



STARS

Shared mobility opportunities And
challenges for European cities

Car sharing at a glance in Europe

An international perspective from the STARS project

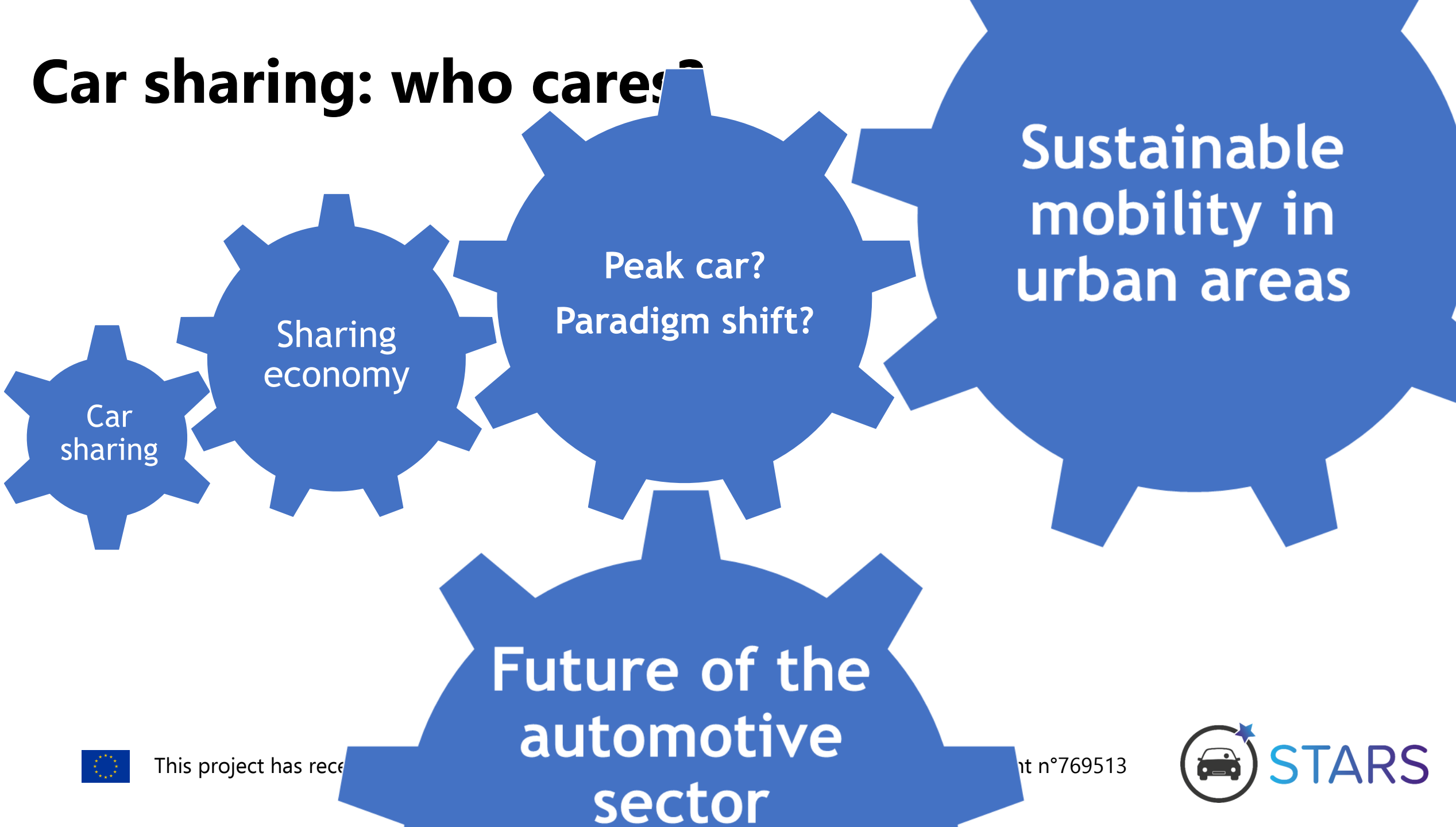
Marco Diana, Project Coordinator

Car sharing Campout, 14th-15th October 2019



This project has received funding from the Horizon 2020 programme under grant agreement n°769513

Car sharing: who cares?



This project has received

grant n°769513



STARS

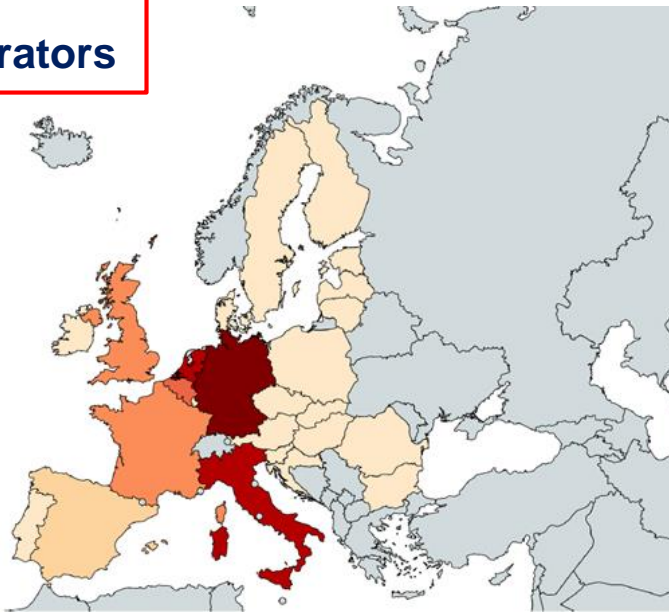
A two-level pan-European survey in 2017/18

Desktop research

Web research carried out by all partners

- ★ 25 countries
- ★ 185 operators

- 1-5 car sharing organisations
- 6-10 car sharing organisations
- 11-15 car sharing organisations
- 16-20 car sharing organisations
- 21-25 car sharing organisations
- >25 car sharing organisations



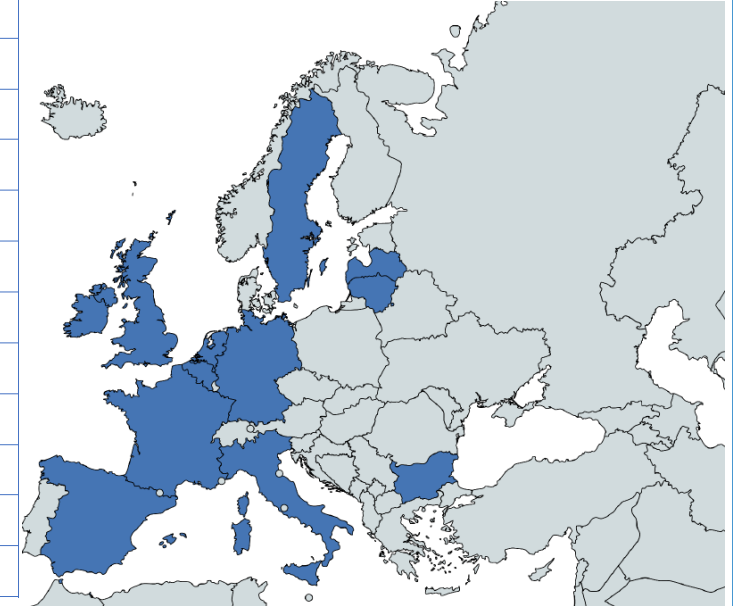
Seeking information such as operational characteristics, business model, shareholders, fleet consistency, pricing, reservation and opening technologies

In-depth research

Web survey to all car sharing organisations operating in selected cities

| Country | City |
|----------------|-----------------------------------|
| Belgium | Antwerp, Brussels, Ghent |
| Bulgaria | Sofia |
| France | Paris |
| Germany | Berlin, Bremen, Cologne, Mannheim |
| Ireland | Dublin |
| Italy | Milan, Rome, Turin |
| Latvia | Riga |
| Lithuania | Vilnius |
| Netherlands | Amsterdam |
| United Kingdom | London |
| Spain | Barcelona, Madrid |
| Sweden | Göteborg |

- ★ 12 countries
- ★ 20 cities
- ★ 56 operators



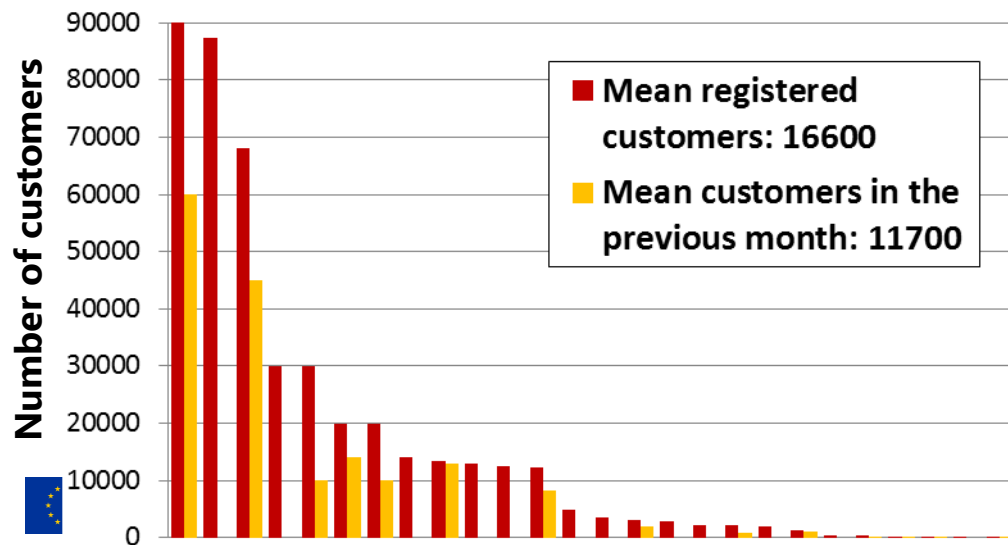
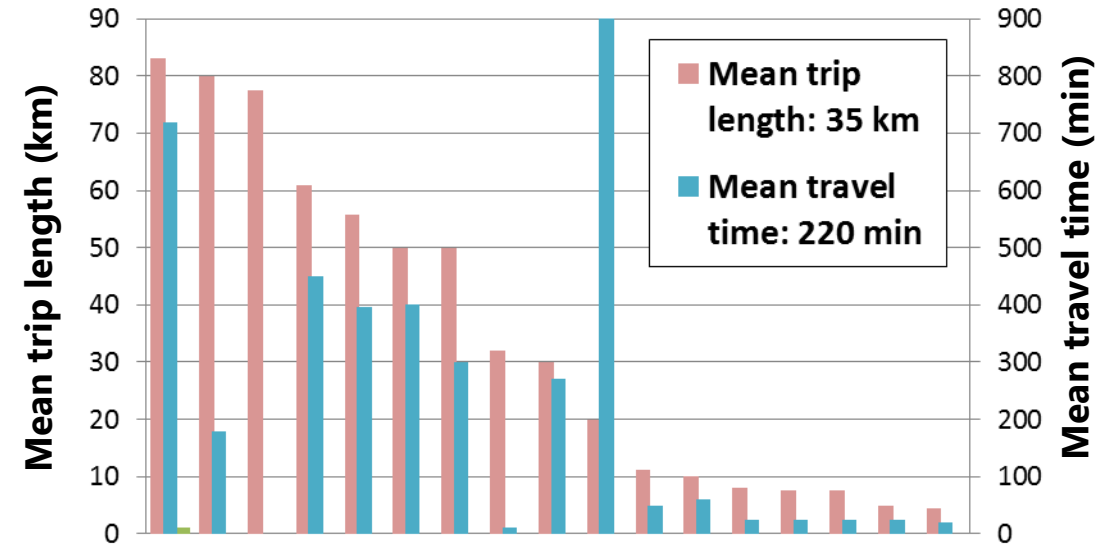
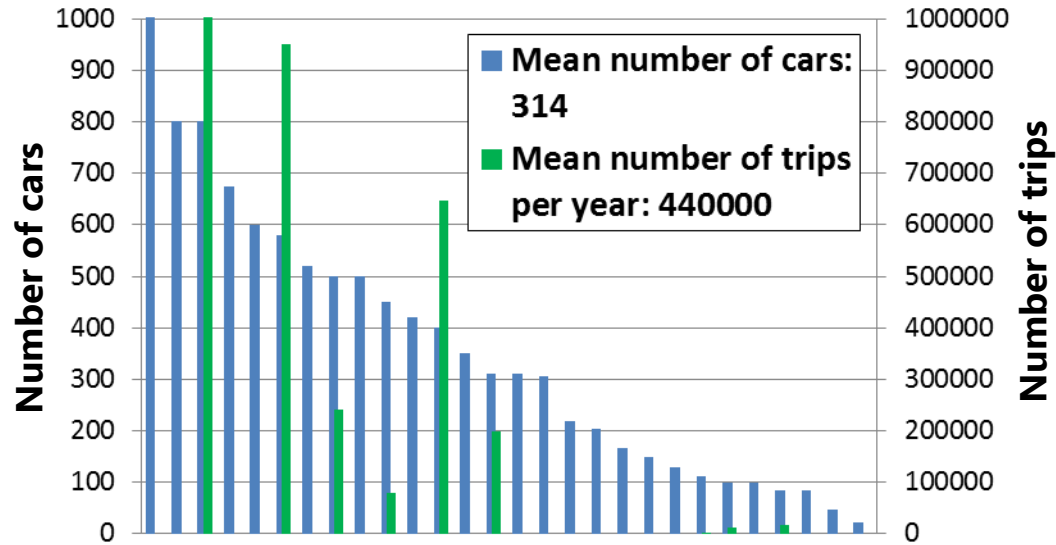
More specific information about each organisation, fleet composition, number of members, rental stats, future perspectives as well as other information collected in the desktop research



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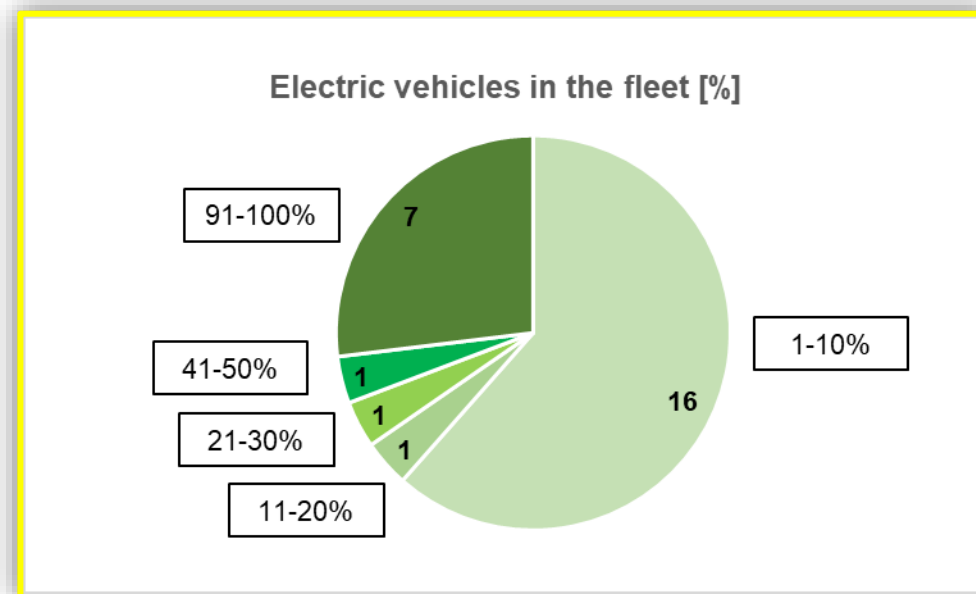
Car sharing at glance: summary statistics



- ★ Number of annual trips per car: **1400**
- ★ Number of customers per car: **53**
- ★ Number of annual trips per customer: **26.4**
- ★ Ratio of active over registered customers: **70%**

Car sharing at glance: fleet composition

| Engine technology | Number of operators adopting the technology | Frequency over the total sample |
|-------------------|---|---------------------------------|
| Petrol / gasoline | 34 | 81% |
| Diesel | 22 | 52% |
| LPG | 2 | 5% |
| Hydrogen | 0 | - |
| Electric | 26 | 62% |
| Hybrid | 9 | 21% |
| Total sample | 42 | |



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What summary statistics are hiding to us?



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Car sharing is not a univocal concept







- ★ **Operational characteristics:** roundtrip, free floating, stations, operational areas
- ★ **Juridical scheme of the operator:** corporation, company, association, cooperative; ownership can be public, private or mixed
- ★ **Business models:** for profit, no profit, competition versus cooperation with other transport services
- ★ **Dimensions:** fleet size and composition, number of registered customers, number of trips
- ★ **Rules for service use:** subscription process, reservation policies, vehicle opening technologies
- ★ **Pricing policies** for subscription and use of the service
- ★ ... and, last but not least, **local and environmental factors:** legal and regulatory framework, city policies, socioeconomic trends, cultural factors, performances of other transport modes...

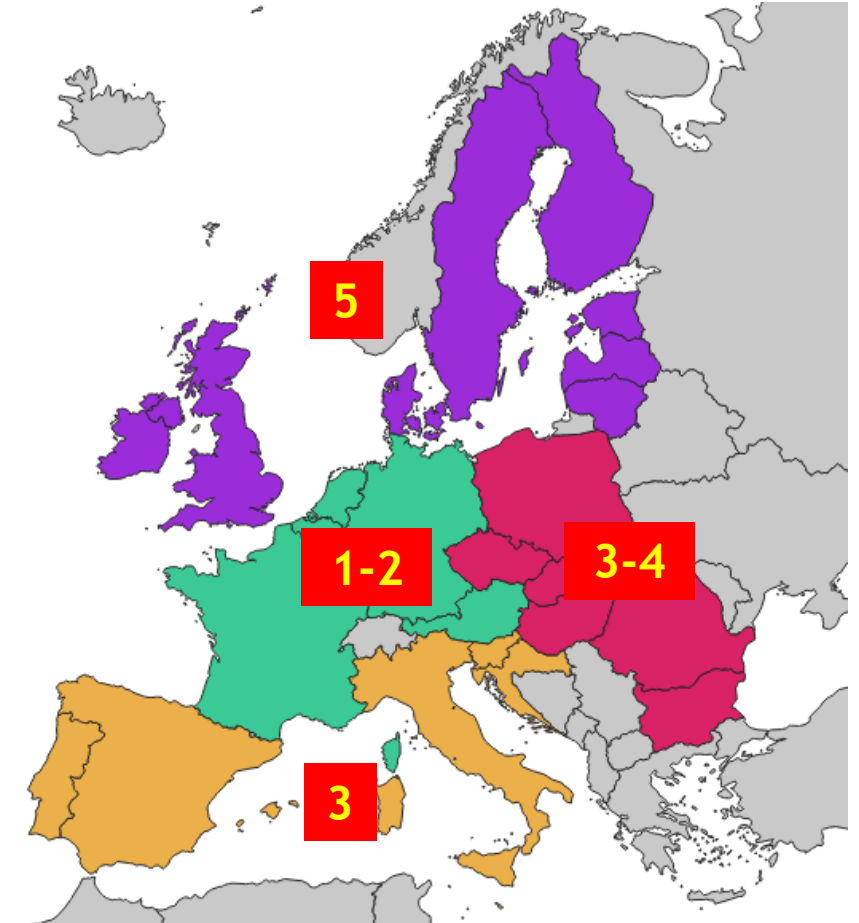


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Five different car sharing schemes

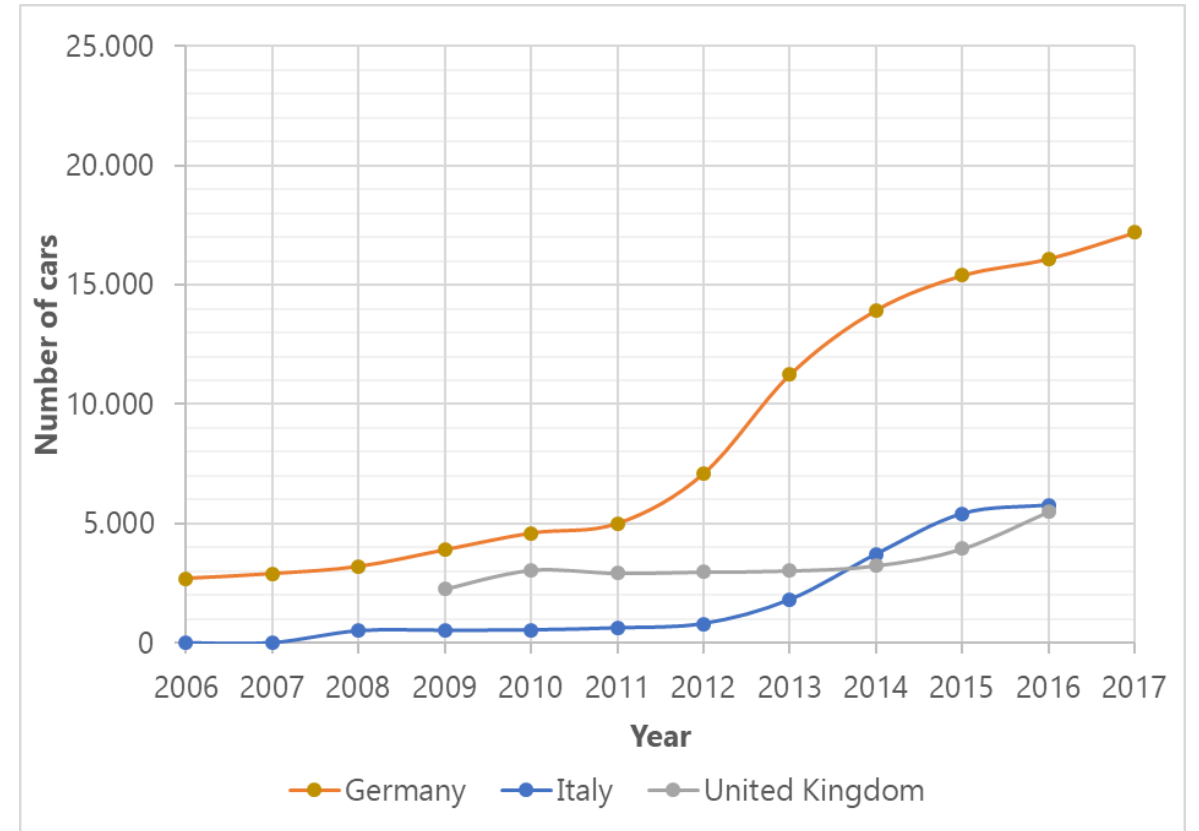
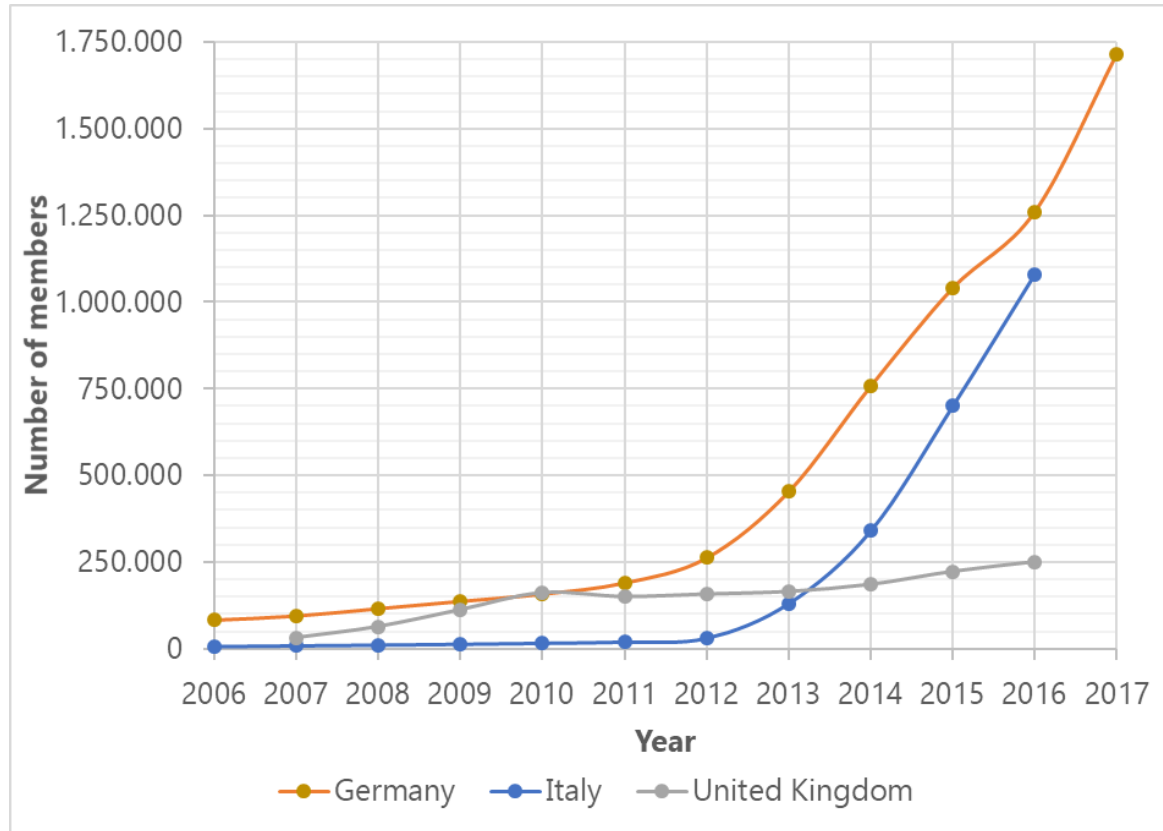
| Category of car sharing | | Business model | | |
|-----------------------------|--|---|---|------------------------------|
| | | Car sharing providers with an own fleet | Peer-to-Peer car sharing | Car sharing among neighbours |
| Operational characteristics | Roundtrip station-based |  1 Roundtrip station-based | | |
| | Roundtrip homezone-based |  2 Roundtrip homezone-based |   5 Peer-to-Peer car sharing | |
| | Free floating with an operational area |  3 Free floating with operational area | | |
| | Free floating with pool stations |  4 Free floating with pool stations | | |



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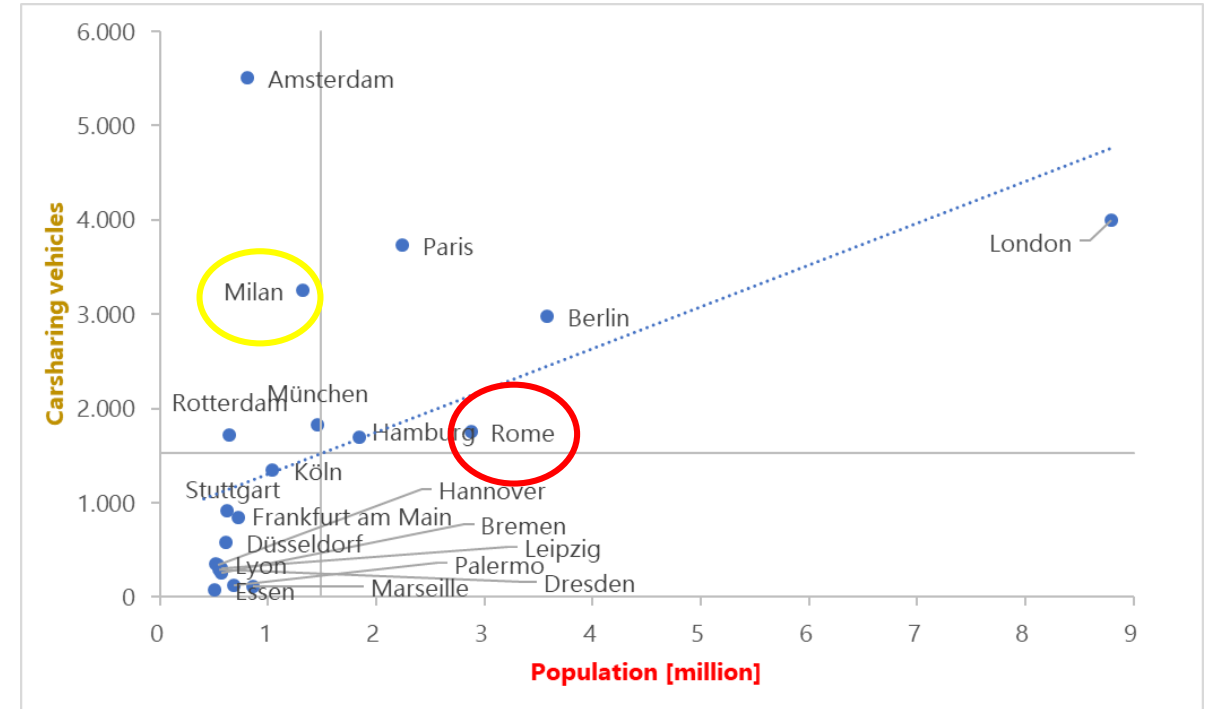
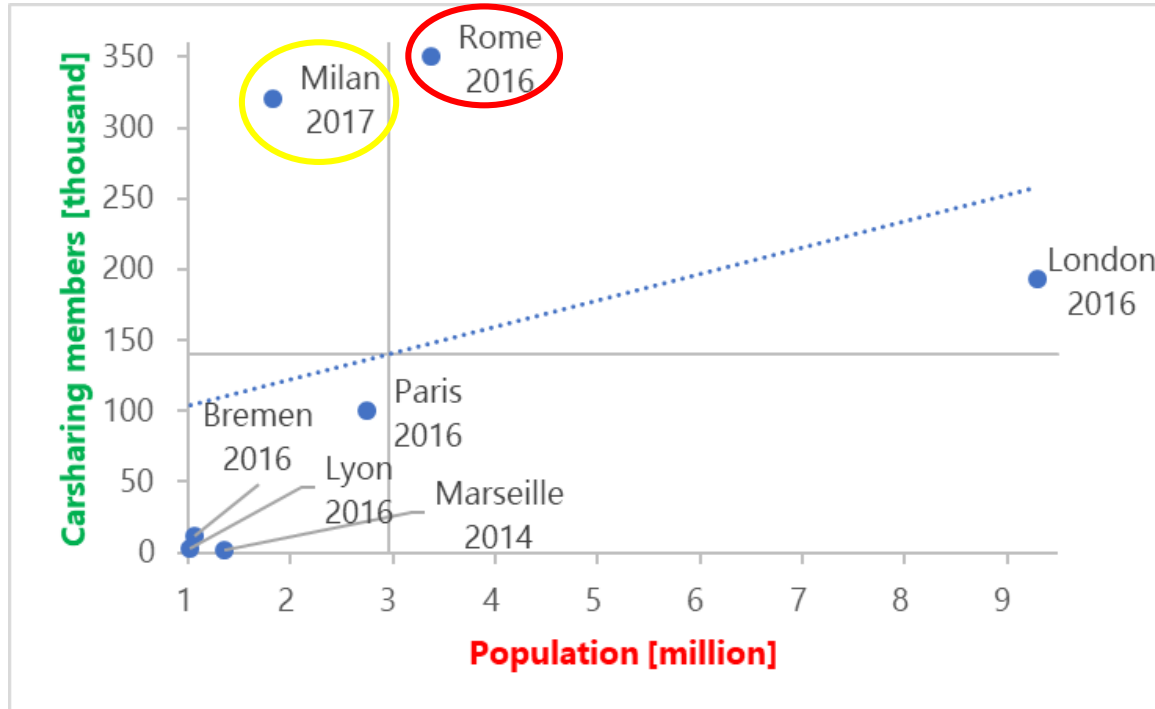
Differences among EU countries



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Differences among EU cities

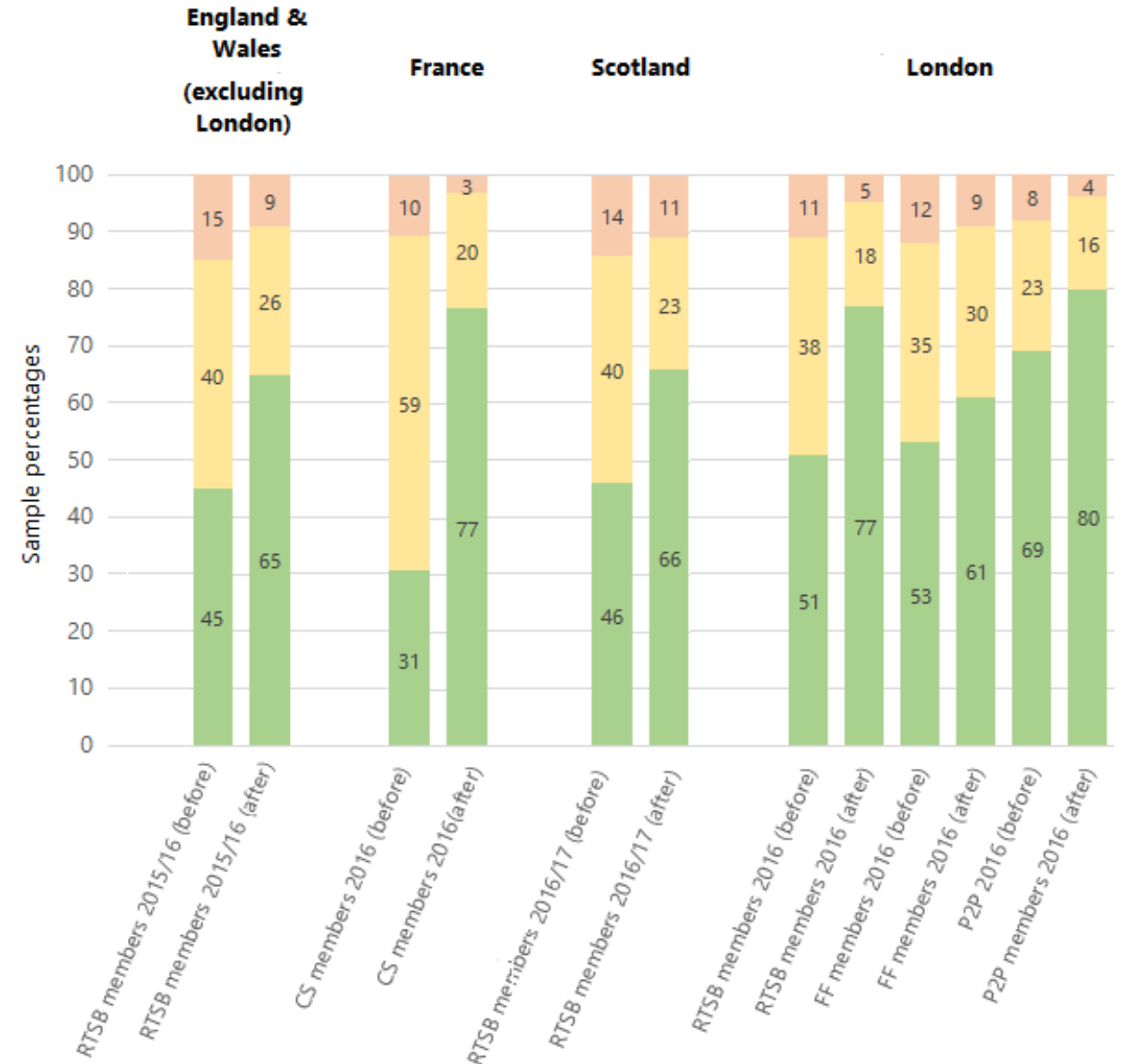
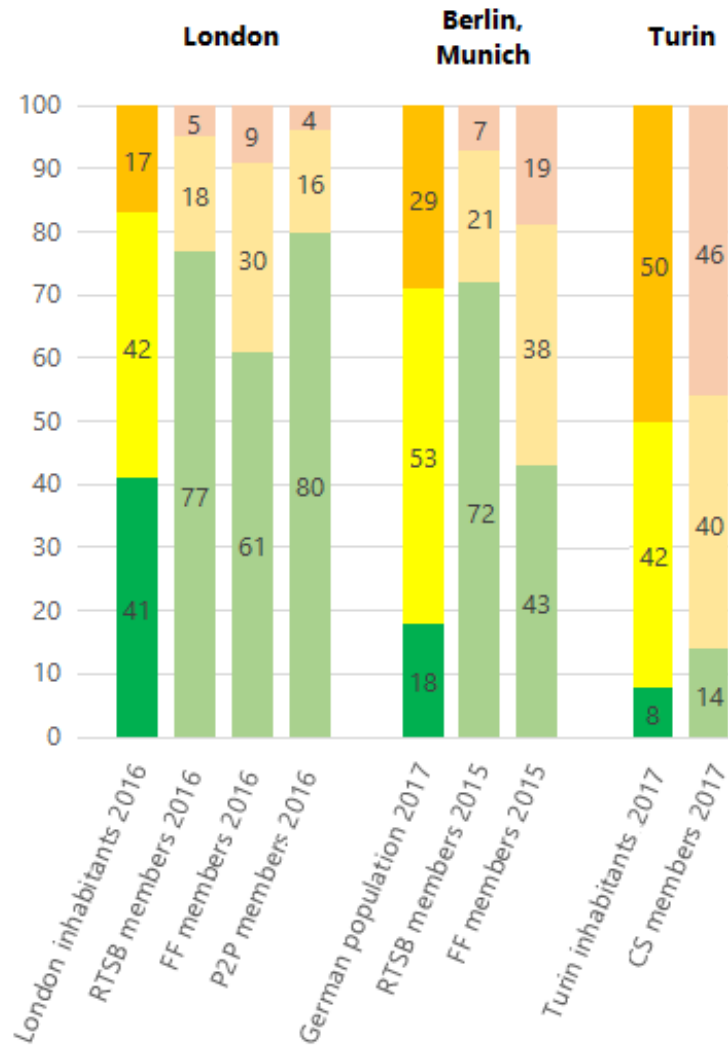


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Car ownership patterns

0 1 2 or more cars

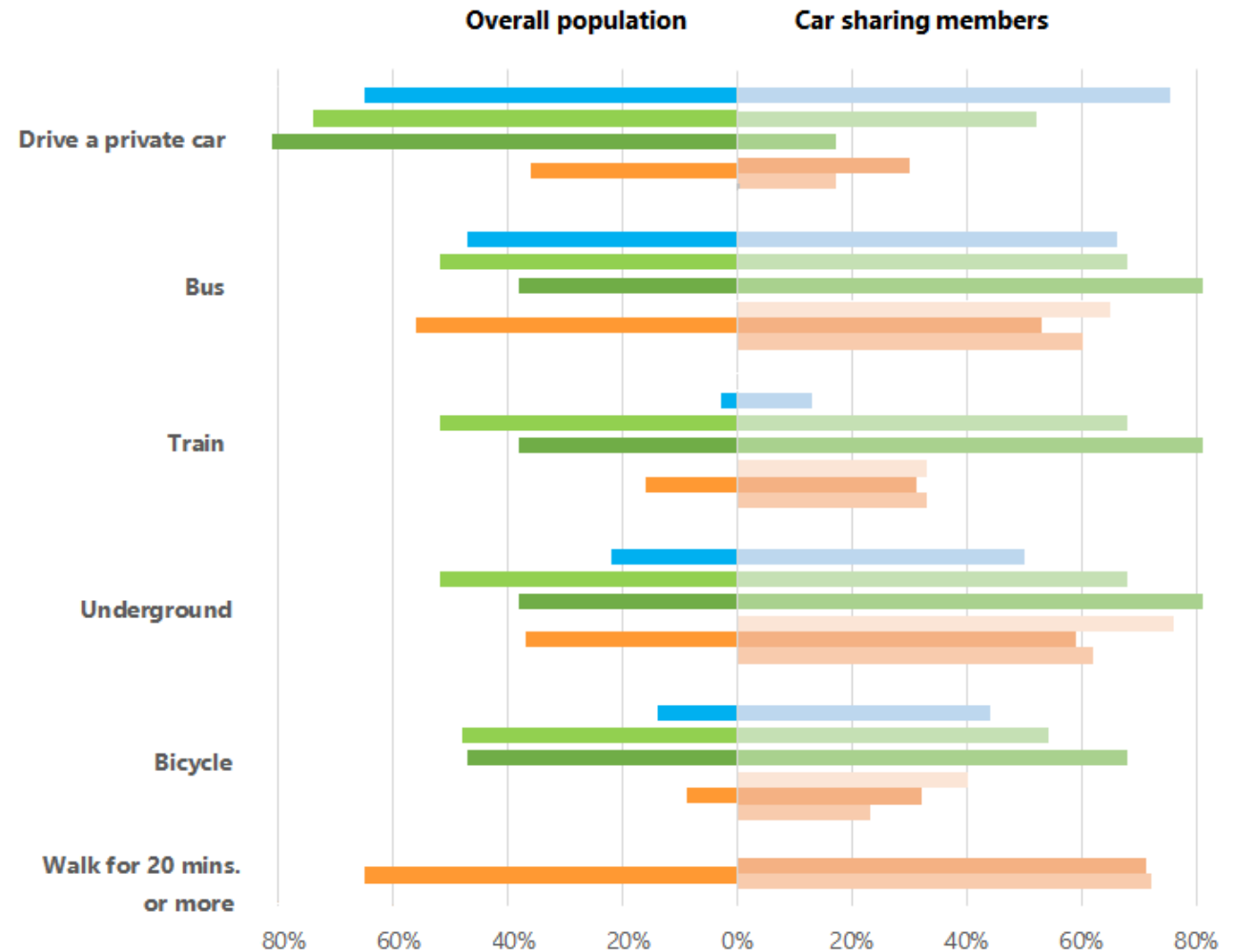


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Mobility choices of car sharers

People using a travel mode at least once a week (%)

- Turin population - 2017
- German cities > 500k inhab. with age 25-45 - 2008
- German cities > 500k inhab. with age 35-55 - 2008
- London population - 2016
- CS members - Turin 2017
- FF members - Berlin&Munich 2015
- RTSB members - Berlin&Munich 2015
- FF members - London 2016
- RTSB members - London 2016
- P2P members - London 2016



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The future of car sharing from the operators' viewpoint

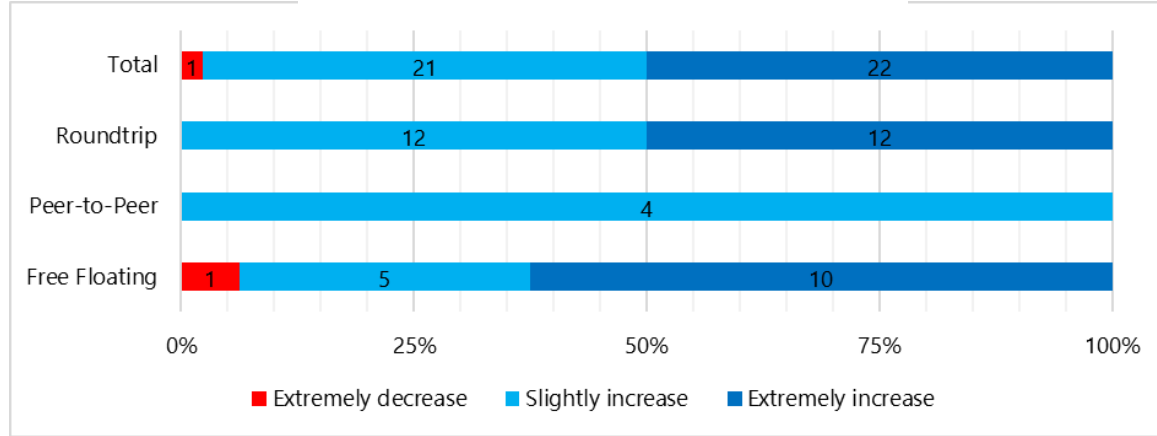


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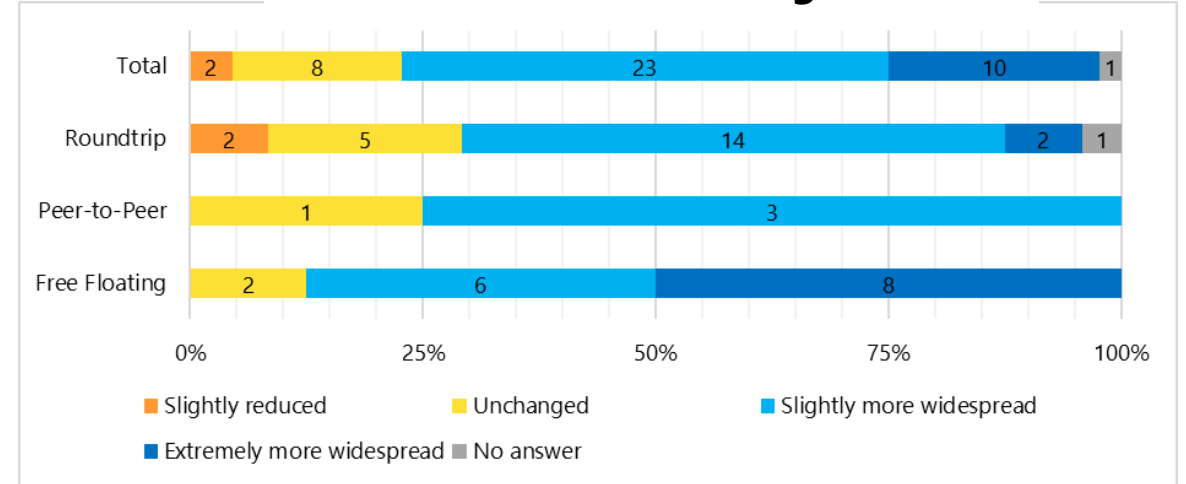


An outlook on the market trends

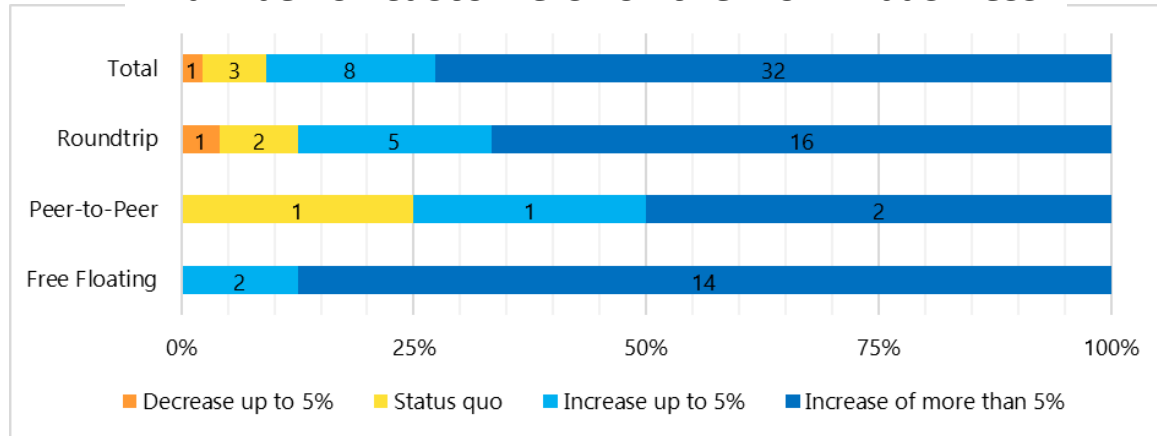
Number of customers



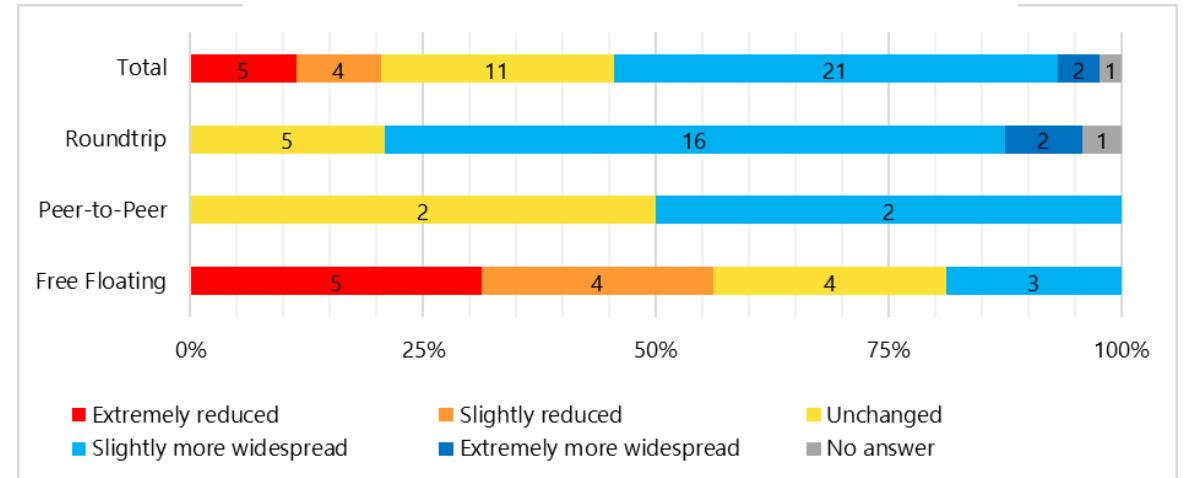
Diffusion of free floating services



Number of customers for their own business



Diffusion of station based services

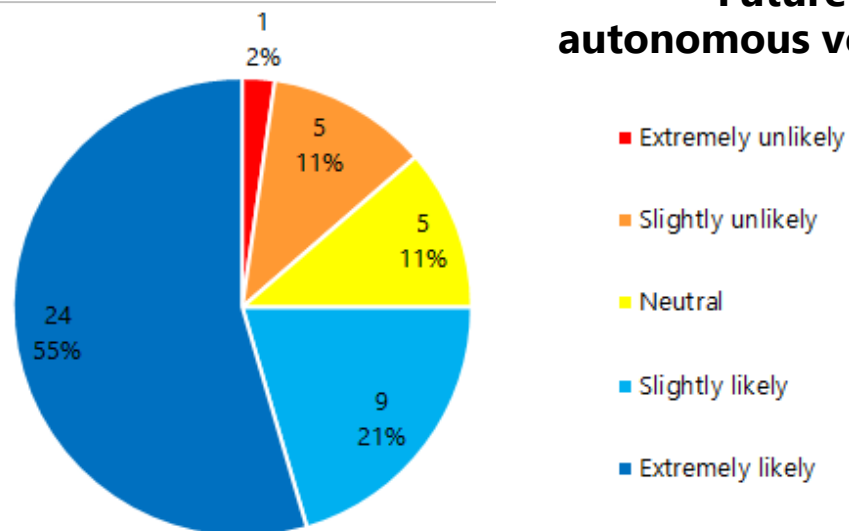


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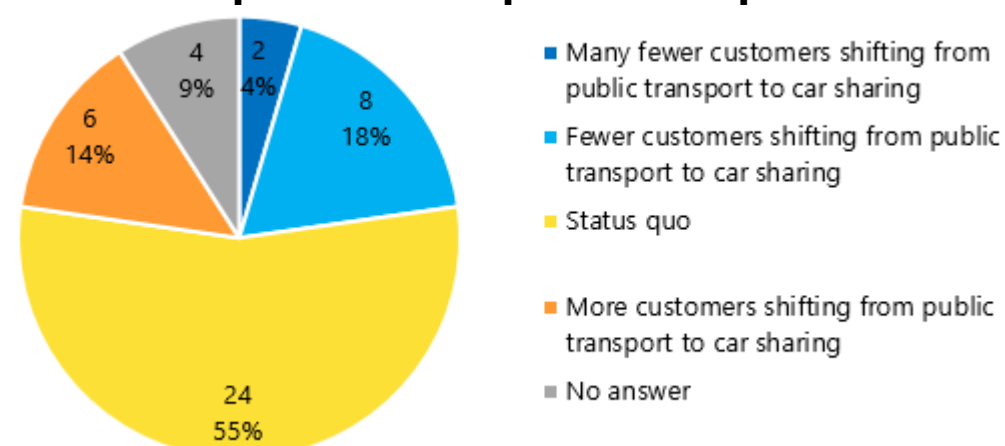


Tech innovation and competition with transit

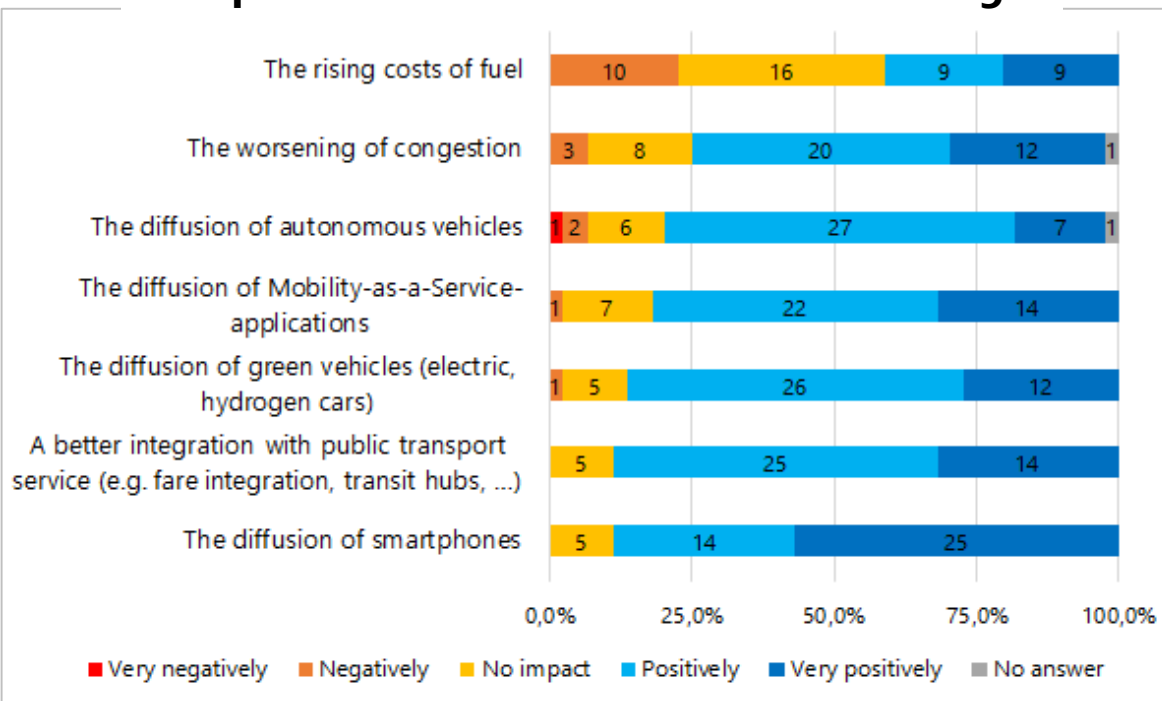
Future use of autonomous vehicles



Competition with public transport



Impact of different factors on car sharing



So... what?



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Interim conclusions (?)

1. **Uneven diffusion** of car sharing among countries and cities: local conditions matter!
2. **Growth potential** still good but it is unlikely that car sharing will become a massively used mode in current conditions
3. **Positive benefits** mainly from replacing private cars, if this is not happening what are the additional impacts?
4. **Different car sharing** schemes may have an appeal to different social groups and a different impact on car ownership and mobility choices:
 - a) **Free floating** is probably less beneficial regarding sharing impacts and modal substitution patterns BUT much more attractive to the «average driver» especially in car => *entry level in the car sharing world*
 - b) **Round trip** is more a niche for «pro-social» individuals BUT higher benefits for cities => an easy car rental scheme for discretionary trips out of the city that makes the *final push to get rid of cars*
 - c) **Peer to peer** even more emphasizing round trip characteristics



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Searching for the optimal service mix

Addiction to car ownership

Try out something new
and in fashion "on the
fly", no obligation

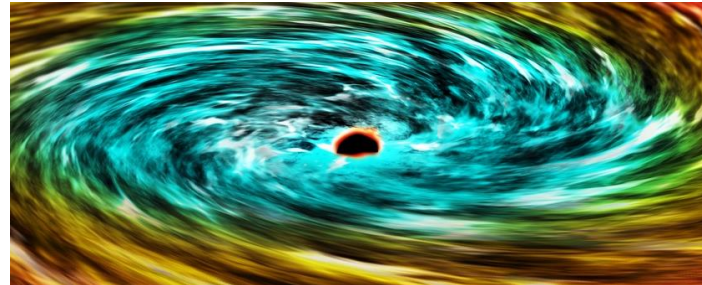
... ready for the **BIG JUMP?**

Consolidate the use of
shared cars for short trips

Realise that a personal car
is not so needed after all

Start planning to use car
sharing for longer trips

Engage with different means
including public transport



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From theory to policy recommendations



POLICY BRIEF

10 Recommendations to Help Policymakers Implement Car Sharing in Europe



Car Sharing in Europe: a Multidimensional Classification & Inventory

Based on the results of the STARS Deliverable 2.1, the following **five types of car sharing** have been identified in Europe:

- **Roundtrip station-based:** bringing back a shared vehicle to the same parking location.
- **Roundtrip homezone-based:** bringing back a shared vehicle to the same neighbourhood.
- **Free-floating with pool stations:** a shared vehicle can be returned at different spots, but always in a dedicated car sharing hub/station.
- **Free-floating with an operational area:** a shared vehicle can be left at any parking place in an operational area.
- **Peer-to-peer car sharing:** shared vehicles among private drivers, either in (closed) community groups or peer-to-peer.



Ensure a EU legal framework for car sharing

Both the 2009 MOMO report and recent research carried out in the STARS project (D2.1) show a significant development of car sharing organisations and initiatives in the EU, over the last decade. That's why there is a **strong need for a European legal framework for car sharing**. This should clearly define indicators to be recognised as a car sharing operator with "room for innovation". This framework will ensure a **level playfield** and a concept lead by socioeconomic impacts before revenue maximisation. By this, the word car sharing can be used in a correct way as a valuable alternative for private car ownership.



Invest in performant public transport and safe walking and cycling infrastructures

Living without owning a private car is only feasible when it is possible to rely on easy and safe mobility alternatives. In addition to car sharing services, performant public transport and safe walking and cycling infrastructures are essential. As stated in the policy recommendations set up by CARE-North (Interreg North Sea Region project), **walking and cycling should be an attractive and accessible alternative to car-based transportation** while not competing with each other for gaining space in urban areas. Future investments in public facilities, for example in "**mobility hubs**" (physical locations combining different sustainable mobility modes), should be thinking from a pedestrian or cyclist point of view.



Adopt a mix of suitable car sharing models

The STARS project (D2.1) classified **five types of car sharing**, each with their unique features. Drivers can use a vehicle from a car sharing provider but also to share privately owned cars via online platforms or decentralised community groups. Aiming for a **suitable mixture of car sharing models** is key to start new services with a dedicated fleet in areas which are not yet on the radar of car sharing providers: for instance, in less urbanized regions or the countryside. When communicating about car sharing, **keep an eye on its different forms and emphasise their complementarity!**



Rethink fiscal systems to create a mobility budget

According to the STARS research (D3.2), **VAT rates for car sharing are fluctuating around 20% in all European countries**, and they are always at the same level as those for car rental. Since car sharing has a proven positive effect on public space, modal shift and liveability of neighbourhoods, **VAT rates for car sharing could be reconsidered**. In addition, current fiscal incentives for company and salary vehicles must be reformed as they are one of the biggest thresholds for further growth of car sharing. Fiscal stimuli for a **mobility budget** should be also considered. This system could offer employers and employees a number of alternatives for company cars.



Invest in on and offline MaaS

As stated in the STARS project (D2.2), **smart technology helps to improve user friendliness of car sharing**, making it easier to book, access and use. This is the **Mobility as a Service (MaaS)** concept which is necessary to optimise through investments in "mobility hubs". These "mobility hubs" foster the integration of car sharing, public transport and other shared mobility modes to reach one main goal: **replacing private car ownership**. Within the SHARE-North Interreg North Sea Region project, "mobility hubs" are currently being installed in Belgium, Germany, Norway, and the Netherlands.

Include car sharing in more policy areas

In order to create an optimal policy framework, **car sharing itself should be included in other policy areas**, as it covers different topics such as mobility, public space, new housing developments and even social cohesion and work. Integration of car sharing in all these fields avoids conflicting legislation. For instance, fiscal policy can have an immense positive or negative impact on car sharing and access to an affordable shared car can make all the difference to find a job. To maximise integration, it is important to work with a **car sharing and/or shared mobility officer**.



Integrate car sharing in your parking management plan

The STARS survey (D2.3) pointed out that parking policy problems are one of the biggest barriers for car sharing schemes. In order to develop car sharing, **a well-balanced parking policy is needed**, based on the real impacts of different car sharing models. Each category of car sharing system requires a different approach, going from fixed parking places to parking permits. Moreover, the integration of car sharing in parking policy and spatial planning enables cities and project developers to **reduce the number of parking places** in certain areas, resulting in financial profits and more open space. In addition, **the rise of electric mobility also causes major changes**: building new charging stations represents an opportunity to integrate space for car sharing.



Tell citizens and stakeholders the benefits of car sharing

The integration of car sharing in parking and housing policies can have positive effects by reducing the number of cars in a city and the number of driven kilometres travelled by private cars. However, **many citizens and stakeholders still unaware of what is car sharing and how it works**. Moreover, the transition from car ownership to the use of shared vehicles takes time. It is a mental shift which is not easy to make, but once people tried, they tend to adopt it quickly. Therefore, **governments and local authorities could inform and communicate** on the advantages of car sharing for improving the quality of life for inhabitants.



Support car sharing as a sustainable solution to be integrated into SUMPs

A broader social transition towards shared mobility is based on embedding these sustainable solutions to private car ownership in policy papers, at governmental level. **Establishing an action plan for car sharing**, containing ambitious and achievable goals on short and medium term, is the first important step and should also be part of the **Sustainable Urban Mobility Plans (SUMPs)**. It will contain measures in the field of parking policy, integration of car sharing in new housing projects and implementation of "mobility hubs", targeting non-traditional audiences and monitoring the use of space by (shared) cars. Considering car sharing as a component of the overall transport system is essential to **maximise its social, environmental and economic benefits**.



Be a car sharing user too!

In Belgium, recent researches show that most of local governmental cars do not travel more than 10 000 km per year. During weekends and outside office hours, these vehicles are not used at all. Why not replace them with shared cars promoting car sharing at the same time and optimise fleet costs?



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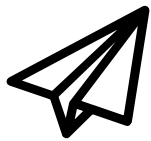


Thank you

Get in touch for more information!



All of the reports of the project will be available for download on the STARS website: **www.stars-h2020.eu**



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