



Contents lists available at ScienceDirect

Transportation Research Part A

journal homepage: www.elsevier.com/locate/tra

The role for carsharing in medium to small-sized towns and in less-densely populated rural areas

Lucia Rotaris*, Romeo Danielis

Dipartimento di Scienze Economiche, Aziendali, Matematiche e Statistiche, Università degli Studi di Trieste, P.le Europa, 1, 34100 Trieste, Italy

ARTICLE INFO

Keywords:

Carsharing
Potential demand
Business models
Less-densely populated areas

ABSTRACT

The recent strong growth of carsharing (CS) has taken place worldwide mainly in the large cities. We discuss whether there is a potential role for CS in medium to small-sized towns and in less-densely populated rural areas. In large cities CS is provided by large profit oriented firms, capable of offering efficient and flexible services, using the most advanced technologies with highly differentiated and customized prices. In lower density areas and small-to-medium size cities the challenges are much greater. The lower demand resulting from a complex of unfavorable factors (higher car ownership level, larger parking availability, low public transport service, fewer or absent taxi service and so on) requires a different business model for the provision of CS: more socially oriented, with a greater involvement of local municipalities and public transport operators to offer a service, most likely at favorable prices. The paper reports the results drawn from a survey on the potential demand for CS conducted in the Friuli Venezia Giulia region, Italy, a region characterized by small-sized towns and less-densely populated rural areas where CS is not currently offered. It is found that there is a not negligible demand (3.7% of the population holding a driving license) and that the likely users would be the ones that are better informed about CS, environmentally conscious and young. They would be more frequent among students or unemployed people, rather than among professionals, as in the more urban environments. It is also found that CS would mostly be used for non-commuting and longer trips.

1. Introduction

This paper discusses whether there is a potential role for Carsharing (CS) also in medium to small-sized towns and in less-densely populated rural areas. Although so far CS has proven to be a successful alternative to the private car in large cities, there is most likely a need for the introduction of this service also in smaller towns and rural areas. The scarce literature so far devoted to this topic (Perschl and Posch, 2016) has pointed out that CS in lower density areas is likely to face greater challenges than in large cities, mainly because the lower demand makes a profit oriented CS supply unviable.

This paper, having reviewed in Section 2 the recent trends in the CS demand and the main business models implemented, in Section 3 discusses the main challenges of implementing a CS service in low-density areas. The remaining part of the paper is devoted to presenting the results of a research focused on the potential demand in the Friuli Venezia Giulia (FVG) region, Italy, a region characterized by medium to small-sized towns and low-densely populated rural areas where the carsharing service is not provided yet. Section 4 describes the region. Section 5 reports an estimate of the potential CS demand, distinguishing by city size. Section 6 summarizes the results of an econometric analysis aimed at identifying the characteristics of the potential CS users in the FVG region.

* Corresponding author.

E-mail addresses: lucia.rotaris@deams.units.it (L. Rotaris), danielis@units.it (R. Danielis).

<http://dx.doi.org/10.1016/j.tra.2017.07.006>

0965-8564/ © 2017 Elsevier Ltd. All rights reserved.

2. Recent carsharing trends and business models

CS has exhibited high growth rates in many countries. Recent estimates for the Americas report that “as of January 1, 2015, there were 20 active programs in Canada, 23 in the United States (U.S.), one program in Mexico, and one in Brazil, totaling approximately 1,529,811 CS members sharing 22,134 vehicles.” (Shaheen et al., 2015). As of May 2015, Car2go, a subsidiary of Daimler AG which started operating in Germany in 2008 and which is probably the largest CS company in the world, operates over 13,000 vehicles with over 1,000,000 customers. As of February 2016, Car2go provides CS services in 30 cities worldwide (Austin, Düsseldorf, Hamburg, Vancouver, San Diego, Amsterdam, Vienna, Madrid, Washington, D.C., Portland, Oregon, Berlin, Toronto, Calgary, Cologne, Stuttgart, Seattle, Minneapolis–Saint Paul, Columbus, Denver, Munich, Milan, Montreal, Rome, Florence, Frankfurt, New York City, Stockholm, Turin, Arlington in Virginia, and Prato).¹ As it can be seen most cities are large cities (above 400,000 people), with the exception of Prato, Italy (near Florence). Car2go offers exclusively Smart Fortwo vehicles and features one-way point-to-point rentals. Users are charged by the minute, with hourly and daily rates available. The service forgoes the typical centralized rental office, and cars are user-accessed wherever parked via a downloadable smartphone app.

The successful business model run by Car2go, previously tested in various countries (for a history, see Shaheen et al., 2015), was soon adopted by many competitors (DriveNow, Stadtfliiter, Moebius, Choimobi Yokohama, see Shaheen and Cohen, 2015). In Italy, Enjoy, a joint company by Fiat, Trenitalia and Eni, started offering CS services in Milan in December 2013 (either red Fiat 500 or 500 L cars). As of February 2016, they have 644 cars in Milan, 600 cars in Rome, 200 cars in Florence, and 400 cars in Turin. In July 2015, they started offering for sharing 150 Piaggio MP3 scooters in Milan too.

The one-way point-to-point (also termed free-floating) CS system which, at least in Italy, thanks to its flexibility, greatly contributed to its popularity, is not the only business model in use, although it represents the last, technologically most advanced, and economically most successful business model. As often reported, the first reference to CS in print is the Selbstfahrergenossenschaft carshare program that got underway in Zürich in 1948, organized in a housing cooperative and which consisted of a club in which members shared the cost of a car, which was quite a luxury at the time. It was a privately shared service, which was based on friendship and not on official agreements (Schoenbeck et al., 1992; Shaheen et al., 2015).

In fact, several business models are possible, differing in four main aspects: 1) who owns and maintains the car; 2) what the aims of the organization offering the CS service are; 3) which operation model is implemented; and 4) who the targeted users are.

Since in the last decades CS has become a profitable business, most of the CS vehicles available in the modern cities are owned and maintained by a specialized CS firm. Interestingly, in Europe, the main firms offering CS services are subsidiaries of car manufacturing firms (e.g., Daimlers' Car2go, Volkswagen's DriveNow, and Fiat's Enjoy): promoting their own car is seen as an added value to the commercial profit. However, non-profit-oriented private community organizations (clubs), as in the case of the housing cooperative Selbstfahrergenossenschaft, are also possible albeit nowadays less common.² A third possibility is that CS is offered by state-sponsored, municipally-owned companies. In Italy such companies were the ones that launched the first CS services. They are coordinated by the Car Sharing Initiative (ICS, Iniziativa Car Sharing), promoted and financed by the Ministry of the Environment and Territory (Ministero dell'Ambiente e del Territorio)³ and managed by municipally-owned companies. As of February 2015, ICS coordinates 11 such companies, offering CS in 12 large and medium-sized towns (Bologna, Brescia, Florence, Genoa, Milan, Padua, Palermo, Parma, Rome, Scandicci, Turin e Venice) for a total of 666 cars, more than 22,500 users and 447 parking places. A fourth type of company offering CS services are the rail or public transport operators, directly or via subsidiary companies. They operate with cars located close to the train or bus stations, with the aim of providing an extra-service to their users (Steininger and Bachner, 2014). Finally, private individuals might decide to share their own private car with other persons (peer-to-peer CS).

Different providers have different aims. The modern large CS providers operating in large towns view CS as a commercial activity, which should make profits (or at least not lose money). Non-profit oriented, State-supported organizations pursue wider environmental, economic and social aims. For instance, they might want to increase the accessibility of low-income people who do not have the means to buy, park or maintain a private car or a second/third car in the case of larger families. Moreover, these organizations might pursue specific transportation goals, such as reducing parking needs or increasing rail or public transport attractiveness, which is typically the case when CS is offered by transport operators. In fact, these motivations might co-exist and the distinction between profit and social motives might be blurred, as in Italy where the Municipalities invite CS specialized firms, via a public tender, to organize the CS service in their city. They do so for wider environmental, transport-related and socio-economic reasons and use the tender to propose an economically viable deal to private CS firms. Setting the tender, they bargain on the type of cars to be offered (with a recent tendency to require electric cars) and on the rules of parking in the city centers (permissions and costs). If a city has a weak potential CS demand base, it does not cost much to allow CS cars to be parked in the city center (restricted traffic area). This represents an implicit subsidy to CS companies and users. The parking cost differential between parking a private car and parking a CS car can provide a strong incentive to use the CS service.

Operationally, CS is of two main types: roundtrip or one-way. Roundtrip CS means that the user has to collect the car from a CS station (on-street or off-street parking place) and return it to the same station. One-way CS does not require it. One-way CS can be station-based or free-floating. The former requires that the car is left in a parking place belonging to the CS organization. Free-floating

¹ It is no longer active in Ulm, Lyon, London, Birmingham, South Bay, Los Angeles, Eugene, Oregon, Copenhagen, and Miami.

² Coop. Car Sharing Trentino (<http://www.carsharing.tn.it/>)

³ ICS was created within the Decree dated March 27, 1998 with the aim of supporting the supply of CS services at a local level, to develop a national organizational and technological standard, to reduce the environmental impact of car traffic. In 2005 the financial endowment has been 10 million euros.

Download English Version:

<https://daneshyari.com/en/article/6779895>

Download Persian Version:

<https://daneshyari.com/article/6779895>

[Daneshyari.com](https://daneshyari.com)