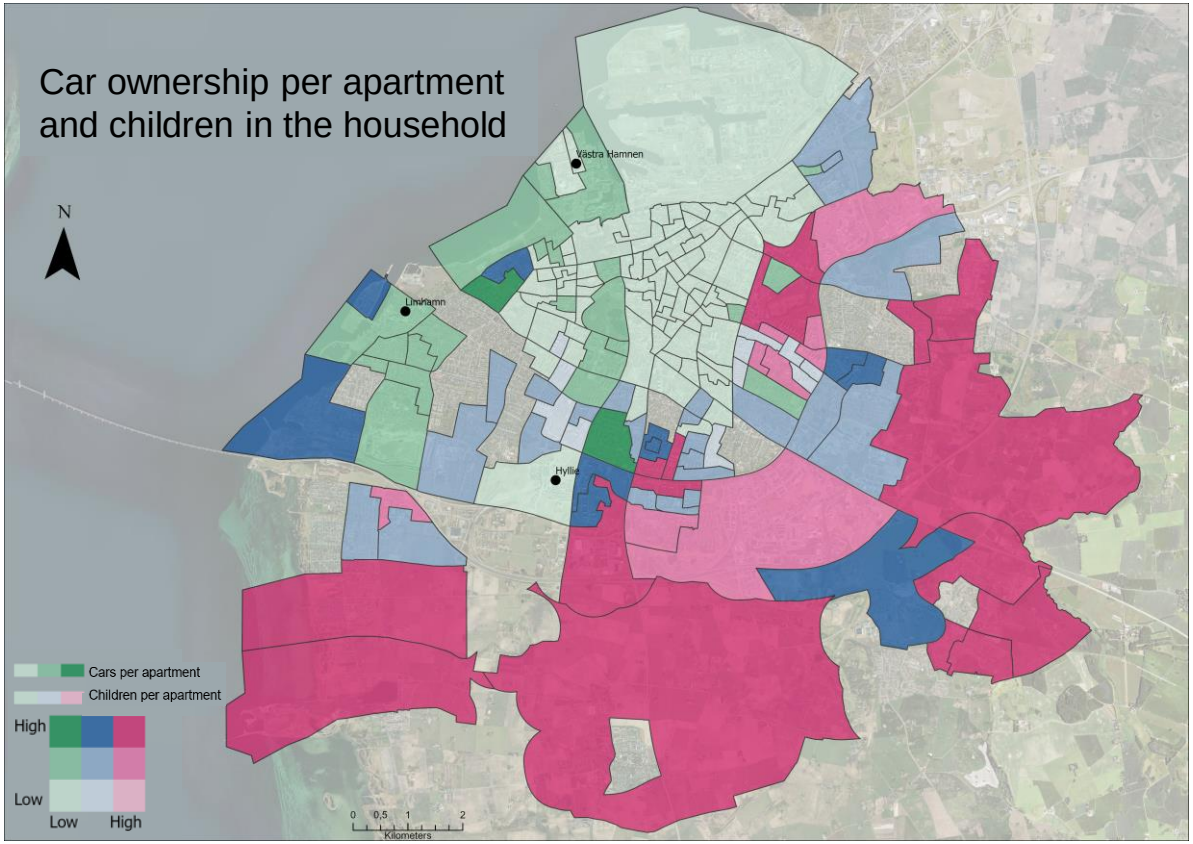
CAR OWNERSHIP AND INCOME



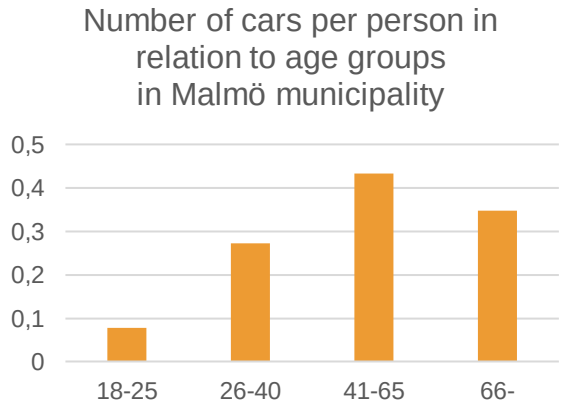


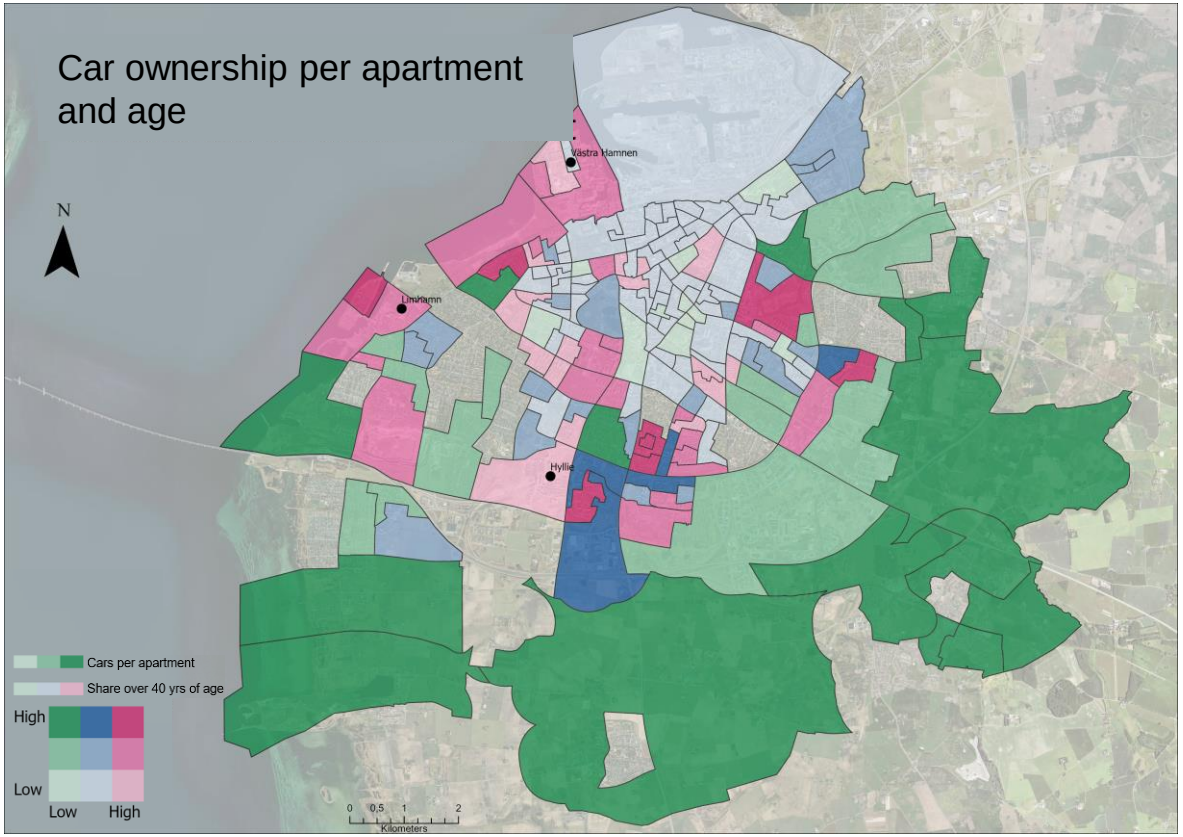
CAR OWNERSHIP PER HOUSEHOLD IN RELATION TO NUMBER OF CHILDREN



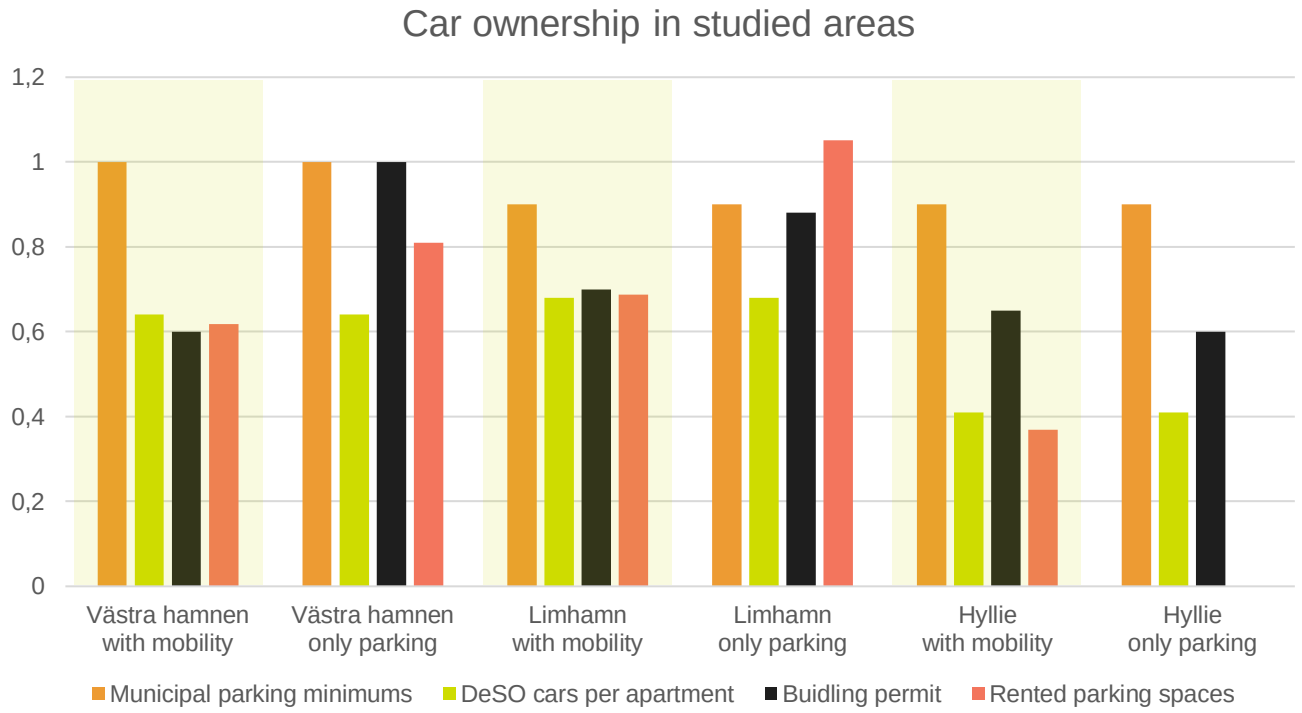


CAR OWNERSHIP AND AGE





CAR OWNERSHIP



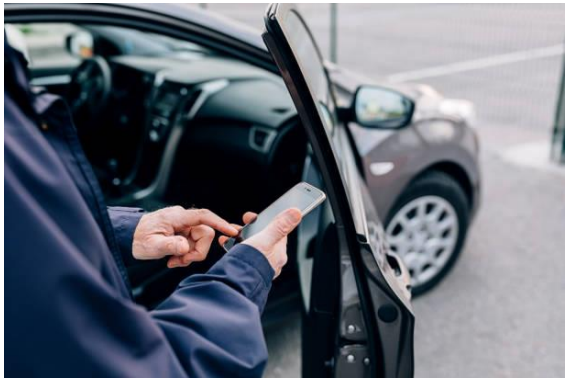
PERSONAS

PERSONAS

Persona	Age	Gender	Marital status	Children	Car
The Ferguson Family	25-35	Both	Sambo/gift	Yes/No	Yes
Balancing Bianca	30-45	Female	Sambo/gift	Yes	Yes
Car-Chris	41-50	Male	Both	Yes	Yes
Habitual Hugo	51-75	Both	Both	No	Yes
Environmental Elsa	51-75	Both	Both	No	Yes
Efficient Erin	25-40	Both	Single	No	No
Healthy Husseins	25-45	Both	Sambo/gift	Yes	No
Transforming Thea	30-45	Female	Single	Yes	No
Assured Alex	35-50	Male	Sambo/gift	No	No
Stress free Sylvie	> 75	Both	Both	No	No

CAR CLUB / CARSHARING

- Problems with accessing user data from mobility provider
- Interviewees expressed dissatisfaction with existing car club – pricing and accessibility
- Test and measure effects of an expanded car club with more vehicles



INFORMATION OCH COMMUNICATION

- Residents lack info on mobility solutions – need for recurring communication
- Important to reach new residents
- Lack of specified demands from municipalities in most parts of Sweden
- Communication is extra crucial for certain demographic groups

CAR-FREE VS CAR-LESS!

- One group is voluntarily car-free
- Another group is involuntarily car-less

Income quartile 4 owns more than 150% more cars than income quartile 1

CONCLUSIONS

- A few months long study – to short time period
- Effects can be hinted – but to early in the development of the methodology to find conclusive results
- Effects from mobility solutions in studied areas:
  - Västra hamnen – 25% lower parking demand
  - Limhamn – 35% lower parking demand
- Car demand = rented parking spaces
- Necessary to study more real estates in different areas

- Strong statistical correlation between age and car ownership
- Many elderly continue to own car despite little usage
- Certain personas have a high potential regarding lower car ownership
- Increased information and communication
- Design of car clubs

Mobility solutions for lower income groups does not necessarily lead to fewer trips with cars, but it can provide an increased mobility and therefore reduce transport poverty.

CONTACT

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TYRÉNS

Urban Mobility Hubs

Implementing neighborhood orientated mobility hubs in densely populated areas

Michael Kaufmann (University of Wuppertal)
Thorsten Koska (Wuppertal Institut)

Source: Michael Kaufmann

mobilstationen im quartier

aided by
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Investitionen in Wachstum und Beschäftigung

1. The challenge

Source: Michael Kaufmann

aided by
EUROPEAN UNION
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Development Fund
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Investitionen in Wachstum
und Beschäftigung

Parking pressure in living quarters

- Area = 1,18 km²
  - 1700 parking cars
  - Only 1200 “legal” parking spaces
- The sidewalk is used to keep the street drivable
- Emergency vehicles and busses get stuck regularly
- 16 potential site candidates for mobility hubs

Source: Michael Kaufmann

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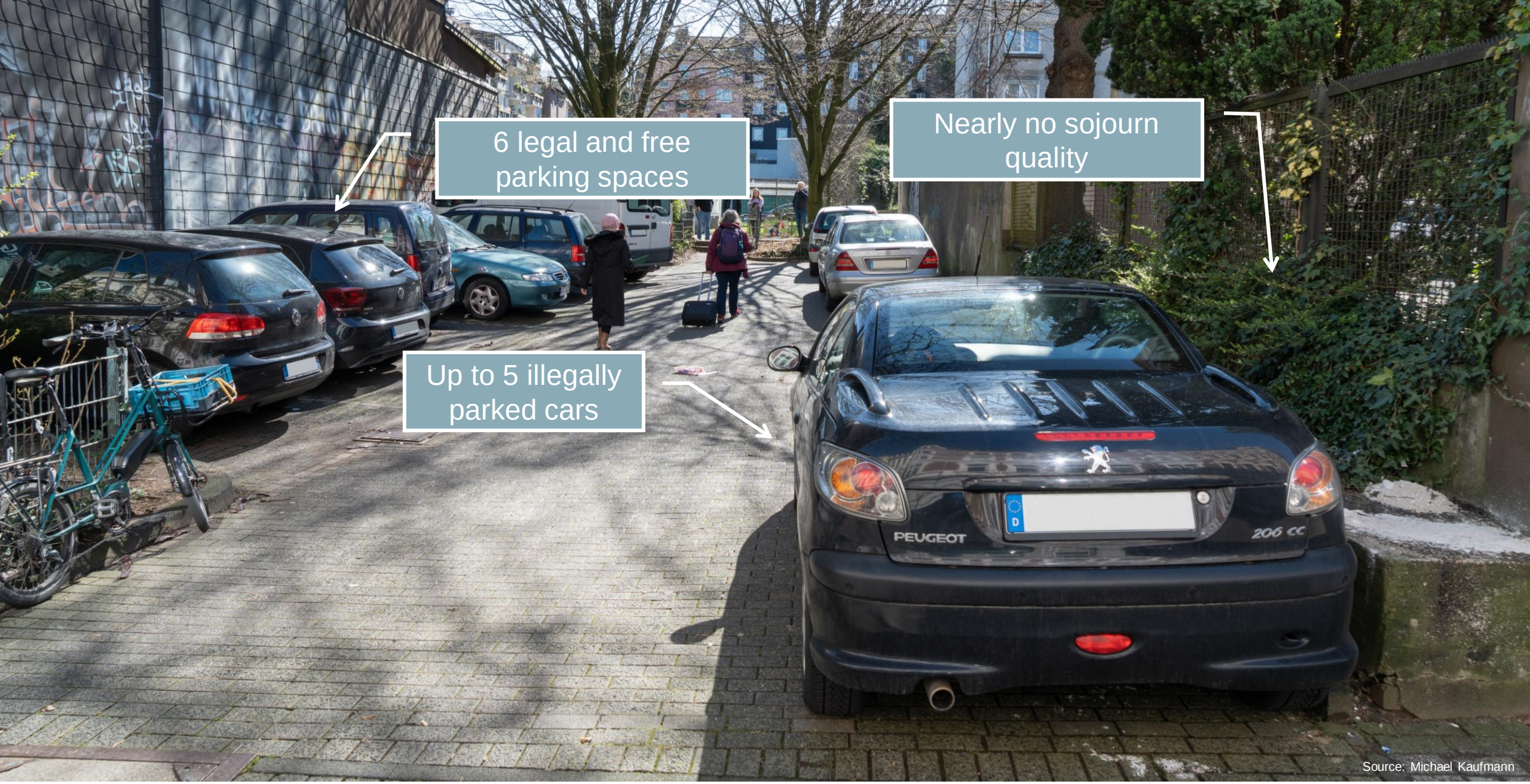

Source: Michael Kaufmann

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Private bike-garage for 12 normal bikes or e-bikes and 5-6 cargo bikes

6 public bike stands
3 cargo bike stands
Bike repair station

No illegal parking

Urban Gardening

3 Carsharing cars

Source: Michael Kaufmann

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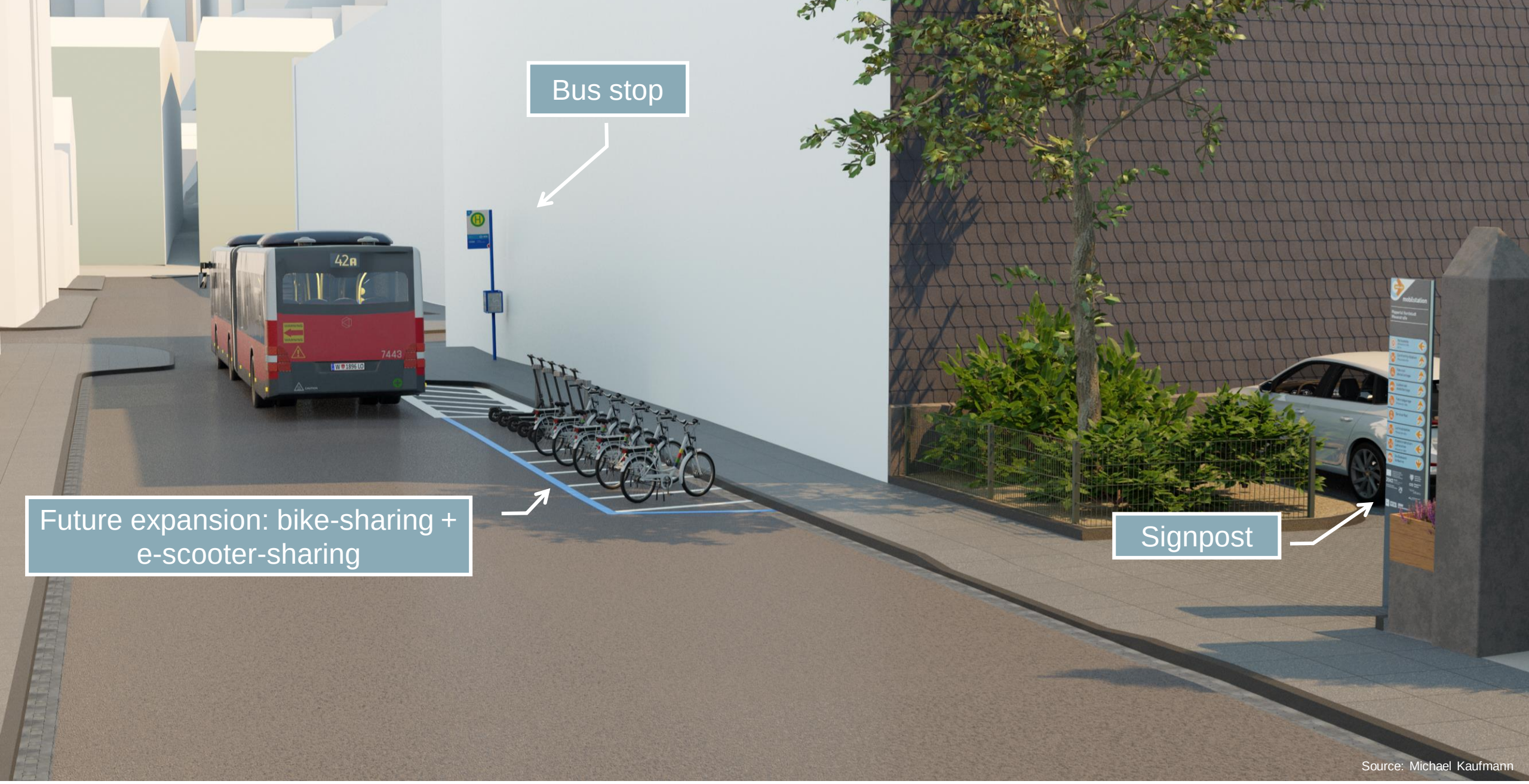

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2. Co-Production

Source: Michael Kaufmann

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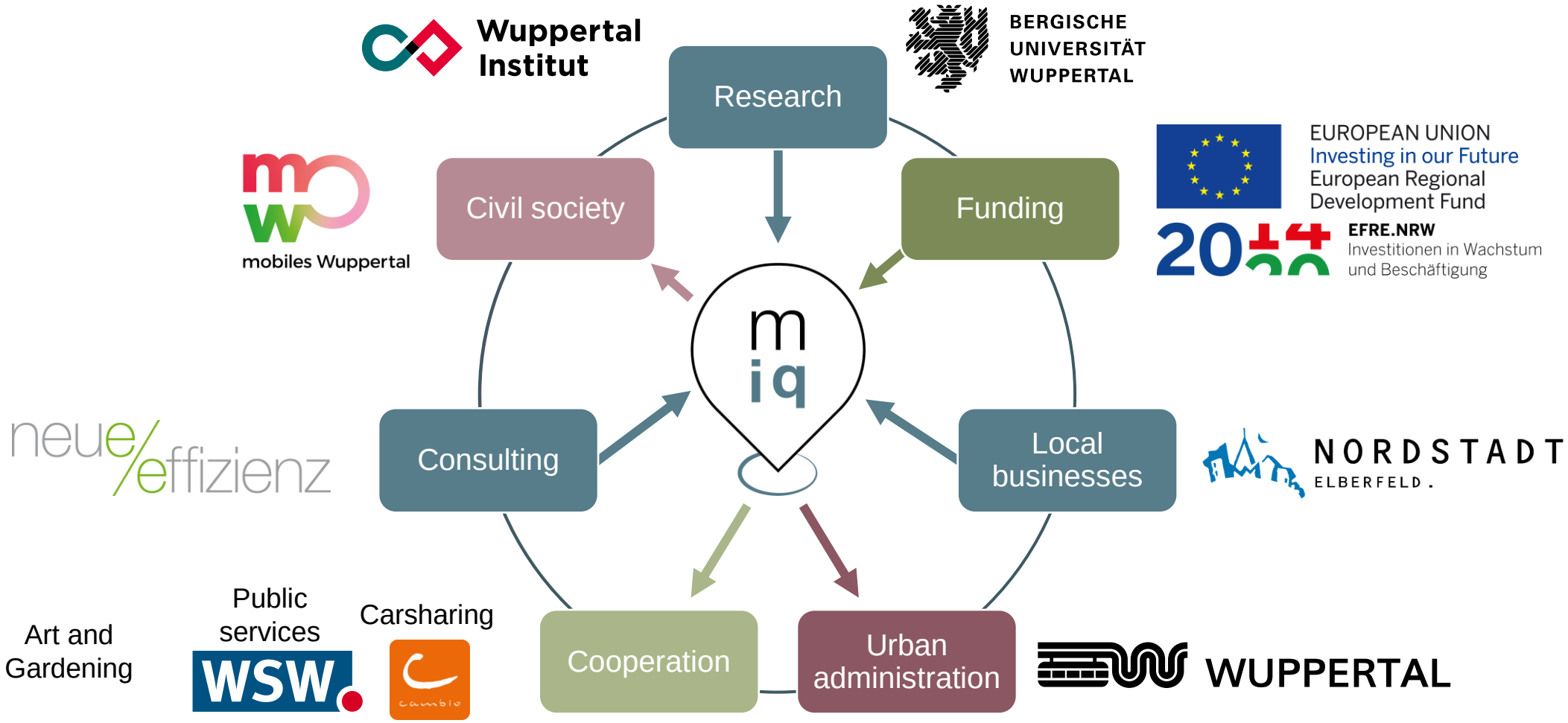
Co-production process



Public Participation

- 2 neighborhood conferences
- Discussion of upsides and downsides of 4 potential sites
- Desired features of the mobility hub
- Results:
  - Preferred site candidate = „Wiesenstraße“
  - High demand for cargo-bike parking
  - Prevent/reduce intimidating spaces
  - Urban Gardening
- Tomorrow (02.06.2022): neighborhood workshop


Source: Office 365 stock photo

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Investitionen in Wachstum und Beschäftigung

3. Scientific evaluation

Source: Christian Reimann

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Scientific evaluation and generalization

Aims

Process Monitoring
- Continuous monitoring of co-production processes
- Identification of drivers and barriers for successful implementation

District Monitoring
- Monitoring of external effects

Methods

Project Log
activities by project partners

Workshops
3 meetings with project stakeholders

Media Analysis
Local print and online media

Stakeholder Interviews
Local actors

Focus Groups
Mobility Hub Participants

Analysis

Continual improvement
Reintegration of results

Project learnings
relevant for upscaling

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Scientific evaluation and generalization

Aims

Impact Evaluation
- Use Patterns of Mobility Hub
- Acceptance of Mobilty Hub

Methods

User Survey
bike-station / car-sharing users, ex post

District Survey
online survey, citizen sample ex-ante / ex-post

In-Depth Interviews
users and non-users

Analysis

Impacts on Mobility Behaviour
Modal Shift, GHG-emissions

Potential Impact
of city-wide upscaling

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EFRE.NRW Investitionen in Wachstum und Beschäftigung

Conclusion

Source: Christian Reimann

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Conclusion

- Co-Production and involvement of the public
- Scientific evaluation to identify impacts, drivers and barriers
- Learnings for Upscaling: Preparing the roll-out of urban mobility-hubs across the city and beyond
- Making neighborhoods more livable

Source: Michael Kaufmann

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Challenge:
What will be the role of city owned bike share systems in the coming years?

ECOMM 1.6.2022

Anna Huttunen, Project Manager, City of Lahti
Mikko Raninen, Project Manager, Sweco

LAHTI

Lahti’s e-bike share system Mankelit

- Lahti has procured an e-bike share system with 250 bikes and 31 stations
- Contract period 2022-2027
  - Options: winter season, double fleet, 2 extra years
- A turnkey solution
  - City pays for the service and gets the ticket revenues
- Part of public transport

Photo: Mikko Raninen, Lahti

Changing the status quo?

- Micromobility companies are here
- City owned systems - the status quo
- A new rise of dockless bike sharing
- Question of a mobility management - what should cities think and do

Photo: Harri Vaarala, Oulu

Challenge 1.

What would be the benefits of private owned systems?

Go to menti.com
Password: **9022 9023**

Challenge 1.
What would be the **benefits of private owned** systems?

- Easy, no tendering process
- “Cheap option”
- Flexible fleet size (more users, more bikes)
- Competition -> constant need to develop the system

Challenge 2.

If we look from the city's perspective, what are the potential threats of a private owned bike share?

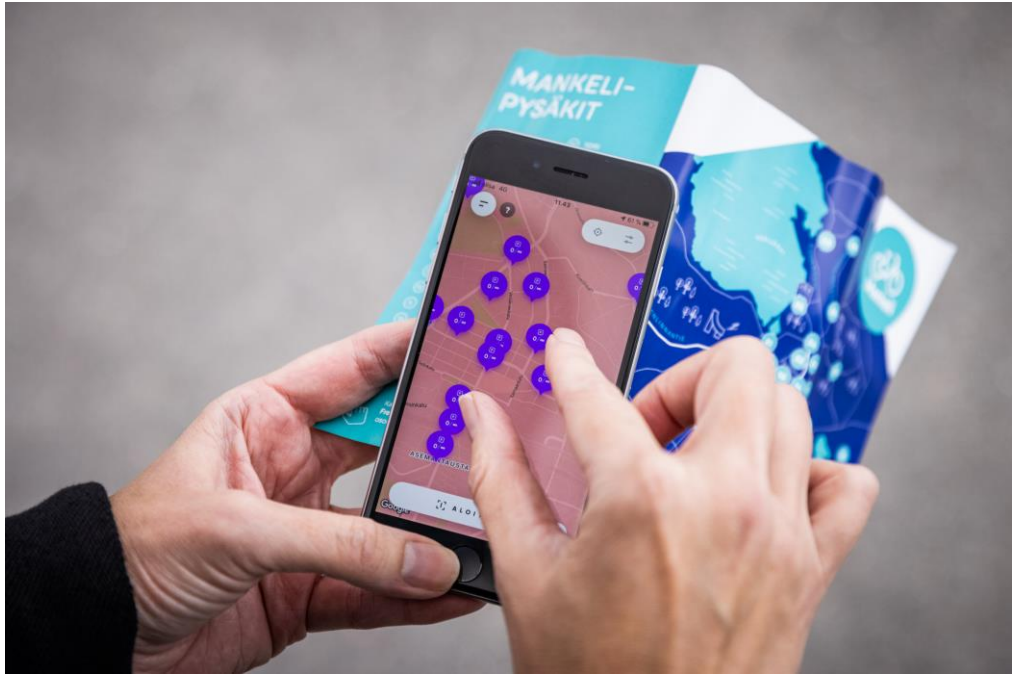
Go to menti.com
Password: **9300 7295**

Challenge 2.
If we look from the city's perspective, what are the potential threats of a private owned bike share systems?

- Social justice, equality: service area, pricing, PT travel chain
- Unpredictability & stability: cannot be foreseen, no binding contracts
- Lack of control: parking, season
- Consumes city's resources (non-visible costs)
  - constant discussion (stations, parking etc.)
  - the citizens complain to the city

Take away

- It doesn´t make sense to “fight” against
- The mission of the city is to serve its citizens equally
- New models of management and cooperation are needed



Thanks!

Mikko Raninen, Sweco, @Litenmikko
Anna Huttunen, City of Lahti, @HuttuNa

LAHTI

100 Climate Neutral Micro Hubs

ECOMM 2022 - Heike Bunte - Free and Hanseatic City of Hamburg - District of Altona

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953939

Why (only) 100? We need 200 …

- Transformation of Public Space
- Change of Mobility & Transport (Behaviour)
- Focus on Active Mobility / Public Transport / Livable Places
- Climate (Action) Plans (climate targets)

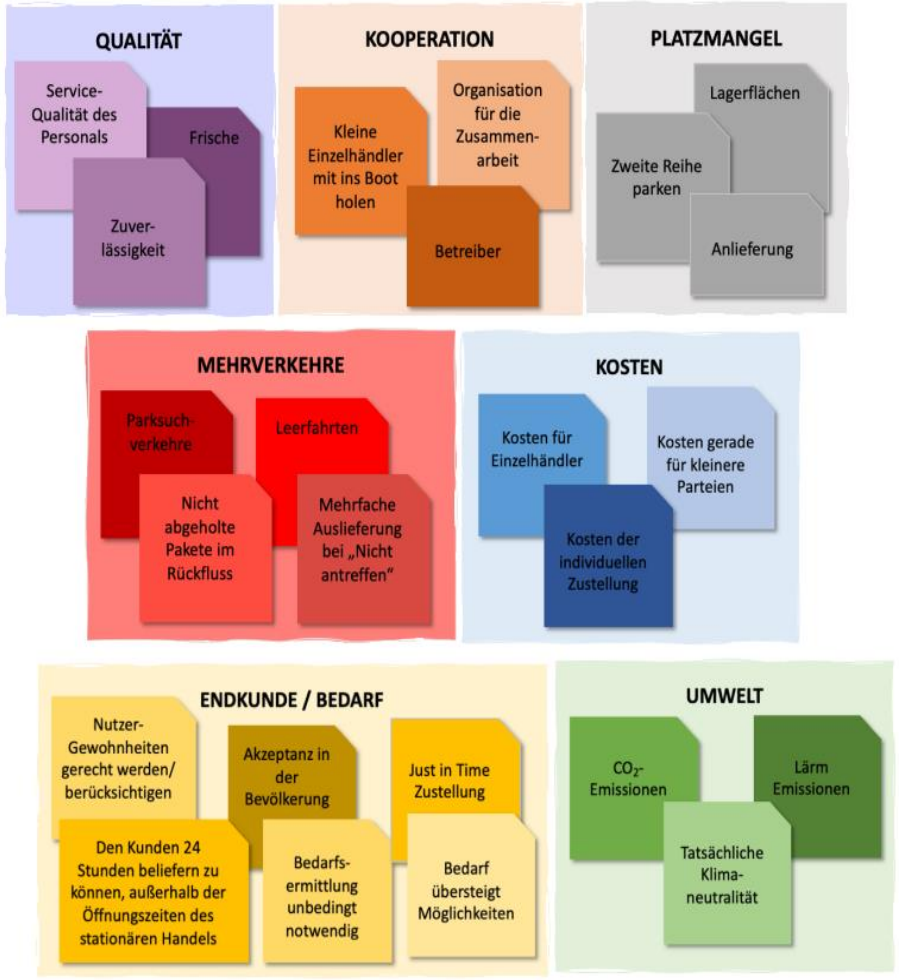
- CHALLENGE: bridging the gap between our research questions and practical implementation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953939

Bridging the gap…

- Reduce Co2 emissions
- Build up a network of ‚Hubs‘, which combine Logistic- and Mobility PLUS additional add-ons
- Establish not only traditional KEP business models
- Develop Intra Hub traffic & transport relations
- Create new cooperation between business & administration & Public Participation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953939

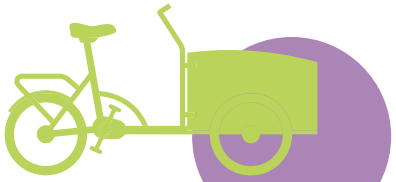


[Feasibility Study- Logistics Hub Altona (hupmobile-project.eu)]

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953939

From concept to a survey 2020/2021

Residential Area
”Mitte Altona”



Pandemic Situation

Survey

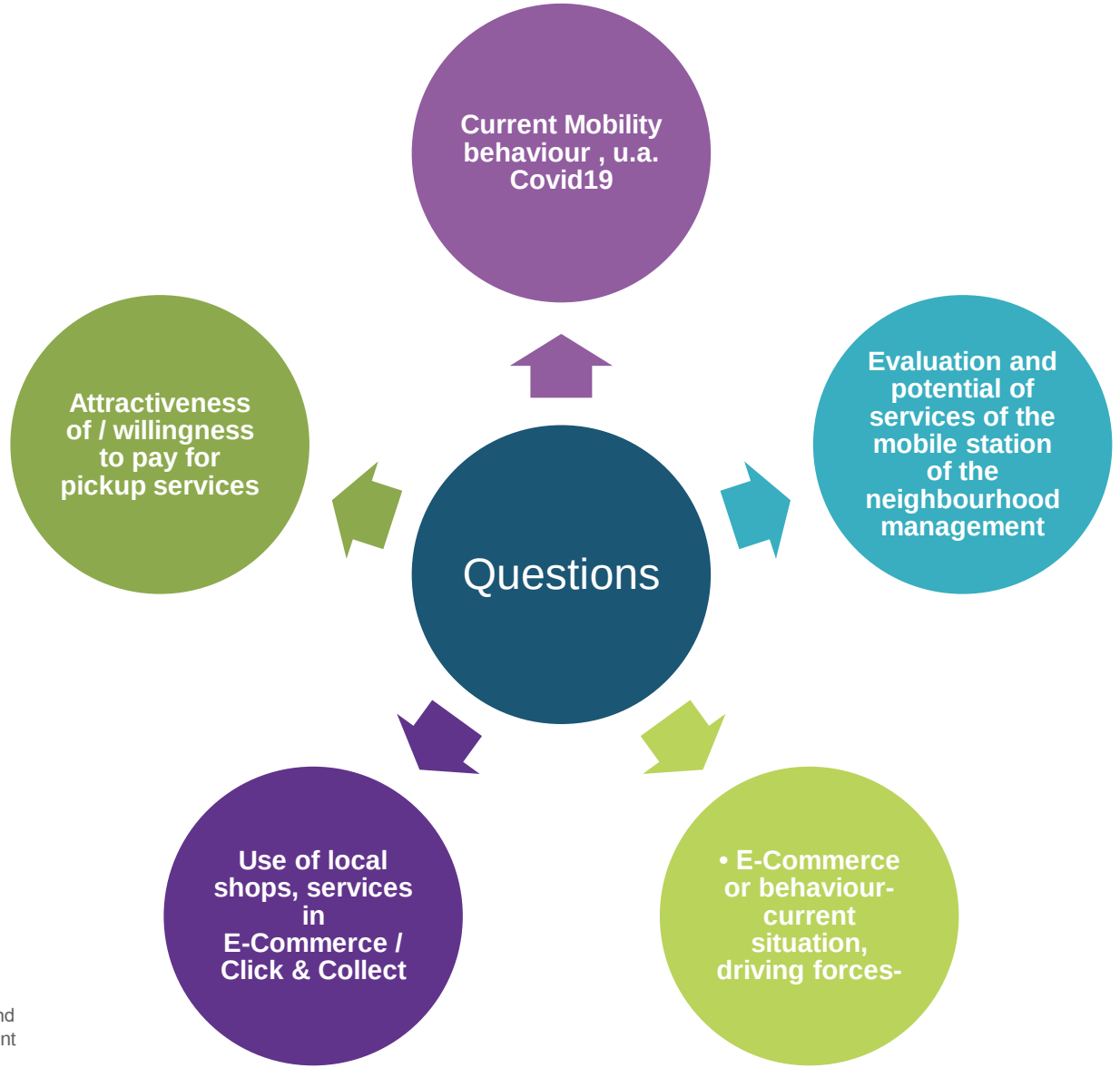
Results

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 953939

„Mitte Altona“ … Car-reduced Residential Area

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 953939

„Mitte Altona“ … Survey Questions



Source: BA-Altona

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Residential Area Mitte Altona… Results from the Survey

Spring/ Summer 2021 the survey was sent to 7500 residents, of which 808 have answered.

Profile:

- Residents between 16-100 years old
- Average Age 42,5 years old
- 48% men, 52% women
- 85% Employed
- Households:
  - 23% Single
  - 37% Couples
  - 31% Family
  - 9% Shared Housing and not specified

Source: BA-Altona

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Dominance of Cycling & Walking – slight increase of use of own cargo bike

How often did you use the following modes of transport before the pandemic (in 2019)? How often do you currently use it?

Residential Area Mitte Altona… Results from the Survey

Main results:

E-Commerce/logistics:

- Many residents order goods online: 40% of the respondents receive at least once a week a delivery.
- At the same time, clear majority requests emission-free deliveries or pick-up points/stations to reduce delivery traffic.
- Hence, the large number of delivery vehicles in the area is viewed critically by the residents at the same time.

Source: BA-Altona

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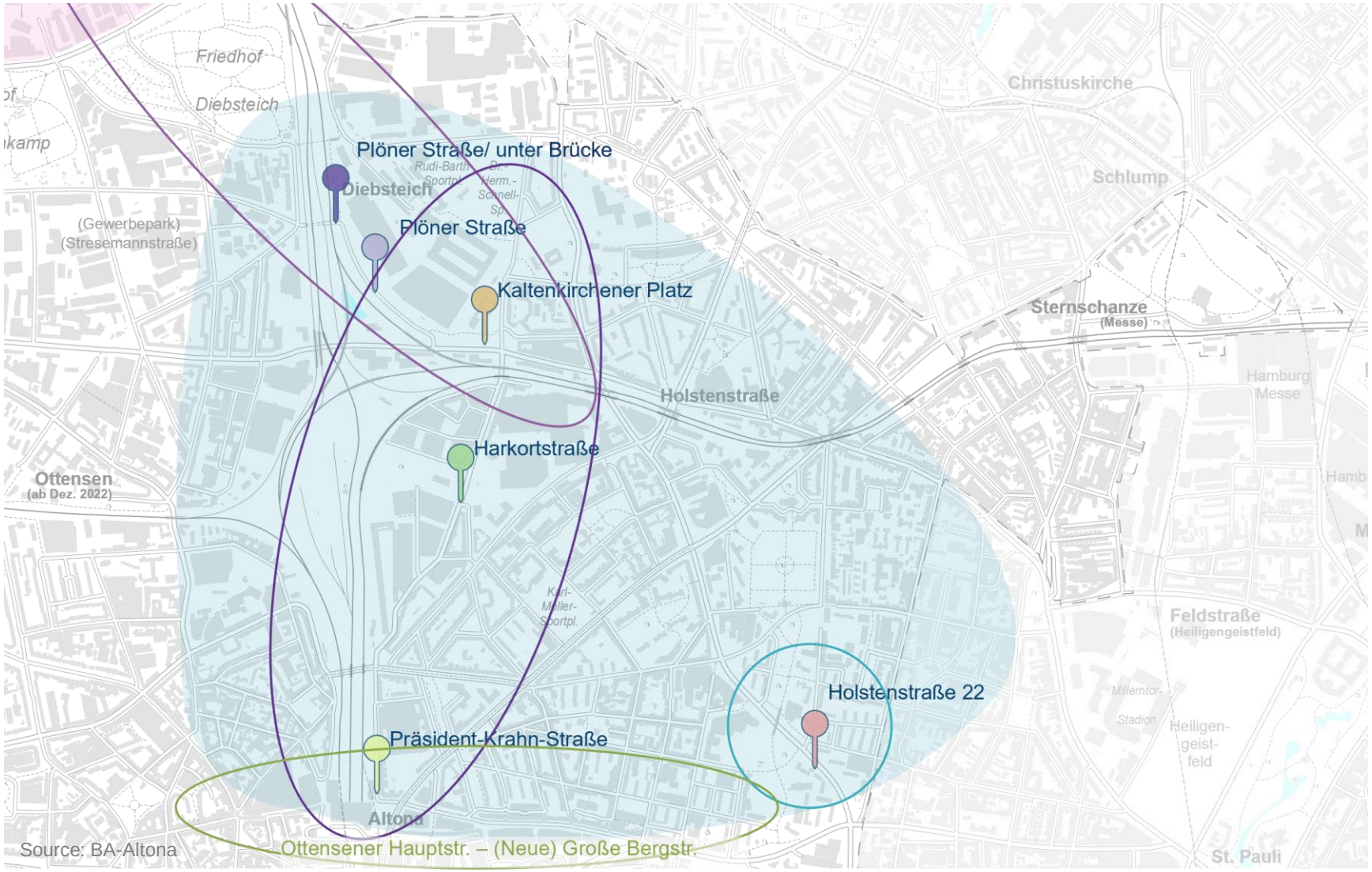
Possible Hub-Locations in Altona



Source: BA-Altona

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The concept of integrating transport and mobility services in one place and including other community benefits

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The LADENZEILE as a specific urban 1970ies- “retro-fit” perspective

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Conclusion

Towards Public Space & Administration

- Not every place gurantees a succes story for a Micro Hub
- Hard: to get „classical“ KEP industry under one umbrella
- Easy: to get innovative (cycling/Cargo) businesses under one umbrealla

Towards People & Residents:

- Hard: convince them to go to shops (again)
- Easy: Children would love to transform Micro Hubs into „playgrounds“ (= which tells a lot about use of public space!)

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Last but not least: ONE Climate Neutral Mobility Hub – one day!

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Thank You!

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