**Danielis, R., Rotaris, L. (2015) In search of potential markets for carsharing services. Appendix and tables**

# Appendix

Table 12 – State-supported CS organizations

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| City  | Company | Starting date | Cars   | Users\*\*  | Parking places | Inhabitants (103) |
| Bologna | [Io Guido](http://www.atccarsharingbologna.it) | Aug. 2002 | 39 | 1159 | 28 | 378 |
| Brescia  | [Carsharing Brescia](http://www.carsharingbrescia.it) | Febr. 2010 | 6 | 120 | 5 | 192 |
| Firenze | [Carsharing Firenze](http://www.carsharingfi.it) | Apr. 2005 | 16 | 613 | 16 | 370 |
| Genova and Savona | [Genova carsharing](http://www.genovacarsharing.it) [Savona carsharing](http://www.savonacarsharing.it) | July 2004June 2009 | 55 | 2339 | 45 | 60865 |
| Milano[[1]](#footnote-1) | [GuidaMI](http://www.atm.it/it/guidami/Pagine/default.aspx) | Sept. 2001 | 137 | 6.530 | 75 | 1316 |
| Padova | [Carsharing Padova](http://www.carsharingpadova.it) | Sept. 2011 | 11 | 143 | 11 | 213 |
| Palermo | [Carsharing Palermo](http://www.carsharingpalermo.it) | March 2009 | 46 | 1104 | 44 | 677 |
| Parma | [Infomobility](http://www.infomobility.pr.it) | Febr. 2007 | 10 | 372 | 10 | 185 |
| Roma | [Carsharing Roma](http://www.carsharing.roma.it) | March 2005 | 115 | 3313 | 78 | 2753 |
| Torino | [Car City Club](http://www.carcityclub.it) | Nov. 2002 | 121 | 2420 | 76 | 908 |
| Venezia | [ASM Venezia](http://www.asmvenezia.it) | Aug. 2002 | 44 | 4018 | 18 | 270 |
| Totale |  |  | 600 | 22131 | 406 |  |

*\*\* active users. The members are about 20% more*

*Source: ICS website (visited February, 2015)*

Table 13 – Level of knowledge, potential use and sustainable mobility of CS

|  |  |  |  |
| --- | --- | --- | --- |
|  | Age | City size (inhabitants)§ | Total§§ |
| Rating | 18-25 | 26-65 |  >65 | < 20 th. | 20-50 th. | Pordenone | Udine | Trieste |  |
| Level of knowledge (1=none, ….., 5=very good) – values in % |
| 1 | 27 | 15 | 43 | 26 | 14 | 29 | 19 | 27 | 23 |
| 2 | 28 | 23 | 33 | 29 | 26 | 30 | 26 | 23 | 26 |
| 3 | 24 | 27 | 13 | 21 | 25 | 17 | 28 | 28 | 24 |
| 4 | 14 | 23 | 6 | 15 | 25 | 17 | 12 | 14 | 17 |
| 5 | 7 | 12 | 4 | 8 | 11 | 6 | 16 | 9 | 9 |
| Potential use (1=definitely no, 5=definitely yes) – values in % |
| 1 | 25 | 45 | 82 | 30 | 56 | 54 | 26 | 31 | 38 |
| 2 | 29 | 28 | 8 | 30 | 35 | 10 | 19 | 22 | 27 |
| 3 | 24 | 14 | 5 | 21 | 5 | 10 | 26 | 26 | 18 |
| 4 | 13 | 6 | 3 | 11 | 3 | 12 | 14 | 12 | 9 |
| 5 | 9 | 7 | 1 | 8 | 1 | 14 | 16 | 9 | 7 |
| Sustainable mobility concept (1=not important, 5=very important) – values in % |
| 1 | 3 | 2 | 1 | 2 | 2 | 0 | 2 | 2 | 2 |
| 2 | 8 | 10 | 16 | 9 | 16 | 1 | 5 | 9 | 10 |
| 3 | 30 | 27 | 25 | 31 | 30 | 19 | 23 | 27 | 28 |
| 4 | 30 | 35 | 39 | 32 | 38 | 36 | 30 | 29 | 33 |
| 5 | 29 | 26 | 19 | 26 | 14 | 43 | 40 | 33 | 27 |

§ The cities of residence of the respondents are subdivided into 5 groups: less than 20 thousand inhabitants, between 20 and 50 thousand inhabitants, Pordenone (51 thousand inhabitants), Udine (100 thousand inhabitants) and Trieste (the largest city with 209 thousand inhabitants).

§§ The last column reports the values in % terms irrespective of the distinction by age or city size.

Table 14 – Car availability and likely CS use (1=definitely no, …. 5=definitely yes) – values in %

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cars per license\likely CS use | 1 | 2 | 3 | 4 | 5 |
| 0 | 26 | 8 | 31 | 18 | 18 |
| Between 0 and 0.5 | 40 | 23 | 18 | 10 | 8 |
| Between 0,5 and 1 | 31 | 29 | 20 | 11 | 9 |
| 1 | 46 | 30 | 14 | 6 | 4 |
| More than 1 | 21 | 32 | 32 | 14 | 0 |
| Total | 38 | 27 | 18 | 9 | 7 |

Table 15 - Modal share for home-work\college by age – values in %

|  |
| --- |
| Current modal share |
| Age | Car | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| 18-25 | 31 | 7 | 24 | 20 | 0,1 | 17 | 2 |
| 26-65 | 54 | 9 | 9 | 9 | 0,2 | 11 | 8 |
| Above 65 | 66 | 0 | 5 | 2 | 0,0 | 14 | 12 |
| Total | 43 | 8 | 16 | 14 | 0,1 | 14 | 5 |
| Modal share if CS was available, but car was not available |
| Age | CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| 18-25 | 20 | 10 | 29 | 22 | 0,0 | 16 | 3 |
| 26-65 | 15 | 18 | 24 | 16 | 0,4 | 11 | 16 |
| Above 65 | 5 | 3 | 43 | 4 | 8,5 | 14 | 22 |
| Total | 17 | 13 | 27 | 18 | 0,5 | 14 | 10 |
| Change in the modal share  |
| Age | Car\CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| 18-25 | -10 | 3 | 5 | 2 | -0,1 | -1 | 1 |
| 26-65 | -40 | 9 | 15 | 7 | 0,2 | 0 | 8 |
| Above 65 | -61 | 3 | 38 | 2 | 8,5 | 0 | 10 |
| Total | -25 | 5 | 11 | 4 | 0,4 | 0 | 5 |

Table 16 - Modal share for home-work\college by city size– values in %

|  |
| --- |
| Current modal share |
| Inhabitants | Car | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| Less than 20 th. | 39 | 2 | 20 | 19 | 0,1 | 18 | 2 |
| 20-50 th. | 57 | 1 | 4 | 16 | 0,0 | 9 | 12 |
| Pordenone | 48 | 0 | 16 | 16 | 0,0 | 9 | 11 |
| Udine | 29 | 0 | 16 | 25 | 0,0 | 23 | 7 |
| Trieste | 35 | 22 | 23 | 5 | 0,3 | 13 | 2 |
| Total | 43 | 8 | 16 | 14 | 0,1 | 14 | 5 |
| Modal share if CS was available, but car was not available |
| Inhabitants | CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| Less than 20 th. | 20 | 6 | 30 | 22 | 0,5 | 17 | 5 |
| 20-50 th. | 10 | 9 | 22 | 26 | 0,6 | 10 | 23 |
| Pordenone | 14 | 9 | 20 | 21 | 0,0 | 9 | 26 |
| Udine | 18 | 0 | 22 | 25 | 0,0 | 24 | 10 |
| Trieste | 21 | 26 | 31 | 7 | 0,6 | 13 | 2 |
| Total | 17 | 13 | 27 | 18 | 0,5 | 14 | 10 |
| Change in the modal share |
| Inhabitants | Car\CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| Less than 20 th. | -19 | 4 | 10 | 2 | 0,4 | -1 | 3 |
| 20-50 th. | -47 | 8 | 18 | 9 | 0,6 | 0 | 11 |
| Pordenone | -33 | 9 | 4 | 5 | 0,0 | 0 | 15 |
| Udine | -11 | 0 | 6 | 1 | 0,0 | 1 | 3 |
| Trieste | -14 | 4 | 8 | 2 | 0,3 | 0 | 0 |
| Total | -25 | 5 | 11 | 4 | 0,4 | 0 | 5 |

Table 17 - Modal share for other-than-home-work\college trip by age – values in %

|  |
| --- |
| Current modal share |
| Age | Car | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| 18-25 | 57 | 6 | 11 | 9 | 0,7 | 13 | 3 |
| 26-65 | 68 | 7 | 4 | 2 | 0,0 | 11 | 8 |
| Above 65 | 66 | 2 | 4 | 2 | 0,0 | 20 | 6 |
| Total | 63 | 6 | 8 | 5 | 0,3 | 13 | 5 |
| Modal share if CS was available, but car was not available |
| Age | CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| 18-25 | 35 | 11 | 22 | 10 | 1,2 | 14 | 6 |
| 26-65 | 23 | 18 | 25 | 8 | 0,8 | 11 | 13 |
| Above 65 | 8 | 4 | 43 | 4 | 9,3 | 20 | 11 |
| Total | 28 | 14 | 25 | 9 | 1,7 | 13 | 9 |
| Change in the modal share  |
| Age | Car\CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| 18-25 | -22 | 6 | 11 | 2 | 0,5 | 1 | 2 |
| 26-65 | -41 | 10 | 21 | 6 | 0,8 | 0 | 5 |
| Above 65 | -30 | 1 | 19 | 2 | 9,3 | 0 | -1 |
| Total | -31 | 7 | 16 | 4 | 1,3 | 0 | 3 |

Table 18 - Modal share for other-than-home-work\college trips by city size– in %

|  |
| --- |
| Current modal share |
| Inhabitants | Car | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| Less than 20 th. | 63 | 2 | 8 | 11 | 0,1 | 12 | 4 |
| 20-50 th. | 74 | 5 | 1 | 0 | 1,0 | 10 | 9 |
| Pordenone | 57 | 2 | 6 | 2 | 0,0 | 20 | 13 |
| Udine | 52 | 3 | 12 | 7 | 0,0 | 19 | 8 |
| Trieste | 56 | 12 | 12 | 3 | 0,2 | 13 | 3 |
| Total | 63 | 6 | 8 | 5 | 0,3 | 13 | 5 |
| Modal share if CS was available, but car was not available |
| Inhabitants | CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| Less than 20 th. | 32 | 10 | 23 | 14 | 0,8 | 12 | 7 |
| 20-50 th. | 24 | 12 | 24 | 8 | 3,0 | 11 | 17 |
| Pordenone | 24 | 7 | 22 | 3 | 0,0 | 22 | 23 |
| Udine | 40 | 5 | 19 | 4 | 2,3 | 19 | 10 |
| Trieste | 26 | 20 | 28 | 7 | 1,7 | 14 | 3 |
| Total | 28 | 14 | 25 | 9 | 1,7 | 13 | 9 |
| Change in the modal share |
| Inhabitants | Car\CS | Motorcycle | Bus | Train | Taxi | Foot | Bicycle |
| Less than 20 th. | -31 | 8 | 15 | 3 | 0,7 | 0 | 3 |
| 20-50 th. | -50 | 7 | 23 | 8 | 2,0 | 1 | 9 |
| Pordenone | -34 | 6 | 15 | 0 | 0,0 | 2 | 10 |
| Udine | -12 | 2 | 7 | -2 | 2,3 | 0 | 2 |
| Trieste | -30 | 8 | 16 | 3 | 1,5 | 1 | 0 |
| Total | -35 | 8 | 17 | 4 | 1,3 | 1 | 4 |

Excel interface for data collection for the detailed, face-to-face, computer-assisted interview.

The rows in *italics* are generated by the software based on the previous information on the mobility patterns and on assumptions and information about the regional fares:

Table 19 – Private car costs module

|  |
| --- |
| **If you own a car, please answer the following questions** |
| How much does your car cost? | *€* |  |
| After how many years do you think that the market value of your car will be zero? | n° |  |
| How much do you pay in road tax? | *€* |  |
| How much do you pay for insurance? | *€* |  |
| How much do you value the risk of uninsured theft or damage to your car? | *€* |  |
| How much do you pay for the annual ordinary and extraordinary maintenance? | *€* |  |
| How much would you pay annually for avoiding the nuisance of having to care about maintaining and refuelling your car? | *€* |  |
| What is the opportunity cost of your private garage? | *€* |  |
| How much do you pay for parking every week? | *€* |  |
| How much time do you spend looking for a parking place every week? | *min.* |  |
| How much would you pay to avoid the nuisance of looking for a parking place for 10 minutes? | *€* |  |
| How much do you rate the pleasure of owning a car in monetary terms? | *€* |  |
| What is the sum that you would be willing to accept to give up your private car? | *€* |  |
| *Annual monetary expenses:* | *€* |  |
| *Annual depreciation costs:* | *€* |  |
| *Annual opportunity costs:* | *€* |  |
| *Net non-monetary costs (excluding the cost for the time spent in the vehicle):* | *€* |  |
| *Total monetary and non-monetary costs (excluding the cost for the time spent in the vehicle):* | *€* |  |

Table 20 – Motorcycle costs and benefits module

|  |
| --- |
| **If you own a motorcycle, please answer the following questions** |
| How much does your motorcycle cost? | € |  |
| After how many years do you think that the market value of your motorcycle will be zero? | n° |  |
| How much do you pay in road tax? | € |  |
| How much do you pay for insurance? | € |  |
| How much do you value the risk of uninsured theft or damage to your motorcycle? | € |  |
| How much do you pay for the annual ordinary and extraordinary maintenance? | € |  |
| How much would you pay annually for avoiding the nuisance of having to care about maintaining and refuelling your motorcycle? | € |  |
| How much do you rate the pleasure of owning a motorcycle in monetary terms? | € |  |
| What is the sum that you would be willing to accept to give up your private motorcycle? | € |  |
| *Annual monetary expenses:* | *€* |  |
| *Annual depreciation costs:* | *€* |  |
| *Annual opportunity costs:* | *€* |  |
| *Net non-monetary costs (excluding the cost for the time spent on the vehicle):* | *€* |  |
| *Total monetary and non-monetary costs (excluding the cost for the time spent on the vehicle):* | *€* |  |

Table 21 – Bicycle costs and benefits module

|  |
| --- |
| **If you own a bicycle, please answer the following questions** |
| How much does your bicycle cost? | € |  |
| After how many years do you think that the market value of your bicycle will be zero? | n° |  |
| How much do you rate the pleasure of cycling in monetary terms? | € |  |
| How much do you rate the nuisance of cycling in monetary terms? | € |  |
| *Annual monetary expenses:* | *€* |  |
| *Annual depreciation costs:* | *€* |  |
| *Annual opportunity costs:* | *€* |  |
| *Net non-monetary costs (excluding the cost for the time spent on the vehicle):* | *€* |  |
| *Total monetary and non-monetary costs (excluding the cost for the time spent on the vehicle):* | *€* |  |

Table 22 – Bus costs and benefits module

|  |
| --- |
| **If you use the bus, please answer the following questions** |
| Do you buy single tickets? |   |  |
| Do you buy the 10 tickets card? |   |  |
| Do you buy the monthly season ticket? |   |  |
| Do you buy the annual season ticket? |   |  |
| *Total annual costs (excluding the cost for the time spent in the vehicle):* | *€* |  |

Table 23 – Train costs and benefits module

|  |
| --- |
| **If you use the train, please answer the following questions** |
| Do you buy single tickets? |  |  |
| Do you buy the fortnightly ticket? |   |  |
| Do you buy the monthly season ticket? |   |  |
| Do you buy the annual season ticket? |   |  |
| *Total annual costs (excluding the cost for the time spent in the vehicle):* | *€* |  |

 Table 24 – Taxi costs and benefits module

|  |
| --- |
| **If you use the taxi, please answer the following questions** |
| *Total annual costs (excluding the cost for the time spent in the vehicle):* | *€* |  |

Table 25 – Walking costs and benefits module

|  |
| --- |
| **If you walk to reach your work\non work destinations, please answer the following questions** |
| How much do you rate the pleasure of walking in monetary terms? | € |  |
| How much do you rate the nuisance of walking in monetary terms? | € |  |
| *Net non-monetary costs (excluding the cost for the time spent in the vehicle)* | *€* |  |

Table 26 – Carsharing costs and benefits module

|  |
| --- |
| **If you use Carsharing, please answer the following questions** |
| What is the annual membership fee | € |  |
| Carsharing fee per minute | € |  |
| (Round) Trips per year | n° |  |
| How many minutes do\would it take to you to reach a CS car? | n° |  |
| How much would you pay to avoid the nuisance of looking for a CS car for 10 minutes ? | € |  |
| How much would you pay annually to avoid the nuisance of having to book a CS car?  | € |  |
| How much would you pay annually to avoid the risk of not finding a CS car available when you need it? | € |  |
| How much do you rate the satisfaction of being a CS user in monetary terms? | € |  |
| *Annual monetary expenses:* | *€* |  |
| *Net non-monetary costs (excluding the cost for the time spent in the vehicle):* | *€* |  |
| *Total monetary and non-monetary costs (excluding the cost for the time spent in the vehicle):* | *€* |  |

Table 27 – Overall travel costs and benefits module

|  |
| --- |
| **Overall total** |
| *Total annual monetary expenses:* | *€* |  |
| *Total annual depreciation costs:* | *€* |  |
| *Total annual opportunity costs:* | *€* |  |
| *Total net non-monetary costs (excluding the cost for the time spent in the vehicle):* | *€* |  |
| *Overall total monetary and non-monetary costs (excluding the cost for the time spent in the vehicle):* | *€* |  |

Table 28 – Assumed values of the triangularly distributed random variables (min, max, mean)\*

|  |  |  |
| --- | --- | --- |
|  | *unit* | T(min, max, mean) |
| **Private car** |  |  |
| Purchase cost | *€* | 1000, 22000, 6100 |
| N° of years before the market value goes to zero | n° | 1, 10, 5 |
| Road tax | *€* | 80, 360, 181 |
| Insurance cost | *€* | 250, 800, 515 |
| Monetary value of the risk of uninsured theft or damage | *€* | 0, 2500, 747 |
| Ordinary and extraordinary maintenance cost | *€* | 100, 1000, 322 |
| WTP for avoiding the nuisance of maintaining and refuelling your car | *€* | 0, 600, 202 |
| Opportunity cost of the private garage | *€* | 0, 1200, 213 |
| Weekly parking costs | *€* | 0, 10, 2 |
| Time spent in looking for a parking place | *min.* | 0, 15, 3 |
| Monetary value of the pleasure of owning a car | *€* | 0, 7000, 1742 |
| WTA to give up the private car | *€* | 100, 5000, 2267 |
| **Motorcycle** |  |  |
| Purchase cost | € | 525, 1500, 1181 |
| N° of years before the market value goes to zero | n° | 2, 5, 4 |
| Road tax | € | 10, 35, 20 |
| Insurance cost | € | 56, 270, 174 |
| Monetary value of the risk of uninsured theft or damage | € | 0, 100, 56 |
| Ordinary and extraordinary maintenance cost | € | 50, 150, 95 |
| WTP for avoiding the nuisance of maintaining and refuelling the motorcycle | € | 0, 50, 24 |
| Monetary value of the pleasure of owning a motorcycle | € | 20, 750, 530 |
| WTA to give up the motorcycle  | € | 400, 700, 550 |
| **Bicycle** |  |  |
| Purchase cost | € | 10, 50, 37 |
| N° of years before the market value goes to zero | n° | 0, 2, 1 |
| Monetary value of the pleasure of owning a bicycle | € | 0, 10, 5 |
| Monetary value of the nuisance of cycling | € | 0, 0, 0 |
| **Walking** |  |  |
| Monetary value of the pleasure of walking | € | 10, 500, 209 |
| Monetary value of the nuisance of walking | € | 0, 100, 49 |
| **Carsharing** |  |  |
| Membership fee | € | 20, 100, 50 |
| Minutes needed to reach a CS car | n° | 5, 10, 8 |
| WTP for avoiding the nuisance of having to book a CS car | € | 20, 100, 61 |
| WTP for avoiding the risk of not finding a CS car available when you need it | € | 30, 300, 111 |
| Monetary value of the satisfaction of being a CS user | € | 0, 300, 114 |

\*Annual values unless otherwise stated.

1. The data on Milan considers only Guidami. [↑](#footnote-ref-1)