Trafik analys

New services in shared mobility

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Publiceringsdatum: 2016-06-09

Summary

This report studies new and, to some extent, existing shared mobility services. These services are usually provided via some type of digital platform, and are intended to enable vehicle co-use in various ways. Such co-use, or “sharing”, can be either sequential or concurrent. Car sharing is one example of sequential vehicle sharing, wherein a number of households take turns using a smaller number of cars. In concurrent vehicle sharing, in contrast, multiple people use the same vehicle at the same time, i.e., they “ride share”. The latter category also includes services for transporting other people’s goods in unused space in private vehicles. This trend is tied closely to the growing “sharing economy”, which is based on using resources more efficiently by exchanging, hiring, lending, co-owning, or otherwise sharing residences, vehicles, clothing, tools, and other assets.

Shared mobility is not a new phenomenon per se, but the rapid development of digital technology in recent years has enabled vehicle sharing and ride sharing on a larger scale, and among people who do not know one another. At the international level, the financial crisis and changes in consumption patterns have also been key forces driving shared mobility as well as the sharing economy as a whole. Another important factor that has promoted the increased use of shared mobility services is the ability to use various digital forums to rate and post reviews of both the person offering a service and the person using it.

The shared mobility services described in this report are as follows:

- Car sharing – station based or free floating
- Services for renting cars between private individuals (peer-to-peer car rental)
- Sharing of privately leased cars
- Digital ride-sharing platforms
- Taxi-like services provided by so-called transport network companies (TNCs)
- Bike-sharing systems
- Sharing services for transporting goods

The report describes our current knowledge of the effects of these services in terms of accessibility, vehicle miles travelled, choice of transport mode, car ownership, and parking space demand. We have the most knowledge of car- and bike-sharing systems, while other services have been studied to only a limited extent. The existing research regarding the latter services essentially concerns the direct effects on users, with far fewer studies of effects at the transport-system level.

Transport system accessibility can generally be improved by these sharing services due to expanded transport offerings and lower transport costs. However, this increased accessibility might not benefit everyone to the same extent. Users of new sharing services are, on average, younger and better educated than the population as a whole, and most of the new sharing services are found mainly in larger cities. These services also require access to, and knowledge of, new digital technologies.

The effects of these sharing services on vehicle miles travelled and choice of transport mode depend largely on the type of service in question and on users’ travel patterns before they began using the service. It is presumably the combination of many different services that is of the most interest, at least if these services are to offer a comprehensive alternative to the personal automobile for most people. There are detailed studies of the direct effects of car- and bike-sharing systems on users’ miles travelled. These studies demonstrate that members of station-based car-sharing organizations reduce their miles travelled by car by an average of 30–60%. Members of free-floating car-sharing organizations appear to reduce their miles travelled as well (although not to the same extent as do members of station-based car-sharing organizations), while the number of trips made by car appears to increase. With respect to car ownership, one car in a station-based car-sharing organization is considered to replace 7–15 privately owned cars. Free-floating car-sharing organizations also appear to reduce car ownership among their members, albeit to

a lesser extent. In contrast, bike-sharing systems rarely replace trips made by personal car, at least not in Europe; shared bikes are instead used primarily as an alternative to walking or public transport.

These transport-sharing services have the potential either to supplement or compete with public transport. The final result will presumably depend largely on how the sharing services are configured, how they are accommodated by the public sector, and the nature of the collaboration between public transport and the sharing services. Regarding car sharing, most studies indicate that station-based car-sharing organizations tend, on average, to lead to increased public transport use among their members (however, the individual-level impact depends largely on whether the individuals owned cars before membership). On the other hand, free-floating car-sharing organizations apparently tend to lead to decreased public transport use among their members.

One conclusion of the report is that these new transport services, along with changes in public transport, are blurring the boundaries between ride sharing, taxis, and public transport. If this trend continues, in the future public transport may well be defined simply as “travel using shared resources”, regardless of who is offering the trips. If this proves to be the case, the public sector will likely play a role in ensuring that all of these actors jointly create a system that provides accessibility for all at a reasonable price. In such a future, it would be reasonable to question whether the public sector should subsidize only “traditional” public transport, or whether subsidization should be expanded to apply to other forms of shared mobility as well.

Another conclusion is that, although these transport-sharing services may offer opportunities to reduce road traffic volumes, increase efficiency, and lower emissions, overall regulation promoting a sustainable, low-carbon transport system will be necessary for those opportunities to be realized. Without such government regulation, rebound effects could well negate the gains in efficiency arising from the individual sharing services, and the services could generate more car traffic rather than less. Regulation promoting sustainability may be needed in other areas as well, to prevent costs saved on driving from leading to increased consumption in other areas, resulting in new greenhouse gas emissions. Another way of looking at this is that the growth and spread of shared mobility services could make it easier to reduce car traffic volumes without the risk of degrading transport system accessibility.

Finally, it may prove challenging to induce the sharing services to cooperate with one another and with public transport in a positive way, so that we do not end up with a fragmented transport system in which it is difficult for the individual to combine different modes of transport seamlessly to get from door to door. One solution may be to consolidate the sharing services and public transport on a common platform, from which travellers could order customized trips combining various modes of transport.

Trafik analys

Trafikanalys är en kunskapsmyndighet för transportpolitiken. Vi analyserar och utvärderar föreslagna och genomförda åtgärder inom transportpolitiken. Vi ansvarar även för officiell statistik inom områdena transporter och kommunikationer. Trafikanalys bildades den 1 april 2010 och har huvudkontor i Stockholm samt kontor i Östersund.

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