



STARS

Shared mobility opporTunities And
challenges foR European citieS

CAR SHARING IN EUROPE

FACTSHEET

How social, cultural and emotional factors influence users and non-users of car sharing



CONTEXT

Today, there is **an urgent demand to reduce pollution in cities**, especially by limiting the damaging impacts of transportation on the environment (bad air quality, noise, reduced green areas, traffic congestion...). **Car sharing appears as a sustainable solution** to tackle climate change in urban areas.

Standing for "**Shared mobility opporTunities And challenges foR carsharing European citieS**", **the H2020 STARS project** aims to analyse the car sharing market, measure the benefits of the different services and compare their costs, as well as study user profiles and behaviour.

Launched in October 2017, STARS brings together experts in the fields of transport engineering, environmental psychology, and industrial economics. Their work will serve as a basis to design and distribute **a policy toolkit** that will include guidelines and recommendations **to implement the best car sharing services in Europe**, maximising environmental and social benefits while making cities better and more affordable places to live in.

This factsheet presents the results of two reports produced by the STARS project: D 4.1 - "The influence of socioeconomic factors in the diffusion of car sharing" and D 4.2 - "Mobility cultures and mobility styles", and addresses **"how social, cultural and emotional factors influence users and non-users of car sharing"**. The reports are based on studies conducted in **6 countries (Belgium, France, Germany, Italy, Spain, Sweden)** by Autodelen, BCS, General Motors, ICLEI, Politecnico di Torino, and the University of Gothenburg.



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SOCIOECONOMIC FACTORS IN THE DIFFUSION OF CAR SHARING (D4.1)



Bridging the gap between travel surveys lacking focus on car sharing and car sharing surveys missing the overall mobility picture

To link the diffusion of car sharing practices with relevant individual sociodemographic and economic factors, the STARS partners started their research activities by analysing data contained in several national travel surveys conducted throughout Europe. From this research it emerged that in most cases, information on the use of car sharing for daily mobility at national level was of poor quality. Some reports also focusing on car sharing at national and city levels were available for some European countries, but they tended to miss the overall picture of individuals' mobility behaviours.



Following the previous multidimensional classification generated in the STARS Deliverable 2.1: 5 types of car sharing 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.



Different car sharing profiles for a variety of consumers characteristics

Practitioners cannot change people's monthly income, housing or family size. But they may implement transport systems accordingly to people's attitudes, perceptions and personal norms. The outcome of the STARS research shows that different car sharing profiles appeal distinctly for a variety of consumers characteristics. First, the results from the German case study showed how different the demands are when comparing free-floating car sharing users to the other profiles. Free-floating car sharing consumers mainly use the services for short inner city trips while the other consumers mainly use car sharing for longer and planned trips. Meanwhile, free-floating car sharing consumers were the group most dissatisfied with vehicle availability.

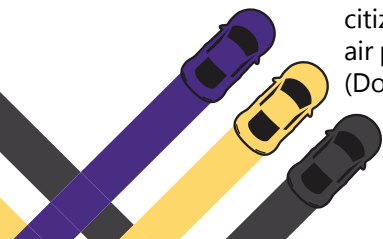
In the case study carried out in Flanders, almost two thirds of respondents do not own fewer cars since they started to use car sharing. While respondents were satisfied with the different aspects of car sharing services, the environmental impact due to the use of car was differentiated by the car sharing operator that respondents were members of. Users of car sharing services operating with electric cars were the most satisfied with the ecological impact of car sharing service.



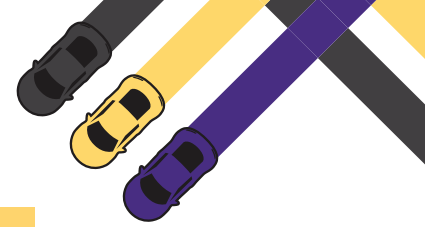
Key elements to use as a basis for future research on car sharing

The STARS results bring insights for future research, such as why free-floating car sharing users differ from the others in term of usage pattern, if this service attracts a specific type of user with a specific demand, or if the consumers develop new patterns of travel behaviour after accessing this service. Furthermore, in the current scope of research, the STARS experts focus on car sharing only. However, in other kinds of shared transportation (for instance, bike sharing) could also be explored in future research.

Another interesting and highly relevant question has emerged thanks to the STARS results: are free-floating car sharing services inflating demand for travel? This is a delicate discussion since practitioners need to develop a two folded strategy: guaranteeing the freedom of citizens to commute and travel, and guaranteeing that this demand will not compromise the quality of life of citizens in urban areas. Research has shown how negatively traffic congestion, noise pollution and air pollution may affect people's life at different levels, such as health, well-being and daily routines (Dolan, Peasgood, & White, 2008).



MOBILITY CULTURE & MOBILITY STYLES (D4.2)



Non-users of car sharing can be divided in two groups

We can identify two groups within non-users of car sharing: the first prefers private car to car sharing, and the second is open to the idea of car sharing but does not seem to have any practical need for it. Three mobility styles were also identified in non-users of car sharing: the first has a low level of car use and a high environmental awareness. The other two are characterised by a high rate of car ownership and high frequency of car use. For both groups, car sharing is an additional option to the private car – not a replacement. Focus group discussions in Germany and Belgium showed that users of roundtrip and private peer-to-peer initiatives have a high concern for environmental issues and want to reduce their car ownership and car use frequency. For them, car sharing is an expression of a “lifestyle of sustainability”. On the other hand, users of free-floating car sharing seem to use it more for convenience and usability.

Private cars give owners a sense of security and control

Private cars represent a permanent, easy and guaranteed access to mobility. From the viewpoint of non-users, this practical and emotional core value is not met by today's car sharing services, both roundtrip and free-floating. Non-users suspect that availability and convenience of use will be low with car sharing. Conversely, current users of car sharing are generally satisfied with services they use. A core question for higher conversion rates seems to be: what is needed to address car-owners' concerns?

Free-floating car sharing attracts more non-users

The results of use cases for private cars in D4.1 and in the German and Belgium focus groups resemble usage patterns of roundtrip car sharing variants. These variants can technically replace private cars. Nevertheless, from the viewpoint of most non-users, free-floating car sharing is more attractive. The ability of these variants to provide one-way trips and spontaneous bookings appeals intuitively to non-users. Conversion to other car sharing variants seems to be strongly connected to the presence of role models: many participants of the focus groups in Belgium started to use roundtrip and peer-to-peer variants because a close friend or relative introduced them to it. The complexity of their own mobility patterns plus the large offer of car sharing services make it difficult for non-users to figure out if car sharing – and which variant(s) - could replace their private car.

Children can be a limit to car sharing

Free-floating users miss features like reservation options and the ability to do longer out-of-town trips, which can only be found in roundtrip variants. Furthermore, roundtrip users are satisfied with their service but think free-floating car sharing provides additional value regarding convenience. It can be concluded that a good mixture and high availability of both variants (or an integrated offer) provides the highest value for most users. Nevertheless, free-floating users tend to buy their own car if they have children. This stage of life seems to call for more reliability than free-floating services can currently provide. Thus, an integrated offer may also have the highest potential to replace private car ownership in all kinds of households.

Car sharing remains a lot associated with free-floating model

In many European countries (especially in Southern and Eastern Europe), car sharing is still associated to the free-floating model. This may be a barrier transitioning from car ownership to shared use of cars since stand-alone free-floating does not cover central use cases for private cars. Thus, no full offer to replace private cars is available today.