

CARSHARING IN ITALY: AN ANALYSIS OF THE CURRENT CONTEXT

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ABSTRACT

Carsharing (hereafter CS) in Italy is getting importance as an alternative transport mode, that could contribute to a more sustainable urban mobility. Since 2000, thanks to *Iniziativa Carsharing* (ICS), the national coordination structure created to promote CS initiatives, many initiatives have been activated in several cities. The paper, after recalling the main characteristics of this service starting from the analysis of the literature on this topic, in the second part discusses the current situation of Milan's CS followed by the presentation of a brand new project of CS, called Green Move, promoted by Politecnico di Milano and funded by Lombardia Region. Green Move entails both the electric and peer to peer (hereafter P2P) dimensions in a CS project. In order to test the new service and to have a preliminary estimation of its attractiveness, a stated preference survey among Milan's citizens has been carried out. The very first results of this survey, concerning in particular the P2P dimension together with some policy considerations, are provided in the final part of the paper. To our knowledge, this represents the first attempt to estimate the potentiality of a P2P carsharing scheme through a specific market analysis.

Keywords: carsharing, P2P carsharing, sustainable mobility, survey, stated preference

INTRODUCTION

The increase in fuel price and the cost of buying and maintaining a car, made car ownership a crucial decision within an household; traffic jams, severe shortage of parking spaces but also a satisfactory and reliable local public transport may also influence this decision. In the last decade, carsharing (CS) has gained interest as a sustainable alternative both in environmental and economic terms (at least for some users); its recent growth is also due to

the active involvement of automotive industry¹ with several initiatives, mainly in Europe. In the last few years, a new trend of sharing emerged worldwide, whereas cars are not owned by a company, as in traditional CS scheme, but they are rented out by private owners to other members while the company acts more as an intermediary. This new scheme, known as peer to peer carsharing (P2P), has constantly grown over the past few years.

This paper, after discussing the main aspects of CS, presents some issues emerged from an academic project by Politecnico di Milano, aimed at merging the potentiality of traditional CS with that of a P2P scheme.

In the first part we analyze the literature on CS, evidencing its main impacts and the characteristics of its users. The concept of P2P carsharing is also presented, recalling the relatively scarce literature on this topic. In the second part, the case study of Milan is presented; starting from the current context, where two carsharing organizations are providing the service, we introduce the project *Green Move* by Politecnico di Milano funded by Lombardia Region. In the third part we will present the structure of a conducted survey and the very preliminary results, mainly focused on the P2P dimension. Final considerations will be drawn.

LITERATURE REVIEW

Traditional Carsharing

There is an extensive literature on CS. We briefly recall here the main and common features that have been observed in different experiences worldwide; further details can be found in the cited studies and in Laurino and Grimaldi (2012).

Literature on carsharing covers different aspects, ranging from the characteristics of both the users and the system, to the peculiarities that can make CS a viable alternative in urban contexts (TCRP, 2005; Sullivan and Magid, 2007). The socio-economic characteristics of the users (Andrew and Douma, 2006) and the overall impacts determined by the system (Cervero et al., 2007; Shaheen et al., 2007; Martin et al., 2010a, 2010b) have been also deeply studied. Evidence suggests that the typical carsharing user seems mostly a 25 – 45 years old man, single or living in small households (Harmer and Cairns, 2011; TCRP, 2005; Loose, 2010, Muhr, 2009,) well educated with median or higher than average income, cost sensitive and environmentally conscious (TCRP, 2005; Andrew and Douma, 2006; Cervero et al., 2007; Muhr, 2009) that lives in an area with a good public transport service and uses CS mainly for recreation/social activities (Synovate, 2007; TCRP, 2005; Cervero and Tsai, 2003).

Concerning the overall impacts of carsharing, reduction in vehicle ownership (TCRP, 2005; Martin et al., 2010a; Martin and Shaheen, 2010b; Shaheen et al., 2008), saved transport costs (Shaheen et al., 2008; Cervero et al., 2007; Barth and Shaheen, 2002), reduction in vehicle miles or kilometres travelled (Cervero and Tsai, 2003; Cervero et al., 2007; TCRP,

¹ DriveNow is a joint venture by the Munich-based automaker BMW and car-rental company Sixt, Quicar is a pilot project of Volkswagen, Car2Go is the Daimler program for its Smart city car.

2005; Shaheen and Cohen, 2007b; Koch, 2001) and in pollutants emissions (Martin and Shaheen, 2010b) represent the main effects of a CS scheme.

P2P carsharing

In the last few years, a new concept of carsharing emerged, both as a new business and operational model: P2P carsharing allows car owners to convert their personal vehicles into shared cars, which can be rented out to other drivers on a short-term basis (Hampshire and Gaites, 2011). According to Shaheen et al. (2012), 33 personal vehicle sharing operators could be listed worldwide,² the main initiatives are in the US.

In general, literature on P2P carsharing is relatively scarce due to the recent development of this scheme; here we will discuss the pros and cons of a pure P2P scheme where privately-owned cars are made temporarily available for shared use (for a deeper classification see Shaheen et al. 2012).

A P2P scheme entails a series of advantages:

- by spreading car ownership among many owners, it should avoid the problem of bearing the initial fixed cost of a new car fleet by a single investor;
- it should need lower users per shared car to be financially viable. Hampshire and Gaites (2011) estimated 10 users per car needed with respect to 25 for traditional car sharing;
- lower usage thresholds needed should make the service viable also in less dense areas, allowing a higher geographic coverage of the service;
- usually P2P systems are conceived as a market themselves, since the tariffs owners propose to users are free, so the system is more flexible in adapting to the real equilibrium between supply and demand.

Obviously, also many concerns exist on the actual viability of such a sharing system:

- people might not be willing to share their own car, that is considered a personal and intimate object;³
- the monetary compensation requested by car owner might be too high with respect to the willingness to pay of potential users. So a balance between owners' desired revenues and users' desired fees, is needed;
- vehicle supply and demand may not match (Shaheen et al., 2012);
- owners might be scared of improper usage of their car by unknown users, while users might be scared of unacceptable conditions (especially cleanliness) of shared cars. This problem might be partially solved using user rating and feedback systems, just like it happens on other P2P services on the internet;
- in cities where considerable parking problems exist, it might be very difficult for users to bring the car back to the place where the owner left it, or even in a reasonable radius of distance;

² May 2012 data.

³ A survey carried out in ten Italian cities (IPR, 2009) evidenced how the scarce propensity of drivers to share their own car is one of the main limits for the diffusion of carsharing in Italy.

- innovative insurance systems have to be developed in order to allow users, owners and possible third parties to be properly protected;
- fiscal issues should be faced according to countries' legislations.

In general, P2P carsharing should provide the same benefits of traditional CS in terms of less propensity to purchase new cars and to drive in general, with potential higher usage of public transport (second order benefit). Moreover, even if P2P cars would probably be on average older (and thus more polluting) than traditional car sharing vehicles, the service would use already existing resources, avoiding up and downstream environmental costs embedded with new car production.

Concluding, if expectations will be met, this should free a good potential of cars standing still for 90% of their time (Shoup, 2005), overcoming a series of obstacles often faced by traditional CS.

MILAN'S CASE STUDY

In Italy, CS has gained increasing importance thanks to the institution of a national co-ordination structure known as *Iniziativa Carsharing* (hereafter ICS), promoted by the Ministry of the Environment in October 2000. ICS supports (also financially) the set up of local CS services integrated in a standardised operational scheme (for further details on ICS and the Italian context see Laurino and Grimaldi, 2012). Among the ICS cities, Milan represents one of the most successful experience of CS. In the following part, after a short presentation of Milan's context, we will discuss its current CS initiatives and then the Green Move project will be presented.

Context characteristics

Milan is structured in a central business district (offices, business activities, services, etc), somehow coincident with the historical centre, entailing great mobility in the urban area, and a big and much more dispersed productive area outside the city.⁴

According to AMAT⁵ (2012), the citizens of Milan use their cars, on average, only 3% of the time while for the rest of the time cars sit idle on the streets or in garages.

In Milan there are 716,000 registered cars, representing almost 55 cars per 100 inhabitants. Over 50% of the movement of people is done with a private vehicle (car or motorcycle). Considering only the displacements that occur between Milan and the rest of the region, the value increases to 65%. The average car trips within the city is only about 4 km long while almost 50% of them is even less than 2.5 km. Over 40% of the overall mobility in Milan is determined by movements to and from the outside, which counts for about 850,000 people daily travelling to the city for work, study, access to services, entertainment and shopping. For similar reasons, almost 270,000 residents in Milan leave the city every day (AMAT, 2012). Considering the whole mobility in Milan's municipality area, 53% of the trips are made within the city (47% of which by public transport), while the rest are cordon trips (to enter or

⁴ The Municipality of Milan itself - with a population of 1.35 million inhabitants - is the core of a spread metropolitan area of up to 5.2 million inhabitants (see for example Calafati and Veneri, 2009).

⁵ Mobility Agency of Milan.

exit from the urban area, 31% by public transport) that in part start from (or end in) municipalities included in the first belt around Milan (AMMA, 2006).

Carsharing initiatives in Milan

Milan has been a pioneer in Italy for CS and it formerly had two organizations providing the service. The first one, *Carsharing Italia*, was created in 2001 by the environmental association “Legambiente”. The second one, *GuidaMi*, born in 2004, was supported by the municipality of Milan and by the Ministry of the Environment. In 2007, the Local Public Transport company ATM Group (owned by Milan’s municipality) took control of *GuidaMi*, followed in 2010 by the acquisition and merger of the other CS operator in Milan, *Carsharing Italia*.

GuidaMi is a traditional CS service, based on a fleet distributed in the city, where users pay an annual fee (120 €, that can be reduced by 50% if the member has a season ticket to public transport) and a fare on a distance and time principle, according to the type of vehicle chosen. Figure 1 considers the trend for *GuidaMi* members.

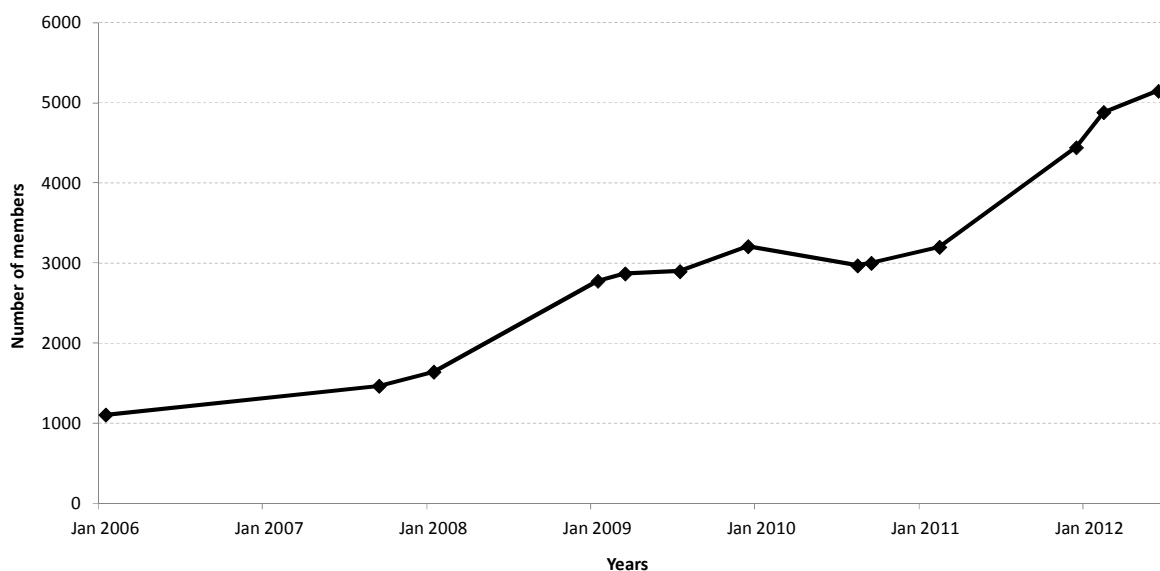


Figure 1 - *GuidaMi* members (Source: Laurino and Grimaldi, 2012)

In December 2010, a new initiative of electric CS has been launched in Milan, known as *Evai*. It is run by FNM Group (the main transport and mobility group in Lombardy, owned by the Regional Government). Even if *Evai* fleet comprises also traditional vehicles, the initiative focuses mainly on electric cars. Fares are based on two schemes; the “gold” one foresees an annual fee (100€), plus an hourly fare for the electric car, while the “silver” scheme foresees a 5€ fee per each use plus the hourly rate.

Even if detailed data on ridership are not available,⁶ it seems that, until now, the two initiatives have had relatively scarce impact on Milan’s urban mobility. Two factors can partially explain these results. Firstly, both initiatives are based on a two-way scheme (i.e. car should be returned to the initial location). Secondly, the sole *Guidami*, in the last few

⁶ According to ICS website, in June 2012, *Guidami* had 5,147 members, 134 cars and 80 parking lots (website accessed on January 2013).

years, has increased the geographic coverage of its cars (i.e. the possibility of having a car in a short walk distance from home) and finally the fares level - and the presence of an annual fee - may have acted as a barrier for new customers. *Evai*, to the contrary, remains a niche service with very limited access points.

Starting from these experiences, the Green Move project by Politecnico di Milano (hereafter GM), has sought to develop service configurations capable of meeting specific users' needs with a degree of innovation and differentiation from current initiatives. In fact, GM tries to merge the potentiality of electric vehicles in urban context (no local emission, good distance autonomy, etc) with that of P2P scheme; this fact can help to overcome the limitations of a two-way scheme increasing in the same time the geographic coverage at a relatively low cost. In the next paragraph we will discuss in deep GM project, evidencing its peculiarities.

THE GREEN MOVE PROJECT

The GM project is a research initiative by Politecnico di Milano (Italy), funded by Lombardia region, aimed at designing and testing a vehicle sharing system to be implemented in the city of Milan. For further details about the project see Luè et al. (2012). Here we will only summarize the main features of the initiative in order to provide the scenario for the presentation of the stated preferences survey recently carried out. Even if the general idea of GM entails a multi-vehicle fleet to supply a wide range of mobility needs, here we will focus only on the "car" side of the project.

GM could be defined according to two basic principles: multi-ownership and multi-business (Luè et al., 2012). The first one means that GM allows single users, private companies and institutions to join the service, both using vehicles directly provided by GM structure (according to a traditional scheme of fleet owned by the operator) and also providing their personal (ICE or electric) car or fleet according to a more general P2P scheme. To allow any car owner to get involved in GM, a specific device, called *Green e-box*, will be installed on the vehicle allowing a key-less-mobility for the users that, through their personal smartphones, will access the wider green move fleet (for further details see also Alli et al., 2012). The *Green e-box* will allow the inclusion into the service to any vehicle and consequently to any user.

The multi-business dimension means that the standardized way to join the system gives the possibility to design alternative services and flexible mobility solutions, since any initiative has just to implement the protocols defined in GM. This approach will then extend the concept of "sharing" to a wider range of different typology of users and communities.

According to these two principles, four typologies of service configurations have been defined within the project⁷ (all of them entailing, in different ways, also the P2P dimension):

1. General-purpose carsharing service;

⁷ Source: Politecnico di Milano (2012), *Green Move: Obiettivi e configurazioni di servizio*, Report 1.

2. Condominium-based carsharing: service designed for those who live in the same building that need a car for short term and short distance trip within the neighbourhood (the car could be owned by a single tenant or by the GM operator) ;
3. Firms-based carsharing: service designed for those who work in the same company where the company fleet (or even directly employees' cars) can be used by the company, as a company car during the day, and by employees for personal use outside of working hours (evenings and weekends).
4. Services-based carsharing: service which aims at providing a fleet of vehicles to reach, according to a one-way scheme, the main services (malls, cinema, hospitals, etc.) and places of Milan (historical centre, parks, public transport stations, etc.) with which the car-sharing service is integrated (e.g. the customer, thanks to the *Green e-box* device, can buy directly on board, and at a reduced price, the ticket for the services, cinema/museum etc., he/she wants to reach).

THE PROJECT OF A STATED PREFERENCES SURVEY

Due to the innovative and complex nature of the GM initiative, a survey was planned in order to test the attractiveness of the project and to estimate its potential demand, both in terms of potential sharers and of potential users. The final goals were to define the potential demand, the possible behaviour of the users in different scenarios, the impacts of the service attributes on the overall attractiveness of the service and the relevance of various socio-economic and neighbourhood characteristics on the choice to join the service or not.

The sample

The sample has been built in order to have the best representation of Milan's population. In particular, we considered men and women living in Milan, distributed according to their working condition (80% workers, 20% unemployed), education (32% graduated, 68% not graduated) and age (see Figure 2).

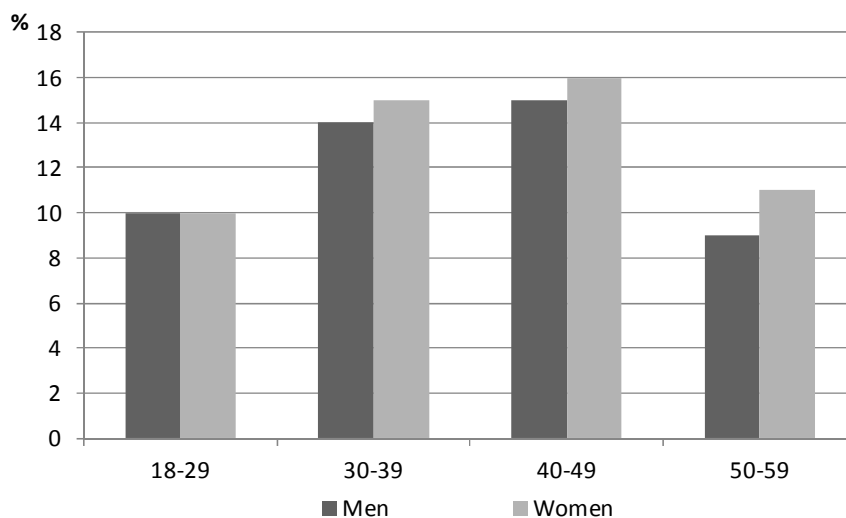


Figure 2 - Sample distribution by age and gender

The last part of the survey collected further information in order to better define respondents' characteristics:

- Household size;
- Number of vehicles in the household and its variation in time;
- Means of transport most frequently used to move;
- Average distance made annually by car;
- Typical trip made by car (shopping, visit parents, etc.);
- Characteristics of the cars owned.

The total sample was composed by 1,211 respondents, among them only 25 stated that they had no car in the household.

The structure of the questionnaire

The questionnaire, built by Politecnico together with TRT – Trasporti e Territorio, the company that also performed some preliminary analysis of the results, was structured in five parts and required approximately 20 minutes to be completed. In particular, it considered:

1. Respondents' socio-economic characteristics;
2. Stated preferences exercises aimed at testing the propensity to share the personal vehicle and the desired amount of money to take part to the service;
3. Stated preferences exercises aimed at testing the attractiveness of some carsharing service configurations;
4. Previous knowledge of carsharing services and possible use of the service for respondent's mobility habits;
5. Respondent's mobility habits.

Each section was composed by several closed questions, in particular, in section 2 and 3 respondents were asked to make various choices between hypothetical alternatives and to indicate how they would behave in hypothetical situations.

Concerning the configurations presented in section 3, each one was characterized by four variables (each one with a maximum of three different values possible). The combination of these variables determined different scenarios for the four configurations defined in GM. In particular the variable introduced were those in Table 1.

VARIABLE NAME	DESCRIPTION	POSSIBLE VALUES
<i>Fixed fee</i>	Annual fare to join the service	0 € – 30€ – 100€
<i>Variable fee</i>	Cost related to the usage of the service	3 €/h – 5€/h – 7 €/h
<i>Geographic coverage of the service</i>	Average time needed to reach the nearest parking lot	3 min – 5 min – 7 min
<i>One – way trip</i>	Indicates whether the car can be returned in a parking lot different from the initial one	1 if the one – way service is possible otherwise 0

Table 1 - Variables describing the four configurations in Green Move

Technology used

Using the CAWI technology,⁸ IPSOS, the market research company chosen to perform the online survey, sent the questionnaire to a pre-defined panel of users living in Milan. Given the complexity of the research and the need to have a sufficiently large sample, CAWI technology seemed the best solution for being more flexible and for having a graphic interface more user-friendly. The survey was launched in November 2012 and it was conducted exclusively online.

Being a self-administered questionnaire, highly dependent from the level of attention and cooperation of the respondents, the results cannot guarantee that respondents will actually behave as they stated; nonetheless, the survey provides a good proxy of the attractiveness of the service and its potential demand. In the next paragraph we will discuss the preliminary results of the survey.

SURVEY DESIGN

Stated preferences on sharing the owned car

In section 2, respondents were asked their interest in sharing their personal car, when not using it, in exchange of a monetary compensation. In particular, respondents were presented a hypothetical scheme with the following assumptions:

- Place and time for collecting / returning the car decided by the owner;
- Total insurance coverage;
- Total guarantee on the condition of the car (e.g. cleanliness) after each use;
- No need for keys handover thanks to the on-board device.

Respondents were asked whether they would join this service and the moment of the day (first morning, afternoon, night, etc.) they would be willing to make their car available.

⁸ CAWI means "Computer-Assisted Web Interviewing" or "Computer-Aided Web Interview". It is a technology for on-line surveys, through which the interviewees respond to questionnaires via the Internet.

Then, in order to have a proxy of the threshold of the projected revenues for the owners, respondents were asked the desired net monthly amount of money to join the service sharing their car. The same exercise was then proposed presenting an hypothetical scenario where respondents were asked the amount of money required to join after purchasing an electric vehicle. The latter part aimed at preliminary testing the potentiality of electric car.

Stated preferences on using a carsharing service

In section 3, respondents were asked their interest in using a carsharing service. To every respondent two different hypothetical scenarios were presented,⁹ obtained from the four service configurations (general, condominium-based, firms-based, services-based carsharing) defined within the GM project. Every single scenario then had a combination of possible alternatives, obtained combining the four variables characterizing the configurations.

Combination	Fixed Fee (Euro/year)	Variable Fee (Euro/hour)	Geographic coverage (minutes to reach the nearest parking lot)
1	0	5	12
2	100	5	3
3	0	7	6
4	30	7	3
5	100	3	6
6	100	7	3
7	30	3	12
8	30	5	6

Table 2 – Example of list of alternatives to be ranked by respondents

Respondents were asked to choose the most attractive alternative and then to indicate the probability to join it. Subsequently they were asked to rank the remaining alternatives according to the probability to join them.

PRELIMINARY DATA ANALYSIS

In this section we will discuss the very preliminary results of the stated preferences exercises concerning the P2P dimension. At the moment of writing, only preliminary information are available from the survey. Notwithstanding, due to the innovative nature of the P2P dimension also the first results of the sharing part of the questionnaire are interesting.

Sample analysis

In order to better understand respondents' answers, we performed some analysis based on the information provided in section 1 and 5. Considering the number of cars in the household and the average distance made yearly, we observe that the majority of respondents (92%) have 1 or 2 cars that are driven, in the majority of the cases, for less than 10,000km a year.

⁹ According to some socio-economic characteristics such as the employment status (crucial for the *Firm-based carsharing*) or the type of dwelling (crucial for the *condominium-based carsharing*)

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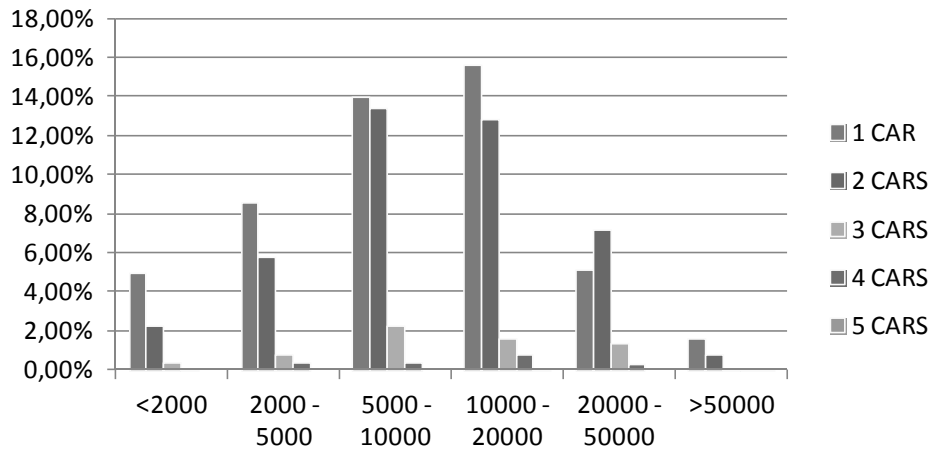


Figure 3 - Average distance according to the number of cars in the household

Figure 3 shows how, more than half of the sample (52.9%), drives less than 10,000km regardless of the number of cars in the household. Moreover, 48.81% of them has 1 or 2 cars.

These two information seem to suggest that cars are seldom used and thus a reliable CS service could favour the shift from the private to the shared car.

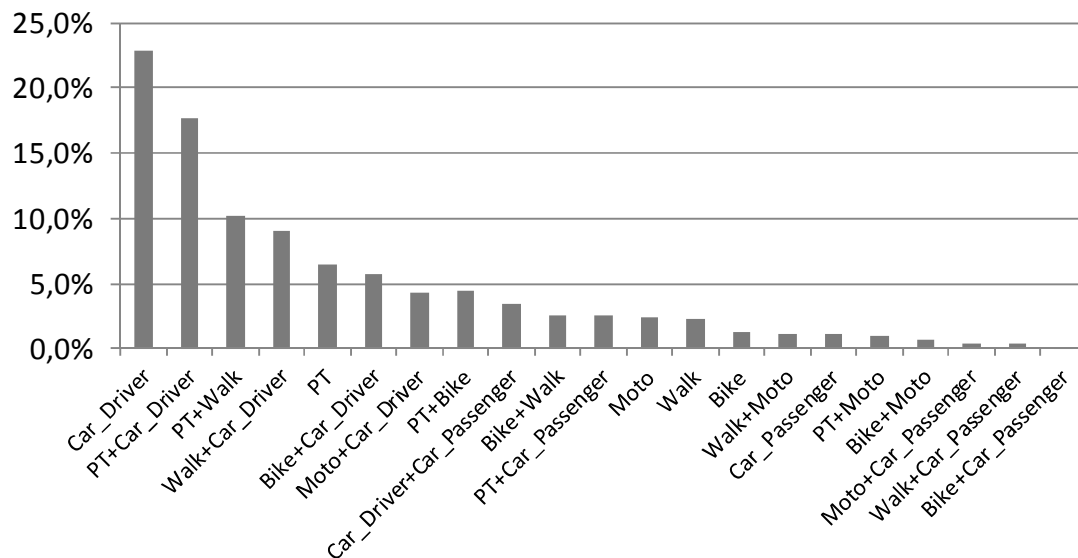


Figure 4 - Means of transport most frequently used

Figure 4 analyses the means of transport more frequently used by respondents.¹⁰ It clearly reflects the dominance of the car, that is the first mode used to move within and outside Milan. Public transport, also combined with other modes, has a relevant importance too. It must be noticed that a carsharing service is seen differently according to these categories. Car users, probably, are the less interested in CS, with the exception of those using car only marginally and that would drop one of the family cars. Public transport users, instead, might be more interested in CS, but they will probably not use it on a regular basis, as they probably already use the public transport for their commuting trips.

¹⁰ They were asked to indicate the two means most used to move.

SP on peer to peer carsharing

As presented in the previous paragraph, the first SP exercise aimed at testing the propensity to share the personal car after presenting an hypothetical P2P service.

In general the majority of respondents (55%) provided a general positive answer. It is interesting to see their preference¹¹ when asked among who they would like to share their car with (Table 3).

ALTERNATIVE	%
Among all the members	36.4%
Only among a small group of people set by me	53.9%
Only among my neighbours	5.7%
Only among my colleagues at work	4.0%

Table 3 – Distribution of the preferences related to the sharing of the owned car

The higher propensity to share the car among a pre-defined group of user seems to confirm the idea in Shaheen et al. (2012), to focus exclusively on sharing between “affinity pre-established trusted community members” in order to face the fear of sharing. Table 4 presents the main reasons provided in case of negative responses.

ALTERNATIVE	%
No, because the car is a personal object	36,3%
No, because I always want to have my car available	47,9%
No, because I do not need to deprive myself of my car in exchange of money	10,8%
Other reasons	5,0%

Table 4 – Distribution of the reasons against the sharing

The idea of car as a personal object confirms other studies (IPR, 2009; Shaheen et al. 2012) and strengthens the perception of a car as individual's most valued possessions, which entails the fear of sharing it.

Analyzing the responses with respect to the socio-economic characteristics of the sample, we observe that men are slightly more interested than women (59% versus 51%), while younger respondents seem more favourable to this service than older ones; in particular the over-50 are less favourable to share their car (54% no). Graduated respondents are slightly more willing to share, while we can see no relevant differences with respect to the employment status. In this last case, it might be that both workers and not workers see the P2P scheme as an interesting source of revenue.

The respondents available to share their car were also asked the amount of money desired to join the service presented. In order to obtain a rough approximation of the price thresholds, we used a bisection method that proposed a series of thresholds to the respondents starting from 30€/month.¹²

¹¹ Only one choice was possible

¹² In order to make the survey understandable and easy to fill in, we did not ask respondents to specify the number of hours of availability for their car, which means that we cannot correlate the monthly amount of money desired with the hours of availability respondents had in mind in filling the survey.

The first results, to be further analyzed and elaborated according to respondents' socio-economic characteristics, seem to suggest the existence of thresholds of acceptability under which the availability to share the personal vehicle drops.

In the second part of the survey, starting from the amount of money stated for sharing the personal car and assuming the same hypothetical CS system, we then asked respondents to indicate the revenues desired to buy a new electric car and then share it, assuming to recover, through the renting out of the car, the cost difference between an electric and a conventional vehicle. Data show a similar trend, while the thresholds are higher to consider the need to cover also the cost of the car.

Finally, in order to have indications concerning the distribution along the day of the availability to share the personal car, respondents were also asked to indicate the moment of the day in which they were willing to share their cars. The data show that there is not a specific moment of the day in which car owners agree to make their cars available; in general, late afternoon has a lower availability value while the maximum one is recorded in early morning hours.

CONCLUSION AND NEXT STEPS

The paper discusses an innovative CS project promoted by Politecnico di Milano aimed at increasing sustainable mobility, merging traditional and innovative forms of CS. Milan seems to fit all the characteristics that could make a P2P scheme viable, due to its context peculiarities and the mobility characteristics of its citizens: high car ownership (almost 55 cars per 100 inhabitants), very low average use of cars (3% of the time while for the rest of the time sitting idle, on the streets or in garages), predominance of short trips (only about 4 km long within the city, with almost 50% of them even less than 2.5 km long). In addition, considering the whole mobility in Milan's area, the majority of the trips are made within the city while the rest are cordon trips (to enter or exit from the urban area) that in part start (or end) from municipalities included in the first belt around Milan (AMMA, 2006). Public transport share and coverage are quite high. All these elements seem to suggest that relying upon the private car for mobility needs in Milan could be easily reduced if alternative mobility solutions are introduced.

The survey conducted within GM project aimed at testing the idea of a personal vehicle sharing system among Milan's citizens in order to obtain a preliminary estimation of the potentiality of this service.

The preliminary results show a significant number of cars driven less than 10,000km a year (52.9%). According to TCRP (2005), this mileage could represent the threshold for the cost-effectiveness of a CS.

Moreover, the survey results evidence how geographical coverage and the possibility of one-way trips seem to be the two characteristics that could affect the attractiveness of a CS scheme more. Concerning the P2P dimension, the survey evidenced a good general propensity of respondents towards sharing the personal car (55% would share it); in

Since the primary idea of the survey was to test the attractiveness of the idea and have a rough approximation of the price elasticity, we accepted this flaw.

particular, even if 36.4% of those available to share stated that they will share the car among all the members, the majority stated that they would prefer to share their car among a smaller community of trusted people (friends, parents, colleagues). This point, together with the concerns about P2P scheme related to the perception of the car as a personal object, evidence the presence of psychological barriers towards this new scheme.

Econometric analyses aimed at deeply studying the survey results on the CS and P2P dimensions are still undergoing, in general it seems that Milan matches the characteristics that could make a P2P scheme a viable alternative to private car.

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