Measure Evaluation Results

BOL 6.2 MobiMart Research

Giuseppe Liguori (SRM)
Dora Ramazotti (SRM)

Date: February 2013
**Executive Summary**

The measure ‘MobiMart Research’ aimed at developing, prototyping and demonstrating a pilot scheme for mobility eco-savings with credits that can be obtained through different instruments on an individual and community level. The principle of the mobility credit mechanism is to reward citizens positive behaviours related to transport and, at the same time, to convert CO2 saving into “mobility credits” attributed to entities who distributed the incentives. The specific objective of the measure is to shift some regular trips from motorized private transport to public or sustainable transport modes, such as flexible transport service (FTS), car-pooling, car sharing or cycling. The city’s attempt to create a mobility credit market system, the so-called MobiMart, constitutes an important research activity on sustainable mobility credit mechanisms and its implementation is a crucial practical test to evaluate whether or not such a methodology could encourage individuals and companies (public or private) to adopt more sustainable mobility practices.

This system was implemented through four pilot tests on specific transport modalities: P1 - Car-pooling among Emilia-Romagna Region employees; P2 - Car-sharing managed by the transport company (ATC) in Bologna area; P3 - Flexible Transport Service: a pilot test on ColBUS – La Navetta del Borgo; P4 - Citizens by bicycle.

For the four pilot projects the following phases were conducted:

**Phase A: Preliminary operations, studies and setting up of the pilot actions** (2009 - 2010) MobiMart RTD aimed to deeply study and design a conversion methodology to implement the credit system based on the guidelines for the definition and implementation of local authorities' greenhouse gas emissions reduction strategies drafted by the responsive entities for the accomplishment of Kyoto targets on regional and local level. To conduct the preliminary studies, a scientific group was constituted.

**Phase B: Implementation of the pilot actions** - (2011) The four pilots were implemented by SRM, the local transport authority of Bologna and by the involved stakeholders. Respective communication and dissemination activities were conducted. An awareness campaign on sustainable mobility as well as an information campaign about this new incentive system was addressed to the citizens through the municipality website, newspapers, forums, seminars and conferences. A dissemination campaign and up-scaling activity of MobiMart Citizens by Bicycle pilot has been realized by a European campaign involving other CIVITAS and non-CIVITAS cities in order to foster sustainable mobility and to disseminate MIMOSA best practices.

**Phase C: Data collection** (2010 - 2011) Data was collected (before/after) in order to assess the impact of the measure. For each pilot, data was evaluated and results were drafted into a record to be sent to the certification body.

**Phase D: Emissions savings identification and certification** (2012 - 2013) Amount of GHG saved through pilot activities were calculated, validation from a third body and the certification as sustainable mobility credits was carried out.

The evaluation approach focused on impact and process of the implementation. The impact evaluation was based on the indicators across the areas of transport and society.

A **key-result** of the impact evaluation was that despite the low number of participants, car-pooling (P1) has been shown to improve the CO2 balance (-11%) and urban traffic by reducing the number of vehicles. Additionally, the pilot on cycling (P4) was not able to change the general trend on the use of the bicycle in Bologna. Nonetheless, within the sample group it has yielded positive results in terms of reduction in CO2 emissions (-7% in
the 2011 edition and -28% in 2012). The key factor that determined the success of the initiative is linked to the "challenge" feature that involves participants in a contest, committing them to the same objective. Most participants enjoyed to be part of a group (a sort of eco-aware community) and asked already about future initiatives.

Hence, one of the main drivers observed during the process was the commitment among the several stakeholders at regional level to cooperate towards the common objective to reduce pollutant emissions related to transport issue. Even in cases where difficulties emerged, they considered it an interesting and challenging initiative. Despite the concrete risks that high CO2 saving could not be achieved; all stakeholders believed that users’ understanding of the issues would be increased.

The main barrier for these kinds of interventions is still the status symbol of the car in Italy. No significant regulation of restrictions is foreseen to reduce this hence this barrier was significantly impacting on pilots implementation and operation phase.

In general the measure implementation was more complicated than expected. From the management point of view, in a potential replication of the measure, it is advisable to focus on single pilot activity and to involve potential stakeholders or partners in a more constructive planning of the measure. Incentive effectiveness could be improved if supplemented by a good promotional and advertising campaign in order to share a “vision” with citizens. The “challenge” mechanism was very stimulating and allowed the participants to feel part of a community in action. Incentives for sustainable mobility can be even more effective if accompanied by a series of disincentives to individual motorized modes.

Until now most of certification initiatives such as carbon credit in the frame of the Kyoto Protocol were focused more on the trade of industrial pollutant emissions. The success of this MIMOSA measure highlighted the stakeholders’ interests and commitment for certifications designed to reduce pollutant emissions resulting from individual. This ensures actions which have tangible results at a local level.

MobiMart demonstrated the feasibility of a methodology that encourages good behaviour of certain groups of citizens or employees incentivised by the relative mobility credits certified and tradable on specific platforms. The profits resulting of credits exchange could be suitable to counterbalance the incentives issued by the promoting entity to create further incentives and ensure the financial sustainability of the system. Furthermore, MobiMart is an innovative successful mobility credit mechanism which can be implemented on larger scale and compatible with other European systems.
A Introduction

A1 Objectives
The measure objectives are:

High level objectives
- Better air quality through pollution reduction

Strategic level objective
- More Energy-Efficient Vehicle Use

Specific measure objectives
- Promote sustainable mobility means
- Raise citizens’ awareness on sustainable mobility
- Turn some systematic journeys done by motorised individual transport into PT, sustainable transport (car-pooling, car sharing) or cycling.

A2 Description
Main features of the measure
The specific objective of the measure was to turn some systematic journeys done by motorized private transport into public or sustainable transport modalities, such as car-pooling, car sharing, Flexible Transport Services or cycling.

The research activity as well as the related tests were based on a mobility credit mechanism i.e. a system of rewarding positive travel behaviours and convert CO2 savings into "mobility credits" that could be traded for the benefit of the proposer. This rewarding system has been implemented through:
- The development of four pilot tests on specific transport modalities;
- An appropriate methodology for calculating CO2 saving;
- A conversion of the reductions in the so-called "mobility credits" which can be attributed to public administrations or private companies.

MobiMart aimed to evaluate whether or not the creation of this system could encourage private individuals and companies to adopt more sustainable practices from an environmental perspective.

Thus MobiMart studied a credit system policy and developed a set of guidelines for the accomplishment of a mobility market based on the impact of the pilot tests in Bologna.

A reward system was established, identifying the correct conversion factors in order to incentivise current users and to attract new ones thus multiplying the positive effects and changing the way of thinking on mobility issues.

A conversion methodology, that can be considered the main output of the measure, has been drafted and tested based on the Guidelines for the definition and implementation of local authorities’ GHG emission reduction strategies drafted by Cartesio network.

The measure was divided into 4 pilot actions.
Each pilot test foresaw different timings and different methodological approaches but incentives were the common key elements in all the pilots. The four pilot tests were:

P1 - Car-pooling among Emilia-Romagna Region employees

Car-pooling means several people use one private car to make a trip together. In MobiMart car-pooling crews were arranged within a big public body: Emilia-Romagna Region (RER).

In order to identify available volunteers SRM (the local transport authority for Bologna) and the Emilia-Romagna Region Mobility Manager conducted an information campaign among the employees using the intranet, arranging a road show and promoting an already activated website which among other things promotes the creation of crews for car-pooling.

A specific on board device (AZRegolo) allowed highly accurate detection of trips made by car-sharing and, consequently, an exact measurement of CO2 savings and costs. For each crew, AZRegolo was able to collect all the necessary data for MobiMart car-pooling purposes thanks to the use of a smart card equipped with a microchip. The driver was the first passenger making the check-in, thus the car operating was associated with the driver in its profile. The others to be checked-in were automatically the passengers. At the end of each month the server calculated the amount of reduced mileage for each crew and for each subscriber. The server was also able to calculate the amount of money spent by each person and to make the costs calculations.

Incentives were foreseen in order to encourage Emilia-Romagna Region employees to participate, such as:

- free parking reserved area for car poolers;
- 1 multi choice voucher for a dinner at restaurant given to the most virtuous car pooler;
- 1 multi choice voucher for a short holiday raffled among participants.

P2 - Car-sharing managed by ATC in Bologna area

Bologna is one of the first cities offering a car sharing service in Italy: since August 2002, after some pilot trials and a brief running-in period, car sharing is now a tried and tested reality, fully operational. The service is currently performed by ATC (local public transport company in Bologna), and takes part in the ICS group (“Car Sharing Initiative”, involving several Italian cities where a car sharing service has been implemented). At the moment, the car rental fleet is composed of about 30 vehicles available in the urban area and 10 in the Province, which can use 17 reserved parking spaces in the urban area and 8 in the Province. The system has about 1,091 members (2010). Even though car sharing is implemented in several Italian cities the basic concept of the system “use a car without owning it” is extremely innovative in Italy. The car is in fact still a status symbol and it’s extremely hard for people to consider it only as a transport means.

The pilot action on car sharing was based on a “Bring a friend” approach. Several studies on car sharing service demonstrate that it allows a considerable reduction of emission for two reasons:

- The car sharing fleet is made up of vehicles that meet the lowest possible emission in their respective vehicle class. 22 out of the 32 car sharing vehicles in Bologna run on bi-fuel gasoline and natural gas or LPG.
- Customers of car sharing services reduce their mileage travelled by car significantly as they make more rational travel choices.
For this reasons the higher the number of subscribers, the bigger the potential impact of emission reduction produced by the service. Incentives are foreseen both for the new subscribers and for the user.

During the implementation period, MobiMart foresaw the setup of an information system that collected all the parameters needed to determine analytically the amount of greenhouse gases actually emitted into the atmosphere, and the use of Car Sharing vehicles by subscribers. At the same time the information provided by each user, at the time of registration to the Car Sharing service on:

- the characteristics of the owned vehicle that would have been used as an alternative to Car Sharing
- where appropriate, the characteristics of the vehicle "scrapped" to switch to Car Sharing

allowed calculation of the amount of greenhouse gases that would have been emitted into the atmosphere without the Car Sharing initiative.

The differences obtained between the two values reported for the same time interval returned the benefit obtained by Car Sharing service.

Incentives were foreseen in order to encourage users to invite for new subscriptions, such as:

- 10 trips bus tickets given to all the new subscribers;
- 10 trips bus tickets given to all the users inviting successfully new subscribers;
- 1 folder bike raffled among participants;
- 1 monthly ticket raffled among participants.

P3 - Flexible Transport Service: a pilot test on ColBUS – La Navetta del Borgo

ColBUS – La navetta del Borgo is an experimental service of urban public transport line activated in June 2009 in a neighbourhood in Bologna, previously not served by urban buses. ColBUS can be booked by phone, and allows workers, students and residents to travel in the district, and to be connected both to the main public transport lines and to the main district services. It is therefore a Flexible Transport Service, operated according to itineraries and schedules which are agreed at the time of booking by phone between the users and the telephone operators.

“Fall in love with ColBUS – La navetta del Borgo!” was the title of the initiative set up by SRM –as a pilot test on Flexible Transport Services (FTS) in Bologna; During the Valentine’s week, from 14th to 19th of February 2011, ColBUS was available for free to all citizens who wanted to use it for their daily trips. Furthermore, a monthly ticket was raffled among users who booked and used ColBUS during Valentine’s week. The aim of the initiative was to raise awareness on ColBUS service inviting citizens to a free trial in order to increase the use of public transport towards a change of habits. The pilot week was preceded by a two weeks advertising campaign.

Summarising, the incentives foreseen by the 3rd pilot were:

- Free use of the colBUS for a week;
- 1 monthly ticket raffled among participants.

P4 - Citizens by bicycle

Citizens by bicycle was a pilot initiative organized by SRM with the aim of encouraging the use of bicycles and to raise citizens’ awareness on sustainable mobility.
During the European Mobility Week 2010, 746 people were interviewed, of which 387 showed an interest in participating in the pilot. Respondents were asked to indicate on an appropriate average weekly chart their trips, trip purpose and the means of transport used.

On May 23, 2011 the campaign kicked off, preceded by a series of awareness campaigns through press releases and social networking (a profile and a fan page on Facebook and a Twitter account). Participants were asked to list the trips carried out for two weeks on a special diary over a period of 4 weeks.

Parallel steps were taken to activate a profile on Endomondo website specialized in GPS tracking for sports activities. Following a special agreement, Endomondo provided SRM with a website specifically created for the campaign 'Bologna citizens by bicycle'; through the website it was possible to download for free a mobile application for GPS tracking of "cycling transportation" and to join a challenge among participants.

Incentives and prizes strictly related to cycling as well as a lottery among participants were foreseen as follows:

- 1 folder bike raffled among participants;
- 1 city bicycle given to the most efficient participant (in term of CC2 saved);
- 1 city bicycle given to the participant who travelled the highest mileage;
- 7 minor prizes (helmets, backpacks, LED light kits, etc.) were raffled among participants.
B Measure Implementation

B1 Innovative Aspects

New conceptual approach, internationally - Innovative aspects are represented by the first implementation of certification methods (for mileage savings, resource use, emissions reduction, etc.), conversion criteria and trading rules, validated protocols and guidelines for issuing mobility credits, voluntary agreements between key stakeholders for mutual recognition of transport related mobility credits. Assessments of privacy and security related issues and guidelines to comply with the rules are made.

Targeting specific user groups, nationally - through the planned pilot tests specific parts of the general travelling population are targeted, i.e.: people living in an area where FTS is operating, cyclists, car sharing and car-pooling users.

B2 Research and Technology Development

Incentive mechanisms based on "green certificates" generated to reward ecological conversions and sustainable practices in the industrial field were at the basis of MobiMart RTD activity.

MobiMart led to the study and implementation of a system of "mobility credits", i.e. a system of rewarding positive behaviours related to the transport and mobility area (which are beneficial in terms of reducing CO2 emissions). This reward system has been implemented through:

- The identification of specific modes of transport that can be measured and quantified;
- An appropriate methodology for calculating the tons of CO2 saved;
- A conversion of these reductions into so-called "mobility credits" which could be attributed to public administrations or private companies.

The ultimate aim of the measure was to evaluate whether the creation of this system could encourage or not, private individuals and companies to adopt more sustainable practices from an environmental perspective.

The credits so identified might be recorded, validated and exchanged through existing platforms for credits exchange or future ones in accordance with the guidelines of the Cartesio Network (which includes both the Region and the Municipality of Bologna). The Cartesio Network already involves 6 Italian Regions and more than 150 members of which 28% are public bodies coming from 17 different Italian regions.

The choice to apply for Cartesio “label” was evaluated as the best approach in Italy due to its “public character”. Similar approaches to exchange platforms are being established in several other countries and the experience is expected to be replicated all over Europe, if positive.

The RTD study conducted by SRM on methods of detection and conversion dealt with four different modes of transport, which have been identified to carry out measurements and tests: car-pooling, car sharing, Flexible Transport Services and cycling.

The credit “certification” measurement has been done in close cooperation with CE.SI.S.P., an interuniversity Centre for the Development of Product Sustainability, recognised by Cartesio as a certification body.
B3  Situation before CIVITAS

Before the start of CIVITAS MIMOSA a real tested and standardised system for sustainable mobility incentives, addressed to individual citizens or organizations did not exist. Many good practices (like Mobility Management, Road pricing, Regulation plans, Car Sharing, Car-pooling, Bike Sharing, etc.) have already been implemented but the results were not often up-scalable and sometimes were based on strong restrictions that did not contribute to creating increased awareness and a “virtuous mechanism”.
In the city of Bologna several examples of good practice have already been implemented. Most of these practices are IT based, so several data about their use are already available.

B4  Actual Implementation of the Measure

- **Phase “A”** - preliminary operations, studies and setting up of the pilot actions.
  A scientific group was created and preliminary studies were set up. Subcontractors for scientific and technical support were identified and first project plans were drafted. The communication campaign and the overall dissemination strategy was defined. A group of stakeholders was created and actively involved in pilot implementation.
- **Phase “B”** - implementation of the pilot actions.
  During phase B all the four pilots were implemented by SRM and by the involved stakeholders. Communication and dissemination activities were implemented accordingly, in order to enrol as many participants as possible and to spread results.
• Phase “C” - data collection.
  Data was collected (before/after) in order to assess the impact of the measure. For each pilot, data were evaluated and results were drafted into a record to be sent to the certification body.

• Phase “D” – emissions savings identification and certification
  Calculation on GHG saved through pilot activities were made, validation from a third body and the certification as sustainable mobility credits was planned, ready to be exchanged on proper platforms.

**B5 Inter-Relationships with Other Measures**

The measure 6.2 is related to other measures as follows:

• 4.1 - BOL Mobility Managers
  Measure 4.1 BOL has supported the modal shift to greener transport among citizens. The Mobility Manager of the stakeholders involved have played an important role in supporting the success of measure 6.2, disseminating information to employees and supporting campaigns for entries.

• 4.2 - BOL Policy planning and co-operation
  Measure 4.2 - BOL worked to promote information and communication to the public on sustainable mobility, best practices and "virtuous behaviour". Especially the European Mobility Week, as main event dedicated to sustainable mobility, was an important point of reference for the activities mentioned above and for the initial activities of MobiMart.

• 6.1-BOL Car Sharing
  ATC as Car Sharing operator in Bologna provided useful data about car sharing system as well as playing an important role in the implementation of the car sharing pilot.
C Impact Evaluation Findings

C1 Measurement Methodology

C1.1 Impacts and Indicators

<table>
<thead>
<tr>
<th>No.</th>
<th>Evaluation area</th>
<th>Evaluation category</th>
<th>Impact</th>
<th>Indicator</th>
<th>Source of data</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Environment</td>
<td>Pollution/Nuisance</td>
<td>Emissions</td>
<td>CO$_2$ per km per person</td>
<td>Survey before/after; IT based appl.; vehicles manufacturer data</td>
<td>30÷40</td>
</tr>
<tr>
<td>10</td>
<td>Environment</td>
<td>Pollution/Nuisance</td>
<td>Emissions</td>
<td>NO$_x$ per km per person</td>
<td>Survey before/after; IT based appl.; vehicles manufacturer data</td>
<td>30÷40</td>
</tr>
<tr>
<td>11</td>
<td>Environment</td>
<td>Pollution/Nuisance</td>
<td>Emissions</td>
<td>PM$_{10}$ per km per person</td>
<td>Survey before/after; IT based appl.; vehicles manufacturer data</td>
<td>30÷40</td>
</tr>
<tr>
<td>14</td>
<td>Society</td>
<td>Acceptance</td>
<td>Acceptance</td>
<td>Acceptance level</td>
<td>Survey before/after</td>
<td>15-40</td>
</tr>
<tr>
<td>26</td>
<td>Transport</td>
<td>Transport system</td>
<td>Modal split</td>
<td>Average modal split – passengers (% of passenger-km for each mode)</td>
<td>Survey before/after IT based application</td>
<td>15-40</td>
</tr>
<tr>
<td>27</td>
<td>Transport</td>
<td>Transport system</td>
<td>Modal split</td>
<td>Average modal split - vehicles (% of vehicle-km for each mode)</td>
<td>Survey before/after IT based application</td>
<td>15-40</td>
</tr>
<tr>
<td>29</td>
<td>Transport</td>
<td>Vehicle occupancy</td>
<td>Occupancy</td>
<td>Average occupancy</td>
<td>IT based application</td>
<td>15-40</td>
</tr>
</tbody>
</table>

TABLE C1.1.2: Bundled Indicator

<table>
<thead>
<tr>
<th>No.</th>
<th>Evaluation area</th>
<th>Evaluation category</th>
<th>Impact</th>
<th>Indicator</th>
<th>Source of data</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Society</td>
<td>Acceptance</td>
<td>Awareness</td>
<td>Awareness level</td>
<td>Survey before/after</td>
<td>15-40</td>
</tr>
</tbody>
</table>

All the participants in the pilot projects were asked to fill in a survey on modal split before and after the pilot tests. As participation in the pilot tests was based on voluntary adhesion, user groups and sample sizes varied according to citizens’ response to communication and enrolment campaigns.

An overview of the surveys conducted and the relation with indicators is given in the following table (table 3):
**Measure title:** MobiMart Research  
**City:** Bologna  
**Project:** MIMOSA  
**Measure number:** 6.2

### TABLE C1.1.3: Overview of Surveys

<table>
<thead>
<tr>
<th>Pilot test</th>
<th>Sample size</th>
<th>Age</th>
<th>Gender</th>
<th>Employment Status details</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>F</td>
<td>Y</td>
</tr>
<tr>
<td>P1 Car-pooling</td>
<td></td>
<td></td>
<td>M</td>
<td>F</td>
<td>Y</td>
</tr>
<tr>
<td>Before</td>
<td>18-24</td>
<td>25-32</td>
<td>33-40</td>
<td>41-48</td>
<td>49-56</td>
</tr>
<tr>
<td>After</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>P2 Car-sharing</td>
<td>&lt;21</td>
<td>21-29</td>
<td>30-39</td>
<td>40-49</td>
<td>50-59</td>
</tr>
<tr>
<td>Before attempt 1</td>
<td>21</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>After</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Before attempt 2</td>
<td>52</td>
<td>0</td>
<td>8</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>After</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>P3 FTS</td>
<td>&lt;16</td>
<td>16-25</td>
<td>26-40</td>
<td>41-60</td>
<td>61-70</td>
</tr>
<tr>
<td>Preliminary</td>
<td>300</td>
<td>0</td>
<td>7</td>
<td>24</td>
<td>108</td>
</tr>
<tr>
<td>Before</td>
<td>20</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>After</td>
<td>20</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>P4 C. by bicycle</td>
<td></td>
<td>0-14</td>
<td>15-24</td>
<td>25-34</td>
<td>35-44</td>
</tr>
<tr>
<td>Preliminary</td>
<td>746</td>
<td>6</td>
<td>19</td>
<td>30</td>
<td>98</td>
</tr>
<tr>
<td>Before</td>
<td>387</td>
<td>1</td>
<td>4</td>
<td>17</td>
<td>59</td>
</tr>
<tr>
<td>After</td>
<td>55</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>General Surveys (2005-2011)</td>
<td></td>
<td>-</td>
<td>14-25</td>
<td>26-40</td>
<td>41-60</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>-</td>
<td>208</td>
<td>528</td>
<td>664</td>
</tr>
</tbody>
</table>

### Characteristics of the people surveyed:

**P1 - Car-pooling among Emilia-Romagna Region employees**

Sample group (before) was composed of 39 employees of the Emilia Romagna Region that regularly commute by car. The sample was created upon voluntary adhesion to the pilot after an invitation sent by the Mobility Manager.

Only for 24 out of 39 people was possible to find a potential car-mate due to routing and work shifts. Sample group (after) was composed of 6 people among the 39 above mentioned employees who decided to participate.

**P2 - Car-sharing managed by ATC in Bologna area**

Sample group (before) in first attempt was composed of 21 users of the Car-sharing service in Bologna and taking part to the annual users meeting. Since the sample was too small it was decided to re-launch with an online survey in order to involve a wider one.

Sample group (before) in second attempt was composed of 52 users of the Car-sharing service in Bologna that responded to the online survey. A “Bring a friend campaign” was launched without success.

**P3 - Flexible Transport Service: a pilot test on ColBUS – La Navetta del Borgo**

A preliminary survey on customer satisfaction on ColBUS was made within the area interested by the service (sample size 300). One of the question was the availability to receive more information on the ColBUS service and the pilot action foreseen. A direct mailing was launched to those people who answered positively.
The pilot sample group (20) was made by people who used the CoIBUS during the promotional pilot week. After the pilot week they were interviewed by phone on the basis of a before/after questionnaire.

P4 - Citizens by bicycle
Sample group (preliminary) was composed of 746 respondent to an ice-breaking questionnaire during the European Mobility Week 2010 road-show. Among them, a share of 387 (before) people was available to participate to the pilot. 55 people that responded participated to the pilot action. For those people actual data (before/after) were compared.

General surveys are made on the base of telephone surveys on behalf of SRM using CATI (Computer Assisted Telephone Interviewing) methodology, Characteristics of people sampled were constant. Only data referred to people living in Bologna were taken into account, excluding people living in the surrounding.

Detailed description of the indicator methodologies:

- **Environment** - *Emissions per Km per person* – Environment related indicators were selected in order to assess the impact of the measure, especially on the groups sampled. Data were collected through before and after surveys or thanks to IT collected data (car-pooling and FTS).

- **Society** - *Awareness and acceptance level* – Society related indicators are selected to investigate level of awareness/acceptance among citizens of the MIMOSA project. Surveys were used to collect such data. A question on the incentive scheme (virtuous behaviour / awards / credits) was foreseen once in a survey distributed also to non-participants. Indicators on awareness and acceptance were useful to understand the impact of MIMOSA actions and the sharing of intents among citizens. Since awareness was measured on the whole MIMOSA project, the indicator is bundled and results are common to other measures in Bologna.

- **Transport** - *Average modal split* – Transport related indicators are selected to calculate impact on modal shift against general trends. Data were compared at modal level. Indicators on average modal split were useful to determine the impact of MIMOSA measures on vehicle occupancy and on traffic, where relevant.

**C1.2 Establishing a Baseline**

The baseline is the situation before the starting of the pilot phase of the measure; it is different for each of the pilot tests implemented.

**P1 - Car-pooling among Emilia-Romagna Region employees**
In the recruitment phase over 800 Emilia-Romagna Region employees were contacted and 39 volunteers recruited. 24 potential users were divided into 9 crews – 15 in waiting list. In the implementation phase 3 crews started the pilot.

The baseline was defined from the data on modal split provided by the subscribers to the pilot action. The necessary data covered the following areas:

- Actual use of car
- Departure location and usual route
- Mileage and average speed (or trip time)
- Car features: type, engine features, year of registration, emission category
For each crew, a dedicated data logger combined with smart cards collected passenger and trip data regarding:
- The vehicle used
- The number of car pooling trips
- The length of the trip
- The number and the identity of the passengers

The emission baseline (Eb) is given by the following formula:

$$Eb = \sum_{i=1}^{n} (P_i \times FE_{ai})$$

Where:
- $i$ = ith user belonging to a testing crew
- $n$ = number of users taking part in the test
- $P_i$ = total mileage travelled by the ith user in own vehicle in test period
- $FE_{ai}$ = emission factor for vehicle type used by ith user

**P2 - Car-sharing managed by ATC in Bologna area**

For the pilot based on car sharing the baseline was made by the actual data on car sharing use among the registered users. ATC is involved as the car sharing operator and owner of data on behaviour of users.

The estimate of emissions baseline (Eb) is performed by the following formula:

$$Eb = \sum_{i=1}^{n} (N_i \times P \times FE_{ai})$$

Where:
- $i$ = year within project duration
- $n$ = number of years of the project
- $P$ = average annual mileage per user by own vehicle
- $FE_{ai}$ = average emission factor for the year (CORINAIR-COPERT III).

**P3 - Flexible Transport Service: a pilot test on ColBUS – La Navetta del Borgo**

For the ColBUS pilot the baseline was the actual average data on FTS passengers on a weekly base as reported by the FTS operator. Before the FTS pilot the average number of passenger per week was 43,6 taking into consideration the period from June 2009 (starting of the service) to January 2011.

*FIGURE C1.2.1: Baseline (Pre-Pilot) and Average Number of FTS Users During and After the Pilot Week*
Fig. 1: Baseline (pre-pilot) and average number of FTS users during and after the pilot week

P4 - Citizens by bicycle
As far as urban cyclists are concerned, the baseline was based on a “before” survey on modal split mileage (km per means of transport). The interviews were made mostly during the European Mobility Week 2010 with also the aim to recruit participants to the pilot. 746 persons were interviewed; not all the respondents were using bicycle on a daily basis but most of them were using it to some extent. Questions on reasons for using or not using bicycle were included in the survey.

The results of the before survey on modal split are presented in the graph below:

![Figure C1.2.2: MobiMart Baseline on Modal Split](image)

The results of the survey shows that the bicycle is the second most widely used means of transport (23%) after the car (46%) in terms of mileage. However the fact that surveys were conducted mostly during the European Mobility Week 2010 could have resulted in a distorted sample, most favourable to cycling.

The results of another survey on quality of transport service and modal split carried out yearly by SRM on a sample of 2,000 people aged 14 – 85 could be used to evaluate the data previously assessed. Data from general surveys (fig.4) carried out by SRM are related to modal split choice (qualitative) and not to mileage (quantitative) therefore figures are not directly comparable with those of MobiMart but they could be somehow useful to understand mobility habits in Bologna.

---

1 Telephone surveys were conducted by MEDEC (Centro Demoscopico Metropolitano della Provincia di Bologna) on behalf of SRM using CATI (Computer Assisted Telephone Interviewing) methodology. Multiple choices available for the identification of the actual behaviour of randomly extracted respondents.
C1.3 Building the Business-As-Usual Scenario

To define and evaluate the impact on business-as-usual scenarios, average trends were compared with pilots result. For each of the pilot action, a specific BAU was calculated.

P1 - Car-pooling among Emilia-Romagna Region employees

For the car-pooling pilot the BAU was the average mileage that users would have done by their own car, according to the behaviour previously assumed before the starting of the car-pooling pilot.

P2 - Car-sharing managed by ATC in Bologna area

For the car sharing pilot the BAU was calculated as the total mileage that users of the car-sharing would have done, according to the average behaviour of a resident in the urban area of Bologna.

P3 - Flexible Transport Service: a pilot test on ColBUS – La Navetta del Borgo

For the Flexible Transport Service pilot the BAU scenario was defined by the trend of FTS use from the start of the service (June 2009) to the period not covered by pilot activities. Since FTS, as PT, suffers from seasonal trends, the general figure had to be slightly adjusted according to the period of the measurement (see Annex 1 par 1.0).

P4 - Citizens by bicycle

For the pilot on bicycle use, the BAU scenario was the trend derived from differences between the baseline and actual data on mobility habits of citizens in Bologna, before the pilot implementation. Since the before survey (baseline) was done during the European Mobility week in 2010, and this led to a distorted sample, the after survey had to be done on the same sample or in the same setting, i.e. during the European Mobility Week 2011 to ensure some comparability of the data. But at that time the pilot was already implemented and the results could have been affected.

In the meanwhile some general surveys carried out by SRM on local modal split could give an overview of trends in Bologna. Data are available from 2005 to 2010. Trend on bicycle use is described in the graph below.
From these data, a general trend on bicycle use as modal split in Bologna was defined and modal share was considered as 9.43% ($y = 0.0046x + 0.0621$) in 2011 (pilot deployment time).

Data are not directly comparable since general surveys are conducted in a qualitative way (modal split) and not quantitative (mileage) as in baseline definition survey, but, it is possible to assume that an increase in modal shift towards bicycle use means an increase in average mileage done by bicycle. In this case, the trend line grade (+0.46%) of bicycle use (2005-2010) is used for the definition of the pilot BAU.

The same procedure could be applied to the two polluting modalities, car (2005-2010: -0.55%) and motorbike (2005-2010: +0.2%), that were compared with cycling during the pilot implementation:
**C2 Measure Results**

The results are presented under sub headings corresponding to the areas used for indicators – economy, energy, environment, society and transport.

**C2.1 Economy**

Not applicable

**C2.2 Energy**

Not applicable

**C2.3 Environment**

**P1 - Car-pooling among Emilia-Romagna Region employees**

The test, carried out throughout 6 months, from April 24th, 2011 to October 31st, 2011, provided significant results concerning the calculation of CO2 reduction.

Three teams were available for the test, each made up of two people. During a fluctuating number of days out of the 132 working days included in the period mentioned above, the three teams used the AZRegolo mapping system, sending to the server the following data related to displacements by car-pooling:

- travelling vehicle
- number of displacements by car-pooling
- Date, starting/ending time and trip length
- Number and code of transferred passengers

---

**TABLE C1.3.1: Expected Modal Split in 2011**

<table>
<thead>
<tr>
<th>Transport mode</th>
<th>Formula ((x=7))</th>
<th>Expected % in 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>(y = 0.0046x + 0.0621)</td>
<td>9.43%</td>
</tr>
<tr>
<td>Car</td>
<td>(y = -0.0055x + 0.5009)</td>
<td>46.24%</td>
</tr>
<tr>
<td>Motorbike</td>
<td>(y = 0.002x + 0.1154)</td>
<td>12.94%</td>
</tr>
</tbody>
</table>
During the registration to the test, the team members, through the Mobility Manager of the Emilia Romagna Region, had provided information about departure/arrival, home and office addresses and details on which vehicle they would have taken as an alternative to car-pooling.

Team number 3 has been admitted to the test although it did not have an alternative vehicle; in the calculation of CO2 emission reduction, the benefit obtained by this team has been considered null.

The calculation of the baseline and the calculation of the car-pooling test have been done on the basis of these data, accurately elaborated as further described, as well as assuming that, when there is no trace of displacements by car-pooling, there have been autonomous displacements taking alternative vehicles.

The CO2 emission baseline has been calculated through the following formula:

\[ E_b = \sum_{i=1}^{n} (P_i \times F E_{ai}) \sum_{i=1}^{n} (P_i \times F E_{ai}) \]

Furthermore, taking the same data from the test, the CO2 emissions during that Project phase were calculated, as well as the emission saving obtained by each team respectively through the following formulas:

\[ E_p = \sum_{i=1}^{n} (P_i \times F E_{ai}) \sum_{j=1}^{m} (P_j \times F E_{aj}) \sum_{i=1}^{n} (P_i \times F E_{ai}) + \sum_{j=1}^{m} (P_j \times F E_{aj}) \]

and

\[ E_r = E_p - E_b \]

where:

i = ith user belonging to a testing crew
n = number of users taking part in the test
P_i = total mileage travelled by the ith user by own vehicle in test period
FE_{ai} = emission factor for vehicle type used by ith user
j = jth vehicle used for the car-pooling test
m = number of vehicles used for the car-pooling test
P_j = total mileage travelled by the jth vehicle in test period
FE_{aj} = emission factor for jth vehicle used by ith user

The emission saving obtained by the three teams during the test (around 6 months) is roughly 0.524 tons of CO2, which is approximately 11% of the baseline emissions (roughly 4.77 tons of CO2). Taking into consideration only the first two teams, the saving grows to 11.6% (more details in Annex 1 par. 2.0).

**P2 - Car-sharing managed by ATC in Bologna area**

Pilot P2 was based on the “bring a friend” approach. A survey was created using SurveyMonkey and delivered to car-sharing users through a link on ATC website and a direct mailing to 930 users (730 emails and 200 paper mails).

The pilot was launched on 22nd of September 2011 for a period of 3 months extended to 7 months after an unsuccessful first period. Unfortunately, despite some new subscriptions to the car sharing service and even though 52 users replied to the survey, the pilot was unsuccessful. 18 “friends” email addresses were collected through surveys, but after having sent an email to them illustrating the incentives, no one has shown interest to subscribe to the car sharing service.

Since December 2011 to March 2012 there were 41 new subscriptions and 42 unsubscriptions (source ATC).
Since the pilot was unsuccessful, no environment-related data are provided.

**P3 - Flexible Transport Service: a pilot test on ColBUS – La Navetta del Borgo**

In pilot P3 the trend line was built on figures from the start of the service (2009) to January 2011.

In February 2011 a pilot action was carried out for a week (red bullet point in figure 8 - week service N.89) preceded by a two-week awareness campaign (orange bullet points in figure 8 - weeks service N.87 - 88).

During the pilot week ColBUS had some 80 passengers while the estimated BAU was equivalent to 61,66 passengers. Note that the average number of passengers was rapidly increasing starting from the awareness campaign (orange bullet points).

![FIGURE C2.3.1: Impact of the Pilot Week](image)

The impact of the pilot week is given by the difference between the two trend lines (BAU and after pilot). The result is highlighted in yellow in figure 8.

Trend values for each week both for pilot (PY) trend and for BAU trend (BY) are based on the following formula:

\[ Y = - (SX) + N \]

where:
- \( Y \) = trend number of passengers (single trip) per week
- \( S \) = slope of the trend line
- \( X \) = progressive week number
- \( N \) = initial value of \( Y \)

Impact can be thus measured as:

\[ \sum_{i}^{\infty} (PY - BY) \]

Where
- \( i \) = weeks after the pilot
The increase in passengers was measured as 15.61 for the first week, 15.41 for the pilot week and 12.55 for the last week, with an average increase of 14.17 passengers per week. An increase of 410.92 (single trips) was noticed in total during the 29 weeks observed.

Data on participants to the pilot week on type and number of vehicles owned, driving licenses and mobility behaviour were collected and compared with CoIBUS taking into account number of trips, destination of trips, co-modality (where appropriate), in order to calculate emissions data related to the pilot (more details in Annex 1 par 3.0).

In order to assess the impact of the pilot week on FTs CoIBUS, differences on emission factors were multiplied by the number of increased passengers (single trips) noticed during the pilot week (410.92). Results were positive in terms of CO2 reduction (-37.27%) but negative in terms of Nox (+71.5%) and PM10 (+95%) reduction.

P4 - Citizens by bicycle

The MobiMart results in terms of emission reduction are based on a restricted group of participants to the pilot P4 that were interviewed twice, since they participated in the pilot final stage.

Participants were asked to record the journeys carried out for 2 weeks on a special diary over a period of 4 weeks. Incentives and prizes strictly related to cycling were foreseen as well as a lottery among participants. The aim of incentives was to stimulate cycling instead of using private motorized means of transport.

Results of the two weeks reporting (see table 7 and figure 9) compared with before data on the same sample (participants to pilot) show a worse situation in terms of cycling in the pilot phase.
There are two main reasons to explain this. One of the reason is the fact that in June 2011 (the pilot started on 23\textsuperscript{rd} of May and ended on 19\textsuperscript{th} of June) the amount of rainfall was well above the average for the period: 146.5 mm of rain vs the average of 57.3. This huge amount of rain probably affected modal choice in favour of other modalities.

Another important factor is given by the difference between the two methodologies of data collection: estimating (before survey) and reporting (after survey). The reduction of CO2 emissions was calculated according to the transport footprints of the participants. For the sake of the pilot only car, motorbike and cycling modalities were taken into account.

The following parameters were used\textsuperscript{2}:

- CO2 Car emission = 302 g/km
- CO2 Motorbike emission = 88 g/km
- CO2 bicycle emission = 0 g/km

\textsuperscript{2} Values already used by Civitas MIMOSA measure BOL 4.2, determined by "calculette" (www.ademe.fr) and adapted to local needs.
In order to calculate emissions reduction a specific formula was applied:

\[
\Delta_{\text{emission}} = \sum_{i=1}^{N} \left[ \left( \frac{C_{\text{ma}_i} \cdot C_{\text{e}} + M_{\text{ma}_i} \cdot M_{\text{e}}}{C_{\text{ma}_i} + M_{\text{ma}_i} + B_{\text{ma}_i}} \right) \cdot \left( C_{\text{ma}_i} + M_{\text{ma}_i} + B_{\text{ma}_i} \right) \right] 
- \sum_{i=1}^{N} \left[ \left( \frac{C_{\text{mb}_i} \cdot C_{\text{e}} + M_{\text{mb}_i} \cdot M_{\text{e}}}{C_{\text{mb}_i} + M_{\text{mb}_i} + B_{\text{mb}_i}} \right) \cdot \left( C_{\text{ma}_i} + M_{\text{ma}_i} + B_{\text{ma}_i} \right) \right]
\]

Where:

\( C_{\text{ma}} \) = Car mileage after

\( C_{\text{e}} \) = Car emission

\( M_{\text{ma}} \) = Motorbike mileage after

\( M_{\text{e}} \) = Motorbike emission

\( B_{\text{ma}} \) = Bicycle mileage after

\( C_{\text{mb}} \) = Car mileage before

\( M_{\text{mb}} \) = Motorbike mileage before

\( B_{\text{mb}} \) = Bicycle mileage before

The formula described above firstly calculates the transport footprints (average CO2/km) of the participants before the test and during the test (after). Then the formula multiplies the mileage during the test (after) firstly by the footprint before and then by the footprint after. The comparison among the two results is the CO2 saved (more details in Annex 1 par 4.0).

Thus, the result of the pilot conducted on a sample of 55 participants is equivalent to a saving of 41.5 kg of CO2 (-7%) in a week that means roughly 2.1 Tons per year. Individually speaking, in a week the participant had an average saving of 0.75 kg of CO2 equivalent to 39.2 kg per year (52 weeks).

Despite a positive result in term of CO2 savings, comparing pilot trend against BAU the results seems to be negative for bicycle use and positive for the other transport modes, but data are not directly comparable:

**TABLE C2.3.4: Comparison of Trends**

<table>
<thead>
<tr>
<th>Modal split</th>
<th>BAU trend (modal split N=2000)</th>
<th>Pilot trend (mileage N=55)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>+0.46%</td>
<td>-2.6%</td>
</tr>
<tr>
<td>Car</td>
<td>-0.55%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Motorbike</td>
<td>+0.2%</td>
<td>+0%</td>
</tr>
</tbody>
</table>

The pilot has been repeated in May 2012 involving other 6 European cities (European Cycling Challenge 2012 – ECC2012). At local level in Bologna, 51 participants reported the data described in table 8:
Results in terms of mileage were very positive for bicycle use. In terms of CO2 savings, by applying the above described formula 239,82 kg of CO2 were saved in a week (-28%). Results of the pilots are summarised in the table below:

### TABLE C2.3.5: Comparison of Trends

<table>
<thead>
<tr>
<th>Modal split</th>
<th>Before survey ECC2012 km/week</th>
<th>After survey ECC2012 km/week</th>
<th>Delta %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>3.120</td>
<td>5.768</td>
<td>+85%</td>
</tr>
<tr>
<td>Car</td>
<td>2.618</td>
<td>3.436</td>
<td>+31%</td>
</tr>
<tr>
<td>Motorbike</td>
<td>762</td>
<td>552</td>
<td>-27%</td>
</tr>
</tbody>
</table>

### TABLE C2.3.6: Results of the Pilot Activities

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 - Car-pooling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 Kg</td>
<td>4.506,1</td>
<td>3.982,4</td>
<td></td>
<td>523,7</td>
<td>11,6%</td>
</tr>
<tr>
<td>CO2 Kg year</td>
<td>7.669,8</td>
<td>8.678,4</td>
<td></td>
<td>-1008,61</td>
<td>-11,6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pilot action</th>
<th>Pre Mimosa baseline 2011</th>
<th>Mimosa 2011</th>
<th>BaU (29 weeks)</th>
<th>Mimosa vs Baseline</th>
<th>Mimosa vs BaU (29 weeks 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3 - FTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 g pilot week</td>
<td>81.782,60</td>
<td>51.303,10</td>
<td>-30.479,50</td>
<td>-37,27</td>
<td></td>
</tr>
<tr>
<td>Nox g pilot week</td>
<td>71,50</td>
<td>122,30</td>
<td>50,80</td>
<td>71,05</td>
<td></td>
</tr>
<tr>
<td>PM10 g pilot week</td>
<td>13,80</td>
<td>27,00</td>
<td>13,20</td>
<td>95,65</td>
<td></td>
</tr>
<tr>
<td>CO2 g BAU</td>
<td>301.163,27</td>
<td>480.086,05</td>
<td>-178.923,46</td>
<td>-37,27</td>
<td></td>
</tr>
<tr>
<td>Nox g BAU</td>
<td>719,11</td>
<td>419,14</td>
<td>298,76</td>
<td>71,05</td>
<td></td>
</tr>
<tr>
<td>PM10 g BAU</td>
<td>160,26</td>
<td>82,18</td>
<td>77,03</td>
<td>95,65</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P4 - Citizens by bicycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 Kg week</td>
<td>633,08</td>
<td>591,50</td>
<td>-41,58</td>
<td>-7%</td>
<td></td>
</tr>
<tr>
<td>CO2 Kg year</td>
<td>30757,90</td>
<td>32919,95</td>
<td>-2162,05</td>
<td>-7%</td>
<td></td>
</tr>
</tbody>
</table>
C2.4 Transport

Some of the transport results are already given in the previous chapters along with Environmental data.

Transport data regarding modal split are obtained from the surveys on mobility and quality of transport service assessed yearly by SRM (see footnote 1 on page 11). In this section the trend 2005-2012 is highlighted for each transport mode against 2011 data.

<table>
<thead>
<tr>
<th>Mode</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>47.8%</td>
<td>48.4%</td>
<td>51.7%</td>
<td>47.1%</td>
<td>50.1%</td>
<td>43.8%</td>
<td>42.2%</td>
</tr>
<tr>
<td>Motorbike</td>
<td>11.2%</td>
<td>13.2%</td>
<td>11.5%</td>
<td>10.9%</td>
<td>14.8%</td>
<td>11.7%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Bus</td>
<td>27.6%</td>
<td>26.1%</td>
<td>20.5%</td>
<td>26.3%</td>
<td>23.1%</td>
<td>28.4%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Bicycle</td>
<td>9.4%</td>
<td>5.0%</td>
<td>5.6%</td>
<td>8.9%</td>
<td>7.6%</td>
<td>10.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Walking</td>
<td>8.3%</td>
<td>10.3%</td>
<td>11.7%</td>
<td>9.2%</td>
<td>7.9%</td>
<td>8.0%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Train</td>
<td>2.2%</td>
<td>1.1%</td>
<td>1.4%</td>
<td>3.4%</td>
<td>2.2%</td>
<td>3.7%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Data in the above chart can be better understood by visualizing them on separate graphs, as following:

FIGURE C2.4.1: Data on Modal Split – Car (Source: SRM)
FIGURE C2.4.2: Data on Modal Split – Motorbike (Source: SRM)

FIGURE C2.4.3: Data on Modal Split – Bus (Source: SRM)

FIGURE C2.4.4: Data on Modal Split – Bicycle (Source: SRM)
From the above charts, it’s possible to easily understand that in the last 7 years some good results were achieved, in general in Bologna, in almost all the modal split, except for cycling that decreased by 3% from 2010 to 2011. This data is consistent with the decrease of 2,6% reported by participants to the cycling pilot. On the other hand walking as a travel mode increased by 2,3%.

C2.5 Society

Acceptance level is strictly related to the incentive system introduced by the measure 6.2 MobiMart. In the questionnaire distributed during European Mobility Week 2010 a question asked about the usefulness of incentives systems for sustainable mobility. 662 of 746 (i.e. 88,74%) who answered the questionnaire considered such an incentive scheme as a useful tool to promote sustainable mobility. On the other hand, in the implementation of the pilot action based on cycling, of 746 respondents only 387 (51,88%) indicated an interest in the first phase and at the end only 55 (7,37% of the sample of survey respondents) participated to the pilot action.
MobiMart is a small measure that involved only participants to pilot actions even though disseminations and recruitment campaigns were arranged. So, in order to investigate the awareness level of citizens, a bundled indicator has to be used.\(^3\)

For the sake of MobiMart data related to the implementation of the MIMOSA project in Bologna, was taken from a specific question in the SRM survey during European Mobility Week 2010 road show. 178 of 746 respondents, i.e. 23.86%, said they were aware of the project MIMOSA.

In 2009 the same data were asked through a survey by the Bologna Municipality during the European Mobility Week 2009 road show. In 2009 the awareness level of the project Mimosa was 18% of a sample of 330 respondents (see Figure 16). In both the cases respondents are adults randomly interviewed among road shows participants.

![FIGURE C2.5.1: Awareness Level of MIMOSA Projects in Bologna (Source: COBO and SRM)](image)

### C3 Achievement of Quantifiable Targets and Objectives

<table>
<thead>
<tr>
<th>No.</th>
<th>Target</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To reach at least 1000 users of the different services: DRT systems, car sharing users, car pooling users with a survey that will focus on previous and actual travel behaviour in order to have data about measure impact; data about social indicators will also be collected;</td>
<td>**</td>
</tr>
<tr>
<td>2</td>
<td>To reach 5% increase of greener transports among test participants.</td>
<td>**</td>
</tr>
</tbody>
</table>

NA = Not Assessed  O = Not Achieved  ★ = Substantially achieved (at least 50%)  ★★ = Achieved in full  ★★★ = Exceeded

### C4 Up-Scaling of Results

P4 - Citizens by bicycle pilot was deemed a success, and in particular, the “challenge” component emerged as a very effective incentive. Elements of this pilot were used for the European Cycling Challenge launched in May 2012, when seven European cities challenged each other to cover the highest mileage by bicycle through their local participants. Every trip was tracked via GPS through cyclists’ mobile phones plus a web platform which allowed real-time data sharing.

For one month (from 1st to 31st May) more than 1100 people from Barcelona (Spain), Tallinn (Estonia), Reading (United Kingdom), Saronikos (Greece), Iasi (Romania), Bologna and San

---

\(^3\) A detailed analysis of awareness data is given in measure BOL 4.2 Policy planning and co-operation MRT.
Lazzaro di Savena (both Italy) joined the challenge: they cycled about 90,000 km instead of travelling by car, thus saving around 20 tons of CO2 emissions. At the end of the challenge, Tallinn and Bologna, both MIMOSA project partner cities, respectively ranked first and second, followed by Barcelona.

P4 - Citizens by bicycle was selected to be presented on 23rd May 2012 during the Transferability Workshop auction in Bologna. The measure was “purchased” by Utrecht that demonstrates interest in up-scaling the same experience. Furthermore, MobiMart P4 was selected for the Pecha Kucha and the Poster session during the Forum 2012.

C5 Appraisal of Evaluation Approach

The evaluation approach allowed the measurement of the efforts made by SRM to involve citizens and to effectively implement the pilot tests, trying to influence the behaviour of participants and to measure the change.

Building the four pilot tests and the evaluation methodology wasn’t an easy task. The pilot activities in some cases changed during their lifespan and the evaluation task was affected by this.

In order to perform an easier evaluation task, future similar measures could take into account that pilot measures are often more complex than soft or hard measures and that changes can intervene at any stage. Thus the evaluation strategy has to be as flexible as possible, always taking into consideration the final objectives of the measure. Another significant drawback for the evaluation to proceed properly is the lack of some base-line or BAU data. Some comparative data were obtained throughout SRM own research based on a wider sample.

In the case of Bologna, in which many CIVITAS measures as well as other mobility related projects are in force simultaneously, it is not easy to calculate the impact of a single measure.

C6 Summary of Evaluation Results

The key results are as follows:

- 1 Promote sustainable mobility means (Car-pooling) – despite the low number of participants, car-pooling has been shown to improve the CO2 balance (-11%) and urban traffic by reducing the number of vehicles. The measure itself is low cost, but to get noticeable results it is necessary to support car-pooling with a series of restriction measures and incentives that require strong political decisions and shared objectives among participants. Furthermore, it is mostly effective if participants have a long distance to ride.

- 2 Promote sustainable mobility means (Car sharing) – despite the fact that a Car sharing system is working in Bologna since 2002, it was not possible to implement a successful pilot on this modal shift. Reasons are highlighted in the D.2.1 Barrier chapter.

- 3 Promote sustainable mobility means (FTS) – FTS are innovative and useful as an alternative to traditional local public transport in sparsely populated areas. Since it is not a classic transport service, operated in accordance with routes and timetables, it is necessary to support the use of the service through appropriate promotional and awareness-raising campaigns. An FTS operated by a minibus can help to reduce CO2 emissions.
but overall emissions are reduced only if the average number of passengers per trip is higher than one.

- **4 Promote sustainable mobility means (Cycling)** – although the pilot on cycling was not able to change the general trend on the use of the bicycle in Bologna, within the sample group it has yielded positive results in terms of reduction in CO2 emissions (-7% in the 2011 edition and -28% in the 2012 one). The key factor that determined the success of the initiative and its repetition in broader terms (up-scaling) is linked to the "challenge" feature that involves participants in a contest, committing them to the same objective. Most participants enjoyed to be part of a group (a sort of eco-aware community) and asked already about future initiatives.

- **5 Mobility credit certification mechanism** – all the Project Description Documents were sent to the certification body after the conclusion of the pilots. After a first clarification exchange phase, a further revision was needed for some of them. It is anticipated that the certification will arrive later than expected by the project.

### C7 Future Activities Relating to the Measure

In the next months the certification of the mobility credits related to CO2 saved by MobiMart is expected. In case of positive results, the certification mechanisms could be further developed and enhanced by SRM now that it has, thanks to MIMOSA, the necessary experience and expertise, and by other local, national or European partners. The objective is to promote such a mechanism among mobility managers of private and public bodies in order to shift from a test phase to a real implementation.

In the meanwhile the dissemination of the successful pilot tests will be continued. MobiMart was showcased as Pecha Kucha and as poster during the CIVITAS Forum 2012. A paper on MobiMart will be also presented at POLIS annual conference 2012 in Perugia (IT) in November.
D  Process Evaluation Findings

D1  Deviations from the Original Plan

The deviations from the original plan comprised:

Deviation 1
Certification instead of designing of a new model – During the first implementation phase a research group was formed among SRM, COBO and AIRIS. The group found that in Italy a platform for emission credit trading system on transport based on UNFCCC (eCO2care) had already started. To access this platform it was necessary to produce a document describing the project and to obtain a certification of that. SRM, after informing the co-ordinator, contacted RINA - Italian Naval Register - which offers an independent validation and verification service for voluntary greenhouse gas reduction projects for the issue of VER (Verified Emission Reductions). The RINA scheme is based on internationally recognized standards, protocols and methods (similar to those for the flexible mechanisms established by the Kyoto Protocol). At that point the feasibility study for the creation of such system – already existing- was not necessary, but a document describing the project is needed to obtain the certification.

Deviation 2
Public protocol for certification instead of private scheme – As this sector is in continuous evolution, in November 2009, after a first approach to RINA scheme, SRM was informed that a new platform (Cartesio) dedicated to public administration was created. The Emilia-Romagna Region (another local partner of Mimosa in Bologna) signed the Cartesio Protocol. SRM, after agreement with the Municipality of Bologna, decided to focus on the Cartesio platform.

D2  Barriers and Drivers

D2.1  Barriers

Overall barriers

• Lack of cooperation – The necessary cooperation with stakeholders and other partners sometimes slowed some phases of the project and resulted in lowering the quality of project activities, forcing the measure leader to delay and to shorten the pilot phases.

• Private car use as status symbol – Use of private car is still an important status symbol in Italy. No significant regulation of restrictions is foreseen to reduce it. This barrier was significantly impacting on pilots implementation and operation phase.

Preparation phase

• Re-alignment of measure specific objective – As described in chapter D.1 (Deviation 1) measure 6.2 needed an alignment to an existing system instead of a feasibility study to set up a new one.

• Management change at stakeholder level – The first key stakeholder (Public Hospital) of the pilot “P1 car-pooling” was involved in a change of the management. This caused a delay.

Implementation phase
• **Complexity of the research** - after the first re-alignment to an existing system, as described in chapter D.1 (Deviation 1) the complexity of the measure itself caused a minor delay in measure implementation.

• **Insufficient involvement and awareness of key stakeholders and users** – The first Car-pooling test was intended to be implemented among the employees of one of the main public hospitals in Bologna. Due to the 24 hours shift work system used in the hospital it was difficult to implement the car pooling test. A poor response to enrolment was given by the hospital employees.

**Operation phase**

• **Lack of leadership** – In order to be implemented, the car-pooling and the car sharing tests needed the direct involvement of two stakeholders acting as implementation partners. The lack of leadership in pilot tests had as consequences a lower than expected number of involved volunteers and a slowdown of the recruitment process.

• **Unexpected weather conditions** – Unusual bad weather conditions in June 2011 during the pilot test “Citizens by bicycle” affected the results negatively.

**D2.2 Drivers**

**Overall Drivers**

• **Road shows as driver to involve people** – A good starting point for launching the activities and recruiting was represented by the European Mobility Week, as occasion to contact citizens directly.

• **Innovativeness and curiosity** – Some good partnerships and the innovativeness of the measure itself gave MobiMart an unexpected international significance, allowing SRM to present the results in several conferences and events.

**Preparation phase**

• **Direct contact with potential stakeholders** – Informal contact with Emilia-Romagna Region gave an opportunity to re-launch the pilot on car-pooling after the first attempt failed.

**Implementation phase**

• **Constructive and open involvement of policy key stakeholders** – the new partnership with Emilia-Romagna Region (RER) for car-pooling pilot development enabled a solution to a potential stalemate situation.

• **Constructive and open consultation and involvement of citizens or users** - the highly successful road shows during the European Mobility Week 2010 and 2011 created a good basis for conducting the pilot test.

• **Constructive partnership** – a good partnership with ATC was built in order to launch the pilot test on car sharing.

**Operation phase**

• **IT based platform** – Cooperation with Endomondo and the challenge webpage created on Endomondo.com website, gave to Citizens by bicycle test a wider visibility and produced very interesting unexpected side results (e.g. the heat map based on GPS tracking of cyclist paths). Furthermore it produced a challenge environment among participants that stimulated them to cycle more in order to obtain a better position in the ranking.
• **Constructive partnership** – The constructive partnership with TUB for MobiMart dissemination in International contexts resulted in the presentation of the measure at MOBIL TUM 2011.

### D2.3 Activities

#### Overall activities

- **Activities amendment** – The measure was amended in its original formulation. Some steps have been redesigned.

- **Wide communication campaign** – A wide communication campaign was implemented especially through social networking, road shows, press releases, media and Endomondo website.

#### Preparation phase

- **Measure first steps redrafted** – The alignment to an existing system required a market analysis instead of a feasibility study. The market analysis started after the barrier “Re-alignment of measure specific objective” occurred.

- **Contact with stakeholders** – Several meetings and contacts were arranged in order to involve the Emilia-Romagna Region as a new stakeholder.

#### Implementation phase

- **People involvement and data collection** – Consultation of target groups by face-to-face questionnaires, telephone interviews, and public awareness campaign about the sustainability problems to be solved.

- **Motivation of stakeholders** – Activities to raise the motivation of the measure partners: meetings with RER to define car-pooling test implementation.

- **Sharing of experiences** - Activities to exchange experiences with other measures: joint initiatives with ATC for car sharing related pilot activity.

#### Operation phase

- **Social Networking** – Use of social networks in order to try to shift life style patterns at the local level to more sustainable ones. This activity has been undertaken to overcome the overall barrier “Private car use as status symbol” described in chapter D2.1.

- **Extension request** – Request of a time extension for the measure duration in order to overcome the barriers and to extend the test duration. This activity has been undertaken to overcome the slowdown in the recruitment phases.

### D3 Participation

#### D3.1 Measure Partners

- **SRM Reti e Mobilità srl**: SRM is the local transport authority of Bologna. The staff of SRM managed all the phases of the measure implementation, giving where possible a direct contribution to pilot tests.

- **Municipality of Bologna**: Leader of the MIMOSA project, in the MobiMart measure acts as a principal participant playing a key role in strategy planning, dissemination and policy related issues.
D3.2 Stakeholders

- **Regione Emilia-Romagna (RER)** – Acted as pilot main stakeholder (car-pooling). Its employees were identified as potential participants in the P1 pilot.
- **ATC** – Acted as pilot main stakeholder (car-sharing) since they manage the car sharing service in Bologna. Subscribers to Bologna Car sharing service were identified as potential participants in the P2 pilot.

D4 Recommendations

D4.1 Recommendations: Measure Replication

- **Recommendation 1** – Citizen by Bicycle – Apart from being one of the pilot activities, it was a cheap and well created campaign. It is demonstrated by the fact that the pilot has been recognised at international level (Mobil-TUM 2011, TRA2012, CIVITAS Forum 2011 and 2012) and was chosen for replication in other cities. Furthermore it has been up scaled to a wider level by involving other six cities in a European Cycling Challenge in May 2012.

- **Recommendation 2** – The use of ITS and mobile apps can facilitate the collection of data and make the participation in project activities more exciting to citizens. Such technologies are able to provide instantaneous data on the performance which are useful to inform the participants and aggregated data suitable for research purposes. The use of social networks, in conjunction with mobile apps, allowed the creation of a local community among cyclists in P4.

- **General recommendation** – In general the measure implementation was more complicated than expected, especially the data collection and the evaluation. From the management point of view, in a potential replication of the measure, it is advisable to focus on single pilot activity and to involve potential stakeholders or partners in a more constructive planning of the measure. Incentive effectiveness could be improved if supplemented by a good promotional and advertising campaign in order to share a “vision” with citizens. The “challenge” mechanism was very stimulating and allowed the participants to feel part of a community in action, that was doing something good for sustainable mobility. Incentives for sustainable mobility can be even more effective if accompanied by a series of disincentives to individual motorized modes.

D4.2 Recommendations: Process (Related to Barrier-, Driver- and Action Fields)

- **Recommendation 1** – Cooperation with partners and/or stakeholders could in some ways modify the progress of activities. This must be taken into account when the implementation of a measure necessarily involves other counterparts. In such a case, a recovery plan must be drafted. Dealing with public administration and governmental bodies, the issue related to elections and to change of management has to be taken into account especially when the project activities are long-lasting.

- **Recommendation 2** – To create a group of users and maintain a relationship with them through all the available means is the best way to get constant feedback on the
actions implemented. Often, however, this means treating communication (through social networks and e-mail) in a meticulous way dedicating a lot of human resources to this activity.
E  References


1.0 Flexible Transport Service BAU

The graph below displays the number of passengers per week from the start-up of the FTS service in June 2009 to the end of January 2011, just before the start of the pilot (February 2011) related activities. The trend line show that the number of users is constantly increasing from the start of the ColBUS service.

Since the pilot activities started in February 2011, it is interesting to observe also the BAU trend during the period February 2010 – September 2010 (the year before the pilot) in order to compare these figures with those deriving from the pilot. In the graph below it is possible to perceive that during the observed period (highlighted in green) the trend is rapidly decreasing. The reason of the decrease in passenger numbers is due to a regular decline of PT users during summertime.
In order to obtain a BAU that take into consideration both the trends, 2010 figures (February – September) were adjusted to users general trends and moved to the same period of 2011. In the next graph 2010 green highlighted figures are extrapolated to 2011 (as highlighted by the red arrow) and adjusted to general trend (+26%).

The graph gives an overview of expected number of passengers in 2011 (after the pilot) and expected trend. The new trend line is calculated taking into consideration the average increasing in FTS passengers resulted by general trend. This results in a different slope of the new trend line thus in a different BAU.
2.0 P1 - Car-pooling among Emilia-Romagna Region employees

As already stated in chapter C2.3 (P1), CO2 emissions produced during the Project test as well as of the emission saving obtained by each team have been calculated respectively through the following formulas:

\[
Ep = \sum_{i=1}^{m}(P_i \times FEai) \sum_{j=1}^{m}(P_j \times FEaj) \sum_{i=1}^{m}(P_i \times FEai) + \sum_{j=1}^{m}(P_j \times FEaj)
\]

and

\[
Er = Ep - Eb
\]

Indeed analysing the data obtained by the registrations of the AZRegolo system, it is evident that team members’ behaviour was very heterogeneous and the registrations themselves were affected by those displacement not directly connected to the home/workplace/home displacements which the project refers to.

Therefore, before applying the above formulas, data have been elaborated over and over in order to remove irrelevant elements.

Elaborations have been carried on as follows, using filters built through an Access database:

- From the data imported by the AZRegolo system all displacements done during non-working days have been excluded
- All displacements considered "out of time", that is when the end and the start of the moving are respectively before 7am and after 8pm, have been excluded
- Those displacements started within 15 minutes of the end of the previous displacement done by the same vehicle during the same day, have been identified as chain displacements and then analysed as single displacements
- All displacements having a travel distance lower or higher than 1/3 the home-workplace distance calculated for one member of the team, have been excluded from the calculation.
- For every distance accomplished by the teams, the evolution percentage on motorway, external roads and internal roads was calculated in order to distribute correctly the total kilometres run by each team vehicle bearing in mind the running condition and therefore the emission factor.
- By the running condition it has been assumed that for the motorway cycle, the external cycle and the internal cycle, the average speed is respectively 90 Km/h, 70 km/h and 50 Km/h.

The table below reports the main input data and the results obtained as baseline and as test for the three teams:
## Car-Pooling Team Test

<table>
<thead>
<tr>
<th></th>
<th>Team 1</th>
<th></th>
<th>Team 2</th>
<th></th>
<th>Team 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Test</td>
<td>Baseline</td>
<td>Test</td>
<td>Baseline</td>
<td>Test</td>
</tr>
<tr>
<td><strong>Auto</strong></td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>n. days test</td>
<td>132</td>
<td>132</td>
<td>132</td>
<td>132</td>
<td>132</td>
<td>132</td>
</tr>
<tr>
<td>n. days in car-pooling</td>
<td>0</td>
<td>0</td>
<td>49</td>
<td>49</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>n. sharing travels</td>
<td>0</td>
<td>0</td>
<td>70</td>
<td>70</td>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td>km theoretical total</td>
<td>2.35</td>
<td>0</td>
<td>2.35</td>
<td>0</td>
<td>2.35</td>
<td>0</td>
</tr>
<tr>
<td>km no car-pooling</td>
<td>0</td>
<td>0</td>
<td>603</td>
<td>0</td>
<td>0</td>
<td>1.222</td>
</tr>
<tr>
<td>km run</td>
<td>2.35</td>
<td>0</td>
<td>2.35</td>
<td>0</td>
<td>1.74</td>
<td>0</td>
</tr>
<tr>
<td>Vehicle coeff.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0.74</td>
<td>1</td>
<td>0.91</td>
</tr>
<tr>
<td>CO2 total emission (t)</td>
<td>0,51</td>
<td>0,47</td>
<td>3.99</td>
<td>3.51</td>
<td>0,27</td>
<td>0,27</td>
</tr>
<tr>
<td>Saving on CO₂ emissions (t)</td>
<td>0,0</td>
<td><strong>0,04</strong></td>
<td>0,0</td>
<td><strong>0,48</strong></td>
<td>0,0</td>
<td><strong>0,00</strong></td>
</tr>
<tr>
<td>Reduction percentage on baseline</td>
<td><strong>8,5%</strong></td>
<td><strong>12,0%</strong></td>
<td><strong>0,0%</strong></td>
<td><strong>0,0%</strong></td>
<td><strong>0,0%</strong></td>
<td><strong>0,0%</strong></td>
</tr>
</tbody>
</table>

*Table E1: Car Pooling pilot results*
3.0 P3 - Flexible Transport Service: a pilot test on ColBUS – La Navetta del Borgo

As already stated in chapter C2.3 (P3) data on participants in the pilot week were assessed against ColBUS data.

ColBUS is a minibus Diesel 2500 cc Euro 4 with emission of (g/km):

<table>
<thead>
<tr>
<th>CO2 (g)</th>
<th>Nox (g)</th>
<th>PM10 (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>247,4</td>
<td>0,59</td>
<td>0,13</td>
</tr>
</tbody>
</table>

Table E2: ColBUS emissions

Total emissions during the pilot week are estimated (on a base of 70 trips related to passengers respondent to the after survey; two passengers declined accounting for 10 trips less on the total of 80) to be:

<table>
<thead>
<tr>
<th>CO2 (g)</th>
<th>Nox (g)</th>
<th>PM10 (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.303,1</td>
<td>122,3</td>
<td>27,0</td>
</tr>
</tbody>
</table>

Table E4: ColBUS total emission

Considering only the participants in the pilot having at least one motor vehicle in the family, their journeys, emission factors of vehicles owned and co-modality (where appropriate), if all the trips were made using private cars (driver or passenger), emissions would have been higher in terms of CO2 and lower in terms of Nox and PM10:

<table>
<thead>
<tr>
<th></th>
<th>CO2 (g)</th>
<th>Nox (g)</th>
<th>PM10 (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ColBUS TOTAL</td>
<td>33.325,3</td>
<td>79,5</td>
<td>17,5</td>
</tr>
<tr>
<td>Private vehicles</td>
<td>81.782,6</td>
<td>71,5</td>
<td>13,8</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CoLBUS single trip (avg)</td>
<td>757,39</td>
<td>1,81</td>
<td>0,40</td>
</tr>
<tr>
<td>Private vehicles single trip (avg)</td>
<td>1.858,70</td>
<td>1,62</td>
<td>0,31</td>
</tr>
</tbody>
</table>

Table E5: Comparison among owned vehicles and ColBUS emissions
Taking into account all the participants and all the trips made during the pilot week, emission factors could be considered as following:

<table>
<thead>
<tr>
<th></th>
<th>CO2 (g)</th>
<th>Nox (g)</th>
<th>PM10 (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ColBUS TOTAL</td>
<td>51.303,1</td>
<td>122,3</td>
<td>27,0</td>
</tr>
<tr>
<td>Other vehicles</td>
<td>81.782,6</td>
<td>71,5</td>
<td>13,8</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ColBUS single trip (avg)</td>
<td>732,90</td>
<td>1,75</td>
<td>0,39</td>
</tr>
<tr>
<td>Other vehicles</td>
<td>1.168,32</td>
<td>1,02</td>
<td>0,20</td>
</tr>
<tr>
<td>single trip (avg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>-435,42</td>
<td>0,73</td>
<td>0,19</td>
</tr>
<tr>
<td>Difference</td>
<td>-37,27%</td>
<td>+71,5%</td>
<td>+95%</td>
</tr>
</tbody>
</table>

Table E6: Comparison among all participants and ColBUS emissions

In order to assess the impact of the pilot week on FTs ColBUS, differences on emission factors have to be multiplied by the number of passengers (single trip) increased thanks to the pilot week (410,92). Results are positive in terms of CO2 reduction but negative in terms of Nox and PM10 reduction.

<table>
<thead>
<tr>
<th></th>
<th>CO2 (g)</th>
<th>Nox (g)</th>
<th>PM10 (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ColBUS pilot impact</td>
<td>-178.923,46</td>
<td>298,76</td>
<td>77,03</td>
</tr>
</tbody>
</table>

Table E7: Results of FTS pilot
4.0 P4 - Citizens by bicycle

As already stated in chapter C2.3 (P4), based on mileage/modalities data, for each participant two different transport footprints (average CO2/km) were calculated. In order to calculate the CO2 saved it was needed to compare the after mileage with the two parameters. In other words: if during the pilot the participant Tom would have behaved as before, he would have polluted X (X=transport footprint before * mileage after), but since his behaviour changed thanks to the measure implementation, he polluted Y (Y=transport footprint after * mileage after). The difference is the CO2 saved.

By applying the formula described in C2.3 to data collected among participants to pilot test, results of the pilot could be summarized as following:

<table>
<thead>
<tr>
<th>Participant ID</th>
<th>CO2 Δemission (Kg/week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>153</td>
<td>-17.79673239</td>
</tr>
<tr>
<td>126</td>
<td>-15.06624706</td>
</tr>
<tr>
<td>1002</td>
<td>-7.346730769</td>
</tr>
<tr>
<td>303</td>
<td>-5.285</td>
</tr>
<tr>
<td>514</td>
<td>0</td>
</tr>
<tr>
<td>913</td>
<td>-1.63945</td>
</tr>
<tr>
<td>755</td>
<td>0</td>
</tr>
<tr>
<td>1029</td>
<td>-2.088833333</td>
</tr>
<tr>
<td>497</td>
<td>-0.1936</td>
</tr>
<tr>
<td>1025</td>
<td>0</td>
</tr>
<tr>
<td>347</td>
<td>-4.789918033</td>
</tr>
<tr>
<td>712</td>
<td>-6.981334</td>
</tr>
<tr>
<td>910</td>
<td>-2.7768296</td>
</tr>
<tr>
<td>1036</td>
<td>-2.416</td>
</tr>
<tr>
<td>159</td>
<td>-1.35296</td>
</tr>
<tr>
<td>1020</td>
<td>6.04</td>
</tr>
<tr>
<td>311</td>
<td>0.010785714</td>
</tr>
<tr>
<td>1039</td>
<td>-0.906</td>
</tr>
<tr>
<td>173</td>
<td>-5.858076923</td>
</tr>
<tr>
<td>1045</td>
<td>-0.024961224</td>
</tr>
<tr>
<td>132</td>
<td>3.02</td>
</tr>
<tr>
<td>482</td>
<td>-0.201333333</td>
</tr>
<tr>
<td>1044</td>
<td>0</td>
</tr>
<tr>
<td>241</td>
<td>0.329454545</td>
</tr>
<tr>
<td>352</td>
<td>-2.461</td>
</tr>
<tr>
<td>477</td>
<td>0.181698113</td>
</tr>
<tr>
<td>793</td>
<td>0.755</td>
</tr>
<tr>
<td>315</td>
<td>0</td>
</tr>
<tr>
<td>89</td>
<td>0</td>
</tr>
<tr>
<td>848</td>
<td>-8.407944056</td>
</tr>
<tr>
<td>336</td>
<td>-4.715658095</td>
</tr>
<tr>
<td>47</td>
<td>-0.998168831</td>
</tr>
<tr>
<td>265</td>
<td>1.488428571</td>
</tr>
<tr>
<td>564</td>
<td>-4.098571429</td>
</tr>
<tr>
<td>1017</td>
<td>6.871094488</td>
</tr>
<tr>
<td>35</td>
<td>-0.012177419</td>
</tr>
<tr>
<td>566</td>
<td>3.83044944</td>
</tr>
<tr>
<td>1028</td>
<td>1.09269542</td>
</tr>
<tr>
<td>416</td>
<td>0</td>
</tr>
<tr>
<td>131</td>
<td>0</td>
</tr>
<tr>
<td>124</td>
<td>3.720090909</td>
</tr>
<tr>
<td>383</td>
<td>3.878315789</td>
</tr>
<tr>
<td>1005</td>
<td>0.906</td>
</tr>
<tr>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>Measure</td>
<td>CO2 Emissions (kg)</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------</td>
</tr>
<tr>
<td>1007</td>
<td>0</td>
</tr>
<tr>
<td>155</td>
<td>1.51</td>
</tr>
<tr>
<td>1006</td>
<td>1.6912</td>
</tr>
<tr>
<td>747</td>
<td>0</td>
</tr>
<tr>
<td>1043</td>
<td>5.436</td>
</tr>
<tr>
<td>178</td>
<td>3.243162105</td>
</tr>
<tr>
<td>503</td>
<td>0</td>
</tr>
<tr>
<td>521</td>
<td>6.342</td>
</tr>
<tr>
<td>467</td>
<td>0</td>
</tr>
<tr>
<td>156</td>
<td>-0.582099237</td>
</tr>
<tr>
<td>103</td>
<td>-0.86927027</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>-41.57792541</strong></td>
</tr>
</tbody>
</table>

Table E8: result of CO2 emissions/participants in P4
Annex II: Surveys

Attached survey forms used for MobiMart pilot (P2 before 2nd attempt is translated into English)

Compila il modulo con i tuoi dati ed invialo all'ufficio del Mobility Manager all'indirizzo e-mail carpooling@regione.emilia-romagna.it: i dati che ci fornirai saranno utilizzati esclusivamente nell’ambito del progetto dal Mobility Manager della Regione Emilia-Romagna e da AZMobility Srl al fine di verificare le possibilità di costituire equipaggi per i viaggi da effettuarsi in car pooling.

Come ti chiami?

<table>
<thead>
<tr>
<th>Nome e Cognome</th>
<th>Età</th>
<th>Sesso</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Da dove vieni? (indirizzo del punto di origine dello spostamento)

<table>
<thead>
<tr>
<th>Città di residenza</th>
<th>PROV</th>
<th>Via</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A che ora parti da casa per recarti in ufficio?

A che ora arrivi a destinazione?

Dove ti rechi ogni giorno per lavoro? (indirizzo della sede lavorativa)

<table>
<thead>
<tr>
<th>Città</th>
<th>PROV</th>
<th>Via</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A che ora esci dall'ufficio per tornare a casa?

A che ora arrivi a casa?

Come possiamo contattarti?

<table>
<thead>
<tr>
<th>Indirizzo e-mail</th>
<th>N. Tel.</th>
<th>n. Cell.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Quale ruolo sei disposto/a a ricoprire?

- ☐ Guidatore
- ☐ Passeggero
- ☐ Entrambi

INFORMATIVA ai sensi dell’articolo 13 del Decreto Legislativo 30/06/2003 n°196

L’Associazione AUTO INSIEME e AZMobility Srl nel rispetto della legge sulla tutela dei dati personali, nel testo ad oggi vigente, ed in particolare ai sensi dell’articolo 13 d.lgs. 196/03, desiderano informarla che i dati personali e anagrafici da Lei forniti formano oggetto di trattamento da parte degli stessi.

Tipi di dati trattati.

Saranno trattati tutti i dati personali indispensabili all’identificazione (nome, cognome, denominazione sociale, sede sociale, indirizzo, n. tel., e-mail, ecc.) ed al successivo contatto per iniziative divulgative. Non vengono in alcun modo trattati dati sensibili.

Modalità di raccolta dati e finalità del trattamento.

I dati vengono raccolti presso gli interessati direttamente e conservati nelle nostre sedi. I dati vengono raccolti e registrati parzialmente su carta e con l’ausilio di elaboratori, per le finalità, esplicite e legittime, costituite dall’invio di corrispondenza per informazione istituzionale e/o commerciale relativa ai servizi di Associazione AUTO INSIEME e AZMobility Srl, dei loro associati e convenzionati.

Obbligo del conferimento dei dati.

Il conferimento dei dati personali necessari alla finalità di cui al precedente punto non è obbligatorio ma il suo rifiuto precluderà lo svolgimento del rapporto.

Comunicazione e diffusione dei dati.

Nell’ambito delle attività inerenti la presente raccolta dati, non si rende necessaria alcuna forma di comunicazione o diffusione dei dati. I dati verranno forniti a organi amministrativi, a organi giudiziari, a organi di vigilanza e controllo, a organi o enti relativi al loro trattamento, inviando una richiesta in tal senso, in qualsiasi forma (fax, e-mail, lettera) ai nostri recapiti presso le sedi legali.

I suoi diritti e come farli valere.

Potrà rivolgersi per far valere i Suoi diritti, così come previsto dall’articolo 7 del d.Lgs. 196/03, alle nostre sedi, in qualsiasi forma (e-mail, fax, lettera), in relazione al trattamento dei dati personali Lei ha infiniti diritti: a) di conoscere in ogni momento quali sono i suoi dati personali in nostro possesso e come essi vengano utilizzati; b) di fare aggiornare, integrare, rettificare o cancellare tali dati; c) di chiedere la sospensione od opporsi al loro trattamento, inviando una richiesta in tal senso, in qualsiasi forma (fax, e-mail, lettera) ai nostri recapiti presso le sedi legali. Nell’esercizio di tali diritti può conferire, per iscritto, delega o procura a persone fisiche o ad associazioni.

Titolare e Responsabile del trattamento dati ed inoltro richieste.

Il titolare del trattamento dati personali è individuato nei rappresentanti legali pro-tempore di Associazione AUTO INSIEME e AZMobility Srl che non hanno provveduto alla nomina di un responsabile in ottemperanza al disposto dell’art. 29, primo comma del D. Lgs. 196/03. Le richieste vanno dunque inoltrate a Associazione AUTO INSIEME e AZMobility Srl, presso la loro sede legale e saranno smistate secondo la competenza. I recapiti postali, telefonici, fax, mail e indirizzo internet sono quelli indicati nell’intestazione del presente documento.

Consenso al trattamento dei dati personali

Preso atto dell’informativa di cui all’articolo 13 del Decreto Legislativo 30/06/2003 n°196 fornitami da Associazione AUTO INSIEME e AZMobility Srl.

La sottoscritto/a ☐ Accetta - ☐ Non Accetta al trattamento dei propri dati personali per finalità d’informazione e promozione istituzionale e commerciale. Rimane fermo che il consenso è condizionato al rispetto delle disposizioni della vigente normativa.

Data _______________  Firma ____________________________________________
P2 – Car-sharing (before 1<sup>st</sup> attempt)

**Gentile utente,**
la ringraziamo per aver accettato di rispondere al presente questionario.

**Scopo** del questionario è quello di conoscere le abitudini, le modalità e la frequenza di utilizzo del car sharing. Il questionario verrà ripetuto tra i partecipanti che volontariamente acconsentiranno a ciò, alla fine di un periodo di test per verificare se l’applicazione delle misure previste dal progetto MIMOSA avranno sortito effetti sui parametri oggetto di studio.

A tal proposito lei potrà scegliere di restare anonimo, oppure potrà compilare la parte anagrafica e decidere di partecipare alla seconda fase.

La partecipazione alla seconda fase può avvenire secondo due modalità:

1. **compila la scheda anagrafica ma sceglie di non partecipare all’azione pilota;** in tal caso le sarà solo richiesto di compilare nuovamente lo stesso questionario trascorso un determinato periodo di tempo; al termine del test, per ringraziarla della partecipazione, le sarà riconosciuto uno sconto una tantum pari a 5 euro sulle tariffe del car sharing (non cumulabile).

2. **compila la scheda anagrafica e sceglie di partecipare all’azione pilota;** in tal caso verrà effettuato un monitoraggio sugli spostamenti attuati utilizzando il car sharing. Alla fine del monitoraggio le sarà somministrato nuovamente un questionario. Ai partecipanti al monitoraggio sarà riconosciuto uno sconto una tantum pari a 10 euro sulle tariffe del car sharing (non cumulabile) oltre a ulteriori benefit legati al raggiungimento di determinati obiettivi, che saranno comunicati in seguito.

In ogni caso i suoi dati personali non saranno divulgati o resi accessibili al di fuori degli scopi della presente indagine.

Selezionare la casella di interesse

- Desidero restare anonimo.
- Desidero compilare nuovamente il questionario tra qualche mese e quindi fornisco i miei dati anagrafici e do il consenso al loro trattamento per i fini statistici. (sconto di 5 euro)
- Desidero partecipare all’azione pilota quindi fornisco i miei dati anagrafici e do il consenso al loro trattamento per i fini statistici. (sconto di 10 euro)

Cognome________________________ Nome______________________
Tel.______________________email_____________________________
Firma___________________________

Le informazioni fornite verranno trattate in forma riservata, a fini statistici e per l’assegnazione di eventuali benefit e premi, nel pieno rispetto del D.LGS. 196/2003 sulla privacy. In ogni momento potrà modificarle o annullarle rivolgendosi al responsabile trattamento dati (Dora Ramazzotti 051 0878251)
QUESTIONARIO UTENTI PRIVATI

1. Come è venuto a sapere del servizio di car sharing?
   1. Articoli su giornali
   2. Servizi in tv
   3. Pubblicità (per strada e giornali)
   4. Vedendo le auto
   5. Sentito parlare/passaparola
   6. Altro (specificare___________________________________________)
   7. Non so

2. Mi può dire qual è il motivo principale per cui utilizza il servizio di car sharing?
   1. Mancanza assoluta di auto di famiglia
   2. Indisponibilità di auto di famiglia (al posto della seconda/terza auto)
   3. Altro (specificare___________________________________________)

3. Per quali ragioni utilizza l’auto in car sharing?
   1. Convenienza economica
   2. Praticità e facilità d’uso del servizio
   3. Libertà di muoversi in ZTL
   4. Possibilità di utilizzare le vie e corsie preferenziali riservate ai bus
   5. Parcheggio gratuito sulle righe blu
   6. Possibilità di tenere sotto controllo i costi dell’auto
   7. Curiosità/interesse
   8. Sensibilità ambientale
   9. Carenza di parcheggi
   10. Altro (specificare___________________________________________)

4. E, normalmente, per che tipo di spostamento utilizza il car sharing? (MAX 2 risposte)
   1. Per recarsi/tornare dal lavoro /scuola/università
   2. Per motivi di lavoro
   3. Per acquisti/commissioni
   4. Svago/tempo libero
   5. Accompagnamento figli/familiari/visite amici/parenti
   6. Altro (specificare___________________________________________)
   7. Non so

5. Pensando agli ultimi 6 mesi, con che frequenza le è capitato di utilizzare l’automobile in car sharing?
   1. Tutti i giorni o quasi
   2. 2/3 volte alla settimana
   3. 1 volta alla settimana
   4. 2/3 volte al mese
   5. 1 volta al mese
   6. Più raramente
   7. Non so

6. Mediamente, quanti chilometri al mese effettua con l’auto in car sharing?
   1. Fino a 25
   2. Da 26 a 50
   3. Da 51 a 100
7. In genere Per raggiungere i parcheggi car sharing quali sono le modalità che utilizza
più di frequente? (Max 2 risposte)
   1. Passaggio in auto
   2. Mezzi pubblici
   3. Moto/motorino
   4. Bicicletta
   5. A piedi
   6. Altro (Specificare ________________________________)

8. Se non ci fosse stato il car sharing avrebbe fatto ugualmente gli stessi spostamenti?
   1. Sì
   2. No (Vada direttamente alla domanda 10)
   3. Non so (Vada direttamente alla domanda 10)

9. Se si, con quale mezzo o mezzi avrebbe fatto i suoi spostamenti? (MAX 2 risposte)
   1. a piedi
   2. bicicletta
   3. moto o scooter
   4. auto come conducente
   5. auto come passeggero
   6. autobus urbano di Bologna
   7. autobus suburbano
   8. treno
   9. bus aziendale o scolastico
   10. taxi/noleggio auto con conducente
   11. Altro (Specificare ________________________________)
   12. Non so

10. Senza contare l’auto in car sharing mi potrebbe dire quante auto avete a
    disposizione in famiglia?
    1. Nessuna (Vada direttamente alla domanda 17)
    2. 1
    3. 2
    4. 3
    5. 4 o più

11. A quale categoria appartiene l’auto che utilizza prevalentemente?
    1. City car
    2. Utilitaria
    3. Berlina
    4. SUV/Mono volume
    5. Familiare/SW
    6. Sportiva (spider/coupé)
    7. Fuoristrada
    8. Furgone
    9. Non so
12. Qual è la cilindrata dell’auto che utilizza prevalentemente?
   1. Fino a 1.000 cc
   2. 1001 - 1400
   3. 1401 - 1800
   4. 1801 - 2200
   5. 2201 - 2600
   6. Oltre 2600

13. Che tipo di alimentazione utilizza?
   1. Benzina
   2. Diesel
   3. Mista benzina/GPL
   4. Mista benzina/Metano
   5. Ibrida benzina/elettrica

14. Con che frequenza le capita di utilizzare quest’auto?
   1. Tutti i giorni o quasi
   2. 2/3 volte alla settimana
   3. 1 volta alla settimana
   4. 2/3 volte al mese
   5. 1 volta al mese
   6. Più raramente

15. E prevalentemente per quali motivi la utilizza? (max 2 risposte)
   1. Per recarsi/tornare dal lavoro /scuola/università
   2. Per motivi di lavoro
   3. Per acquisti/commissioni
   4. Svago/tempo libero
   5. Accompagnamento figli/familiari/visite amici/parenti
   6. Altro (Specificare _________________________________________)
   7. Non so

16. Mi può dire mediamente quanti chilometri all’anno percorre con quest’auto?
   1. Fino a 2500
   2. Da 2501 a 5000
   3. Da 5001 a 7500
   4. Da 7500 a 10000
   5. Da 10001 a 15000
   6. Da 15001 a 17000
   7. Oltre 17000
   8. Non so

17. Utilizza per i suoi spostamenti moto o scooter?
   1. Si
   2. No (vada direttamente alla domanda n. 21)

18. Se sì, saprebbe indicare la cilindrata?
   1. 50
   2. 100 - 150
   3. 151 - 250
4. Oltre 250

19. Che tipo di motore ha?
   1. Due tempi
   2. Quattro tempi
   3. Non so

20. Mi può dire mediamente quanti chilometri all’anno percorre con la moto/scooter?
   1. Fino a 2500
   2. Da 2501 a 5000
   3. Da 5001 a 7500
   4. Da 7500 a 10000
   5. Da 10001 a 15000
   6. Da 15001 a 17000
   7. Oltre 17000
   8. Non so

21. Nel corso degli ultimi 12 mesi Lei ha utilizzato la bicicletta come mezzo di trasporto (Non come attività sportiva)?
   1. più giorni alla settimana indipendentemente dalla stagione
   2. più giorni alla settimana quando il tempo era bello
   3. solo nei fine settimana
   4. raramente
   5. mai (Vada direttamente alla domanda 23)

22. Normalmente, per quale motivo utilizza la bicicletta? (max 2 risposte)
   1. Per recarsi/tornare dal lavoro/scuola/università
   2. Per motivi di lavoro
   3. Per acquisti/commissioni
   4. Svago/tempo libero
   5. Accompagnamento figli o visite amici/parenti
   6. Altro (specificare __________________________________________)

23. Con che frequenza le capita di utilizzare i mezzi pubblici?’
   1. Tutti i giorni
   2. 2/3 volte alla settimana
   3. 1 volta alla settimana
   4. 2/3 volte al mese
   5. 1 volta al mese
   6. Alcune volte all’anno
   7. Mai (vada direttamente alla domanda 25)

24. Normalmente, per quale motivo utilizza i mezzi pubblici? (max 2 risposte)
   1. Per recarsi/tornare dal lavoro/scuola/università
   2. Per motivi di lavoro
   3. Per acquisti/commissioni
   4. Svago/tempo libero
   5. Accompagnamento figli/familiari/visite amici/parenti
   6. Altro (specificare __________________________________________)
   7. Non so
25. Da quando ha aderito al servizio di car sharing secondo lei il numero dei chilometri complessivi che percorre in auto è:
   1. Diminuito
   2. Aumentato (Vada direttamente alla domanda 27)
   3. Rimasto uguale (Vada direttamente alla domanda 27)
   4. Non so (Vada direttamente alla domanda 27)

26. Se diminuito, di quanto annualmente?
   1. Km ____________ (inserire numero anche approssimativo)
   2. Non so

27. Aderendo o dopo aver aderito al car sharing ha ceduto, rottamato o evitato di acquistare almeno un’automobile in famiglia?
   1. SI
   2. NO
   3. Non so

28. E sempre dal momento in cui ha aderito al servizio di car sharing la frequenza con cui utilizza i mezzi pubblici è:
   1. Aumentata
   2. Rimasta uguale
   3. Diminuita
   4. Non so

29. In sintesi, da quando ha aderito al car sharing le spese complessive dedicate agli spostamenti sono:
   1. Aumentate
   2. Rimaste uguali
   3. Diminuite
   4. Non so

30. Secondo lei per migliorare il servizio di car sharing e adattarlo alle necessità degli utenti, su quali tra i seguenti aspetti bisognerebbe intervenire prioritariamente?
   1. L’efficienza nella prenotazione
   2. I parcheggi
   3. Le auto
   4. Il costo dell’abbonamento
   5. Il costo della tariffa oraria
   6. Il costo della tariffa per chilometro
   7. I costi extra per i servizi
   8. L’entità delle ammende
   9. L’informazione e la comunicazione alla clientela
   10. Convenzioni con aziende di noleggio auto
   11. Tessera per utilizzo familiare
   12. Altro (specificare____________________________________________)
   13. Non so
Measure title: MobiMart Research  
City: Bologna  
Project: MIMOSA  
Measure number: 6.2

P2 – Car-sharing (before 2nd attempt) – online on surveymonkey (http://www.surveymonkey.com/s/Porta_un_amico_in_Car_Sharing)

1 Gender
   - M
   - F

2 AGE
   - 18-20
   - 21-29
   - 30-39
   - 40-49
   - 50-59
   - >60

3 How long are you a Car Sharing user?
   - More than 1 year
   - Less than 1 year but more than 6 months
   - Less than 6 months but more than 3 months
   - Less than 3 months

4 How often you use the following means of transport? (every day, more than once a week, once a week, more than once a month, once a month)
   - Trains
   - Urban Buses
   - Buses
   - Private car
   - Car sharing
   - Bicycle
   - Motorbike

5 For which reasons you use the Car Sharing?
   - Work reason
   - Free time/leisure
   - Going to supermarket
   - Shopping
   - Private reason

6 Are you satisfied with Car Sharing service?
   - Very satisfied
   - Satisfied
   - Unconcerned
   - Unsatisfied
   - Very unsatisfied

7 Were you already aware of the “Bring a Friend Campaign”? 
   - Yes
   - No

8 → YES to 7 - If Yes, are you planning to take part to the Campaign, bringing one or more friends?
   - Yes
   - No

9 → YES to 7 - If you didn’t invited your friends can you tell us the reasons?
10 \rightarrow \text{NO to 7} – if you are a Car Sharing user you can invite your friend to subscribe. The “Bring a Friend Campaign” foresees a 10 trips BUS ticket for each new subscriber and for the inviting user. At the end of the Campaign, a folder bike and two BUS monthly tickets will be raffled among participants. The Campaign ends on February 23, 2012. Do you want to bring some friends?

11 \rightarrow \text{NO to 10} – If No, can you explain us why?
Indagine sui passeggeri colBUS

Questa indagine è condotta da SRM - Reti e Mobilità, agenzia per la mobilità e il trasporto pubblico locale per valutare la soddisfazione dei passeggeri e l'impatto del colBUS sul cambiamento delle abitudini di viaggio e sulla mobilità. L'indagine fa seguito all'iniziativa “Innamorati di colBUS” tenutasi in febbraio. Le chiediamo di rispondere a poche brevi domande in quanto utente del colBUS durante la settimana promozionale. In questo modo potrà partecipare all’estrazione di un abbonamento mensile.

Tutte le informazioni saranno trattate con il più stretto riserbo e saranno utilizzate per motivi di ricerca e per il miglioramento della fornitura del servizio.

Indagine condotta da SRM
Nome dell’intervistatore Giulia Quadrelli
Nome del servizio FLIPPER colBUS – Borgo Panigale
Data Fermata di Salita
Luogo Bologna Fermata di Discesa

Domande personali. Servono a comprendere le necessità di trasporto

Nome (optional)
Indirizzo

<table>
<thead>
<tr>
<th>telefono</th>
<th>Codice postale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uomo</td>
<td>Donna</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Età</th>
<th>&lt;16</th>
<th>16-25</th>
<th>26-40</th>
<th>41-60</th>
<th>61-70</th>
<th>71-85</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Condizione professionale</th>
<th>Impiegato Full-time</th>
<th>Impiegato Part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studente</td>
<td>Studente lavoratore</td>
<td></td>
</tr>
<tr>
<td>Disoccupato/a</td>
<td>Pensionato/a</td>
<td></td>
</tr>
<tr>
<td>In cerca di occupazione</td>
<td>Altro</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quante auto ci sono nella sua famiglia</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3 o più</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha una patente di guida valida?</td>
<td>Si</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SE PUÒ AVERE ACCESSO A UN’AUTO indichi quanto spesso può utilizzarla (auto propria o di terzi)</th>
<th>Sempre</th>
<th>Durante le ore diurne</th>
<th>Nelle ore serali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekend</td>
<td>Ore serali e weekend</td>
<td>Mai</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alimentazione auto 1</th>
<th>Benzina</th>
<th>Diesel</th>
<th>Gpl</th>
<th>Metano</th>
<th>Ibrida</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Cilindrata auto 1</th>
<th></th>
</tr>
</thead>
</table>
### Domande relative all'utilizzo del servizio FLIPPER - colBUS

<table>
<thead>
<tr>
<th>Ricorda il motivo dei/i viaggi/o effettuato/i durante la settimana gratuita?</th>
<th>si</th>
<th>no</th>
<th>Se si quale?</th>
<th>Bus urbano</th>
<th>Treno</th>
<th>Altro mezzo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ricorda se i/l viaggi/o sono/è proseguiti/o con altro mezzo?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viaggio 1</td>
<td>si</td>
<td>no</td>
<td>Se si quale?</td>
<td>Bus urbano</td>
<td>Treno</td>
<td>Altro mezzo</td>
</tr>
<tr>
<td>Viaggio 2</td>
<td>si</td>
<td>no</td>
<td>Se si quale?</td>
<td>Bus urbano</td>
<td>Treno</td>
<td>Altro mezzo</td>
</tr>
<tr>
<td>Viaggio 3</td>
<td>si</td>
<td>no</td>
<td>Se si quale?</td>
<td>Bus urbano</td>
<td>Treno</td>
<td>Altro mezzo</td>
</tr>
</tbody>
</table>

(Se si) Se lo ricorda, può indicare il luogo di destinazione approssimativa? (es. Bologna centro, stazione, fermata bus, ecc)

<table>
<thead>
<tr>
<th>Prima della settimana promozionale del servizio colBUS, effettuava spostamenti simili?</th>
<th>SI</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>–Se sì, in che modo?</td>
<td>Auto-guidatore</td>
<td>Auto-passeggero</td>
</tr>
</tbody>
</table>
### Measure title:
MobiMart Research

### City:
Bologna

### Project:
MIMOSA

### Measure number:
6.2

<table>
<thead>
<tr>
<th>A piedi</th>
<th>bici</th>
<th>Moto/motorino</th>
</tr>
</thead>
<tbody>
<tr>
<td>colbus</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **se no, perché?**

<table>
<thead>
<tr>
<th>Non avevo bisogno di spostarmi</th>
<th>Non avevo possibilità di spostarmi</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Dopo la settimana promozionale del servizio colBUS, effettua spostamenti simili?</th>
<th>SI</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-guidatore</td>
<td>Auto-passeggero</td>
<td>Con altri mezzi pubblici</td>
</tr>
<tr>
<td>A piedi</td>
<td>Moto/motorino</td>
<td>bici</td>
</tr>
<tr>
<td>colbus</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **se NO, perché?**

<table>
<thead>
<tr>
<th>Non ho bisogno di spostarmi</th>
<th>altro</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Se utilizza colBUS, che tipo di biglietto o titolo di viaggio utilizza normalmente?</th>
<th>Biglietto singolo</th>
<th>Biglietto singolo integrato</th>
<th>Non ho più utilizzato colBUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbonamento mensile</td>
<td>Abbonamento mensile integrato</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### RAGIONI DI UTILIZZO DEL SERVIZIO colBUS [SEGNARE QUELLE APPROPRIATE]

#### Servizio
- Promozione settimana gratuita
- Costi contenuti
- Vicinanza alla fermata
- Comodità degli orari di servizio
- Alla fermata / centro prenotazione
- Buona sicurezza alla fermata
- Personale disponibile
- Sul bus
- Stile di guida appropriato
- Possibilità di accesso ai disabili

#### Com’è venuta/o a sapere del servizio colBUS?

#### Livello di soddisfazione del servizio colBUS

### Come giudica i seguenti aspetti del servizio colBUS?

<table>
<thead>
<tr>
<th>Tempo d’attesa alla fermata di partenza</th>
<th>Eccellente</th>
<th>Buono</th>
<th>Sufficiente</th>
<th>Scarso</th>
<th>N/A</th>
</tr>
</thead>
</table>

### Page 56
<table>
<thead>
<tr>
<th>Question</th>
<th>Si</th>
<th>No</th>
<th>Uguale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distanza da percorrere per raggiungere la fermata di partenza</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idoneità all’utilizzo per le persone disabili</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orario di esercizio del servizio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequenza di disponibilità del servizio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affidabilità del servizio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luoghi serviti dal servizio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durata del viaggio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costo del biglietto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disponibilità dei titoli di viaggio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilità di effettuare interconnessioni con altri mezzi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilità di prenotazione</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilità di utilizzo del servizio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informazioni sul servizio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soddisfazione generale del servizio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilizzerebbe maggiormente il trasporto pubblico se ci fossero più servizi come colBUS?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Altri commenti sul servizio colBUS?**


P4 Citizens by bicycle (Preliminary,[ before and after only the chart on modal share])

Gentile ciclista,

Lo scopo del questionario che le proponiamo è quello di conoscere le abitudini, le modalità e la frequenza di utilizzo della bicicletta come mezzo di trasporto urbano. Una volta elaborati i risultati saranno pubblicati sul sito www.srmbologna.it.

Il questionario fa parte di un’azione pilota prevista dal progetto CIVITAS+ MIMOSA cofinanziato dalla Commissione europea, di cui è capofila il Comune di Bologna, in partenariato con SRM – Reti e mobilità, ATC, Regione Emilia-Romagna, a livello locale, e con le città di Danzica (Polonia), Utrecht (Olanda), Funchal (Portogallo) e Tallinn (Estonia) a livello internazionale.

Il questionario verrà ripetuto tra i partecipanti che volontariamente acconsentiranno, per verificare eventuali cambiamenti nelle abitudini di utilizzo della bici e valutare l’impatto delle misure previste dal progetto MIMOSA.

A tal proposito lei potrà scegliere di restare anonimo, oppure potrà compilare la parte anagrafica e decidere di partecipare alla seconda fase.

La partecipazione alla seconda fase può avvenire secondo due modalità:

1. **compila la scheda anagrafica ma sceglie di non partecipare all’azione pilota**; in tal caso le sarà solo richiesto di **compilare nuovamente lo stesso questionario** trascorso un determinato periodo di tempo;

2. **compila la scheda anagrafica e sceglie di partecipare all’azione pilota**; in tal caso le sarà richiesto un monitoraggio sugli spostamenti effettuati in bicicletta, tramite l’ausilio di apposite schede e/o dispositivi elettronici dedicati. Alla fine del monitoraggio le sarà somministrato nuovamente un questionario i cui dati saranno abbinati a quelli odierni. I partecipanti all’azione pilota concorreranno all’assegnazione finale di premi legati alla mobilità sostenibile.

In ogni caso i suoi dati personali non saranno divulgati o resi accessibili (v. clausola in scheda anagrafica) al di fuori degli scopi della presente indagine.

Per maggiori informazioni si prega di contattare:

<table>
<thead>
<tr>
<th>Dora Ramazzotti</th>
<th>tel. 051 0878251</th>
<th><a href="mailto:dora.ramazzotti@srmbologna.it">dora.ramazzotti@srmbologna.it</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Giuseppe Liguori</td>
<td>tel. 051 0878255</td>
<td><a href="mailto:giuseppe.liguori@srmbologna.it">giuseppe.liguori@srmbologna.it</a></td>
</tr>
</tbody>
</table>

**SRM – Reti e Mobilità**

Agenzia per la mobilità e il trasporto pubblico locale

Via Magenta, 16

40128 Bologna
Questionario sull’uso della bici

1. Indicare il genere
   a) donna
   b) uomo

2. Indicare la fascia di età
   a) meno di 15 anni
   b) 15-24 anni
   c) 25-34 anni
   d) 35-44 anni
   e) 45-64 anni
   f) più di 65 anni

3. Usa, anche sporadicamente, la bici come mezzo di trasporto?
   a) Si
   b) No

   Si, per i seguenti motivi (è possibile più di una risposta)
   a) non ho altro mezzo di trasporto
   b) per motivi di economicità
   c) è più veloce
   d) per evitare problemi di parcheggio
   e) per non inquinare
   f) è piacevole
   g) mancano mezzi pubblici vicini
   h) è un'occasione per fare attività fisica
   i) altro _____________________

   No e non le interessa perché (è possibile più di una risposta)
   a) è faticoso
   b) si prende freddo
   c) non è trendy
   d) è pericoloso
   e) non è comodo
   f) c’è troppo smog
   g) altro _____________________

   In quale stagione usa la bici per gli spostamenti urbani (è possibile più di una risposta)
   a) primavera
   b) estate
   d) autunno
   e) inverno

   Sarebbe disposto a incrementare l’utilizzo della bici se (è possibile più di una risposta)
   a) ci fossero più piste ciclabili
   b) potessi posteggiarla in un luogo sicuro
   c) il traffico fosse meno pericoloso
   d) ci fosse un efficiente servizio di bike sharing
   e) ci fossero maggiori possibilità di effettuare l’intermodalità (treno/bici – bus/bici, ecc.)
   f) altro _____________________

4. È consapevole dell’esistenza del progetto europeo CIVITAS MIMOSA?
   a) Sì
   b) No

5. Ritiene utile l’eventuale erogazione di incentivi dedicati alla mobilità urbana sostenibile?
   a) Sì
   b) No
## 1. Completi la seguente tabella inserendo i dati nei campi di interesse

<table>
<thead>
<tr>
<th>Tipologia di attività</th>
<th>Mezzo utilizzato (indicare con una X)</th>
<th>Frequenza (n° volte alla settimana)</th>
<th>Totale spostamento / mezzo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Andare al lavoro o a scuola/università</td>
<td>Auto</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Motorino</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bici</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>A piedi</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Altro</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td>2) Fare la spesa</td>
<td>Auto</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Motorino</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bici</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>A piedi</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Altro</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td>3) Accompagnare i figli a scuola o presso nonni/parenti</td>
<td>Auto</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Motorino</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bici</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>A piedi</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Altro</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td>4) Svolgere altre commissioni periodiche e regolari, tipo palestra, piscina, attività di volontariato, attività religiose, etc. (specificare quale)</td>
<td>Auto</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Motorino</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bici</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>A piedi</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Altro</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td>5) Altre attività sporadiche ed eventuali, tipo svago, shopping, teatro, cinema, ristorante, ecc. (specificare quale)</td>
<td>Auto</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Motorino</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Bici</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>A piedi</td>
<td>N°</td>
<td>Km.</td>
</tr>
<tr>
<td></td>
<td>Altro</td>
<td>N°</td>
<td>Km.</td>
</tr>
</tbody>
</table>

### Scheda anagrafica

Se non desidera restare anonimo, la preghiamo di selezionare la casella di interesse:

- [ ] Desidero compilare nuovamente il questionario tra qualche mese e quindi fornisco i miei dati anagrafici e do il consenso al loro trattamento per i fini statistici.

- [ ] Desidero partecipare all’azione pilota quindi fornisco i miei dati anagrafici e do il consenso al loro trattamento per i fini statistici. In tal modo parteciperò all’assegnazione finale di premi legati alla mobilità sostenibile.

---

**Cognome_______________________________ Nome_______________________________________**

**Tel./cell.______________________________ e-mail____________________________________**

Le informazioni fornite verranno trattate in forma riservata, a soli fini statistici e per l’assegnazione di eventuali benefit e premi, nel pieno rispetto del D.LGS. 196/2003 sulla privacy. In ogni momento potrà modificarle o annullarle rivolgendosi al responsabile dati Dora Ramazzotti tel. 051 0878251

---

**Grazie per la collaborazione**

SRM Reti e Mobilità