

*Measure title:* **Development of a Car Pooling**

*City:* **Potenza**

*Project:* **SMILE**

*Measure  
number:*

**9.3**

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## **A Introduction**

The definition of “Car pooling” is where two or more people who share the same journey origin and destination, decide to form a “crew” using a car owned by one of them to share the journey and parking costs. Even if the collective use of a car is a reality in many companies and organisations, it derives from spontaneous initiatives rather than organised initiatives, leading to modest results in terms of journey reductions. The realisation of an operative centre equipped with specific software which manages databases and creates “ideal crews”, can be a strong incentive for the diffusion of the intelligent use of the private car.

### **A1 Objectives**

The main advantages of car pooling are evident. By increasing the number of people per vehicle, the number of circulating and parked vehicles will decrease, together with the pollutant emissions in the atmosphere.

The measure objectives are:

- **Objective 1:** to increase the number of people travelling per vehicle;
- **Objective 2:** to decrease the number of circulating and parked vehicles; and
- **Objective 3:** to decrease the pollutant emissions in the atmosphere;

### **A2 Description**

The service provided only concerns in giving support in finding a matching partner. The effective implementation of the journey will in fact depend on arrangements made in private by the users. More precisely, the service provided has led to the creation of a database containing information about users who are potentially interested in car pooling, such as personal data, trip origin and destination, journey date and time, constraints and preferences (i.e. only colleagues, same sex or age). The database uses opportunity matching software and provides an “ideal crew”, whose members satisfy conditions of spatial and temporal proximity (similar O-D and time period) and constraints imposed by users. The information required to determine contacts with other potential members of the crew vary, depending on the scope of service provision and the communication channel used. During the project period the service is available via the internet on the website which was implemented within the project framework. The population targeted is 631 employees working in Regione Basilicata, who returned the questionnaires sent out during the first year of the project. Maximum discretion is guaranteed for personal data protection.

## **B Measure implementation**

### **B1 Innovative aspects**

#### **Innovative Aspects:**

- New organisational arrangements or relationships

The innovative aspects of the measure are:

- **New organisational arrangements or relationships, regionally** – Even if the collective use of a car is a reality in many companies and organisations, it comes from spontaneous and disorganised initiatives, with modest results in terms of journeys reductions. The realisation of an operative centre equipped with specific software which manages databases and creates “ideal crews”, can be a strong incentive for the diffusion of the intelligent use of the private car.

### **B2 Situation before CIVITAS**

Before the project, no formal car pooling service had been operating in Potenza, although some crews of colleagues were sharing trips on the basis of spontaneous and informal agreements.

### **B3 Actual implementation of the measure**

The measure was implemented in the following stages:

- **Stage 1: Data gathering** (from 04/2006- to 03/2007) – In two different stages, a survey aimed at collecting data about home-to-work trips and associated behaviour was carried out in five city companies.
- **Stage 2: Database creation and data analysis** (from 04/2007 – to 10/2007) – Data was entered into the database and then analysed.
- **Stage 3: Software procurement** (from 04/2008 to 08/2008) Regione Basilicata, one of the project partners invited five private companies to present of a formal procurement offer of a car pooling software (this is possible in Italy if the total amount allocated to public procurement is less than € 30.000,00 thus avoiding the long and complex procedure for a public call for tender). The most promising offer was presented by the company TPS from Perugia and the contract of procurement was signed.
- **Stage 4: Software and service activation; identification of incentives** (from 08/2008 - to 09 /2008) TPS provided the software and training services for the service management team. The car pooling service is thus managed by software on the Regione Basilicata LAN. The potential user must register and enter the following data: personal and car data; preferences on potential crew members; journey origin and destination; day preferences; (the user must indicate which days he/she prefers to be part of a crew,) departure and arrival times; role; (driver, passenger or both); and maximum temporal and spatial deviation. At the end of the registration process, the system returns the users login details via email. The user has the opportunity to find fellow colleagues for a trip. He/she can choose from the matches offered by the system and then send requests or offers to potential car sharers. The users receiving the invitation can reject or accept it. If the offer is accepted the formulation of a crew is considered successful. All members of the system can have access to all the useful information (members, telephone contacts, trips, etc).The driver will print a badge to get access to the parking area reserved for car poolers. Each user can fill a personal blacklist where he/she defines users to be excluded by the system when searching for car sharers. The service is available at [www.basilicatanet.it](http://www.basilicatanet.it). As an incentive for car poolers, dedicated parking lots have been identified.



Car pooling home page



Registration page

- **Stage 5: Informative campaign for users** (from 08/2008 - to 12/2008) Employees of Regione Basilicata benefited from an information campaign which continued until the end of the project. This was aimed at instructing employees about the opportunities and advantages of car pooling. The campaign has been supported by the publication and distribution of a dedicated brochure.



*Informative brochure*

## B4 Deviations from the original plan

The deviations from the original plan comprised of:

- **Additional scope for implementation** – Additional companies have asked to join the implementation as demonstration sites which has required extra before evaluation surveys
- **Delay due to changes in project consortium** – The partner originally responsible for this measure left the consortium and during 2007, Regione Basilicata became the measure leader and in charge of service implementation.
- **Delay due to the restriction of the experimentation.** Due to difficulties in involving more companies and the late start to the service, it was decided to limit the experimentation of the service in only one organisation (Regione Basilicata) within the SMILE timescale.

## B5 Inter-relationships with other measures

There is an element of joint evaluation with measure 11.6 (Mobility Centre) through the use of common evaluation surveys.

## C Evaluation – methodology and results

### C1 Measurement methodology

#### C1.1 Impacts and Indicators

Table of Indicators.

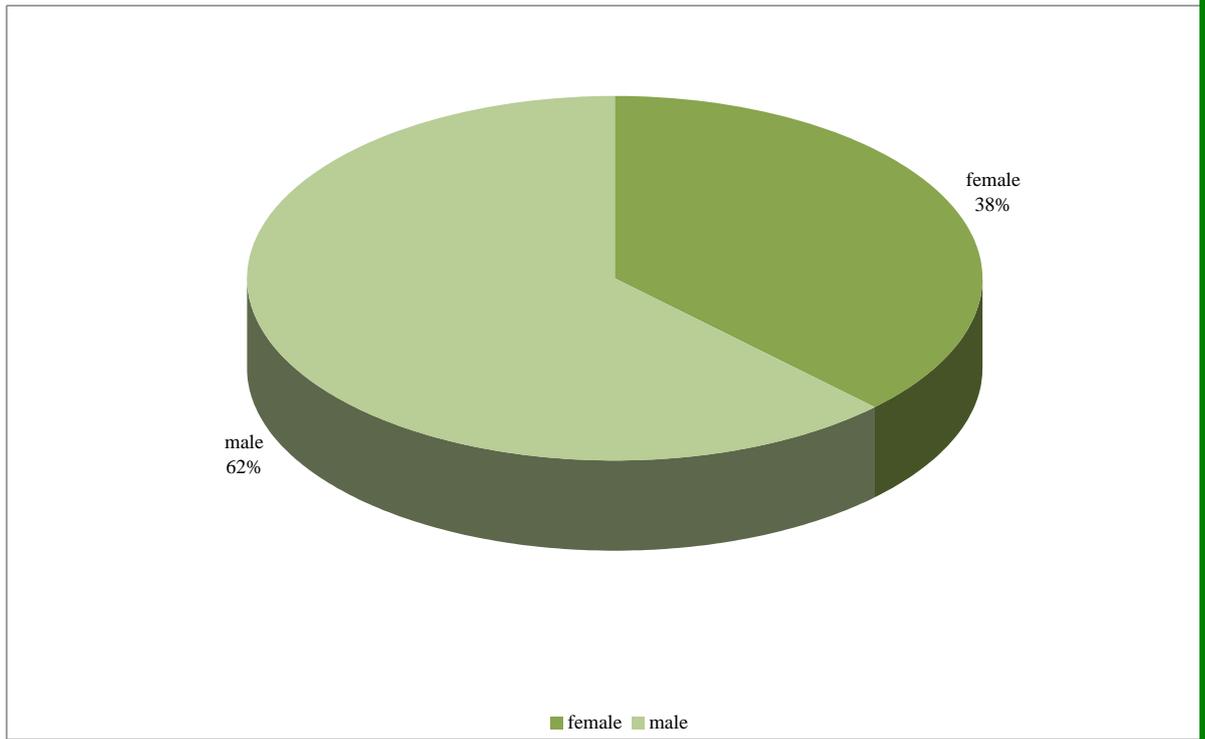
NO.	INDICATOR	DESCRIPTION	DATA /UNITS
13	Awareness level	number of people who visited the car pooling website	%
14	Acceptance level	number of people well-disposed towards car pooling	%,
28	Average occupancy	no. of persons per vehicle	Persons/vehicle

Detailed description of the indicator methodologies:

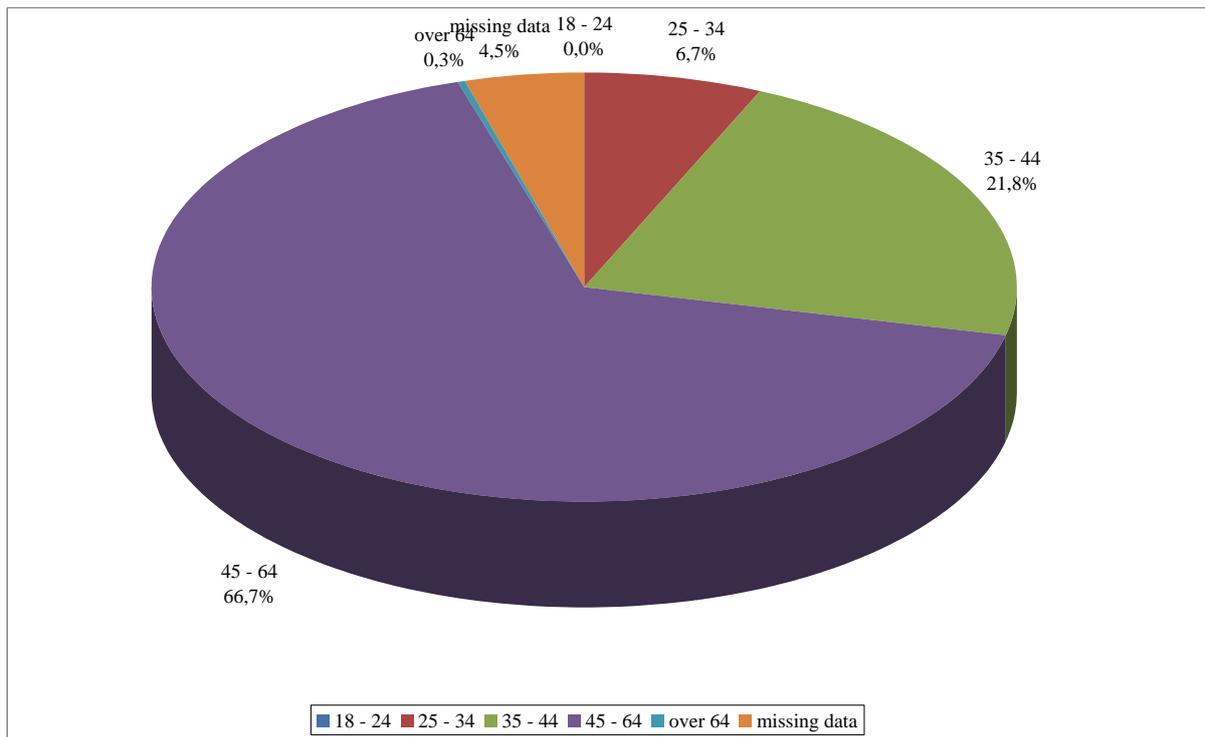
- **Indicator 13** (*Awareness level*) – The reduced period of operation (a few months) and the long period taken to implement the system obliged the team to calculate this indicator with reference to the number of people who visited the car pooling page on the Regione Basilicata website.
- **Indicator 14** (*Acceptance level*) – This was calculated on the basis of a survey carried out among Regione Basilicata employees (via the Anzio site). 631 questionnaires were distributed and 357 offered valuable responses. The necessary data for quantifying this indicator was extracted from these responses.
- **Indicator 28** (*Average occupancy*) The information on the number of people in a vehicle was obtained from the survey on car use (alone or with other people).

#### C1.2 Establishing a baseline

The baseline is well described by the survey carried out among Regione Basilicata employees. Their responses to the survey (via the Anzio site) were satisfactory. The total number of relevant questionnaires was 357. The sample of interviewees was composed mainly of men (62%), while the average age was between 45 and 64 years (66%) and 35 and 44 years (22 %).



Information about gender

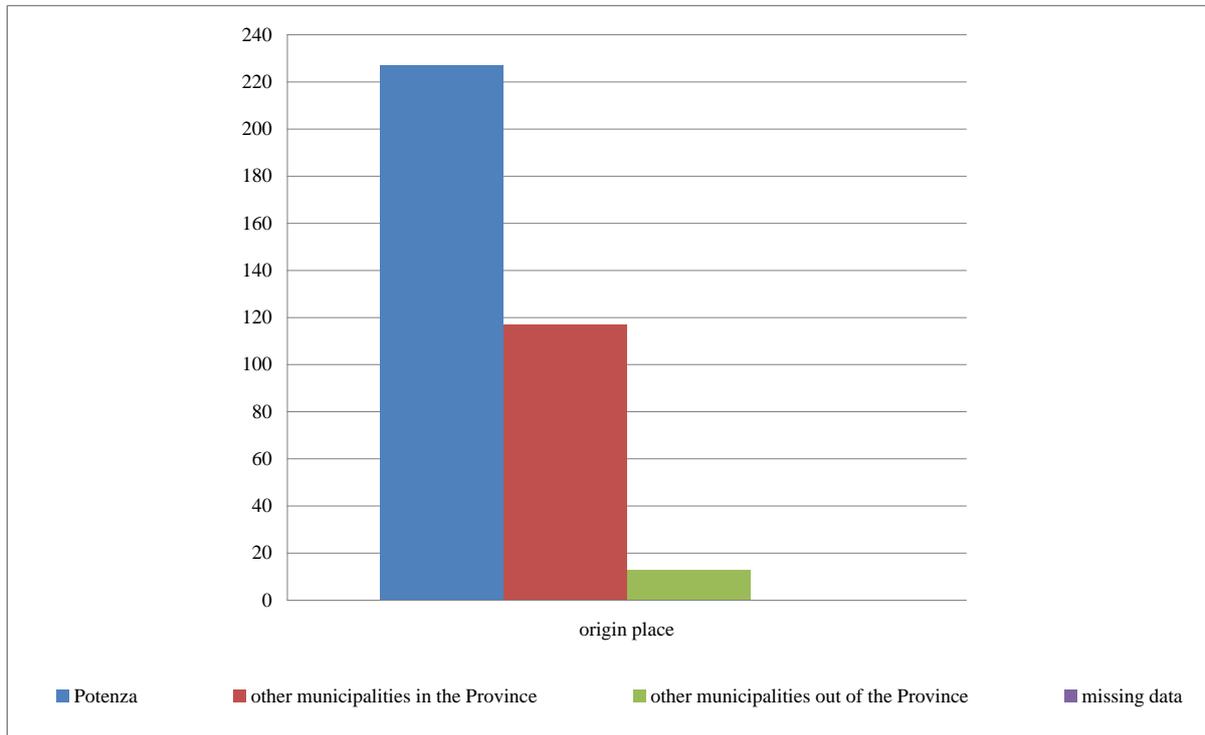


Information about age

64% of respondents live in Potenza. 33% come from different municipalities around the Province of Potenza while only 4% are from other Provinces municipalities. Among the 117 employees living in the city surroundings (town excluded), the majority come from the following municipalities:

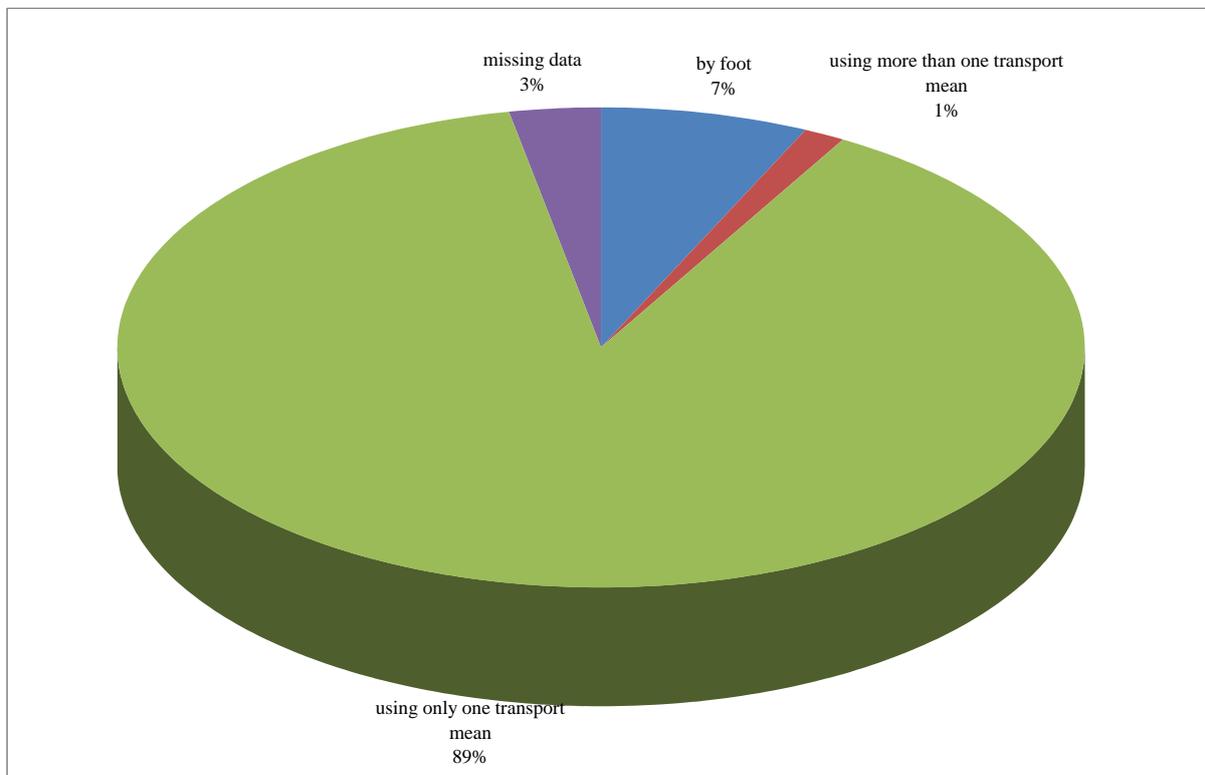
- Avigliano (20 people, 15%);
- Tito (11 people, 8%);
- Pignola (10 people, 8 %);

-Rionero in Vulture (6 people, 5%).



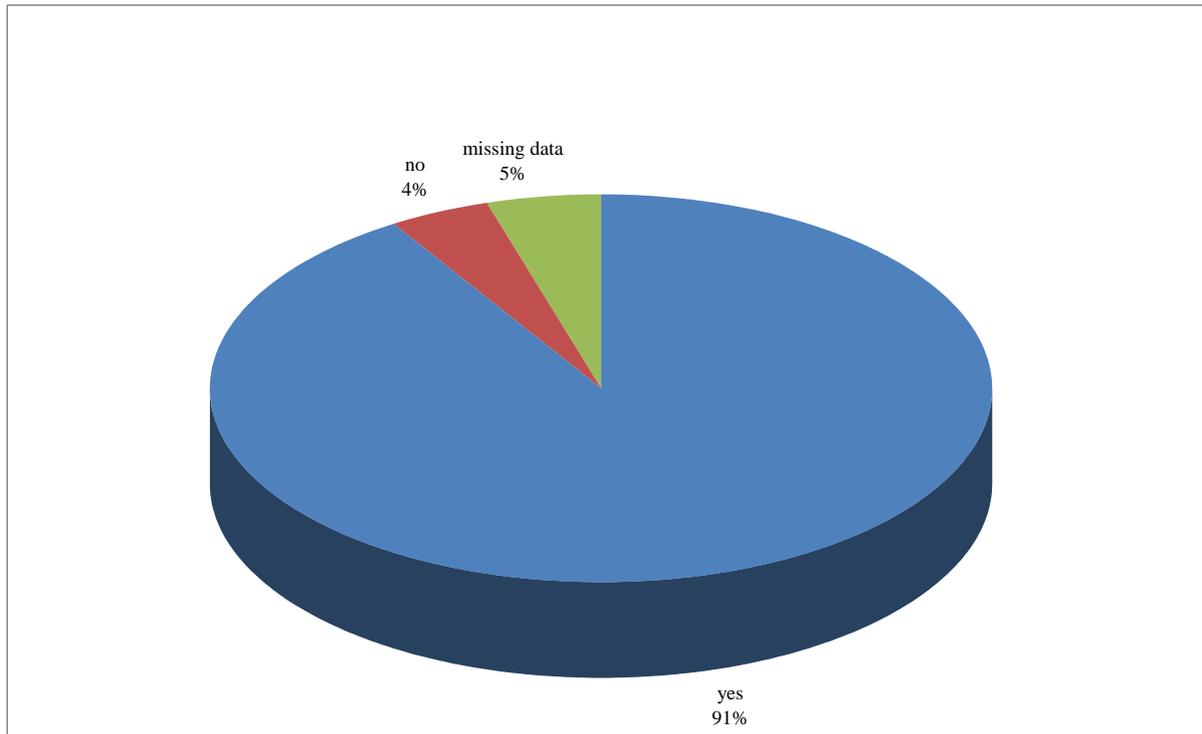
*Origin of trips*

89% of the interviewees go to work using only one mode of transport. 1% use more than one mode and 7% walk .The remaining 3% represents missing data.



*Number of transport means used*

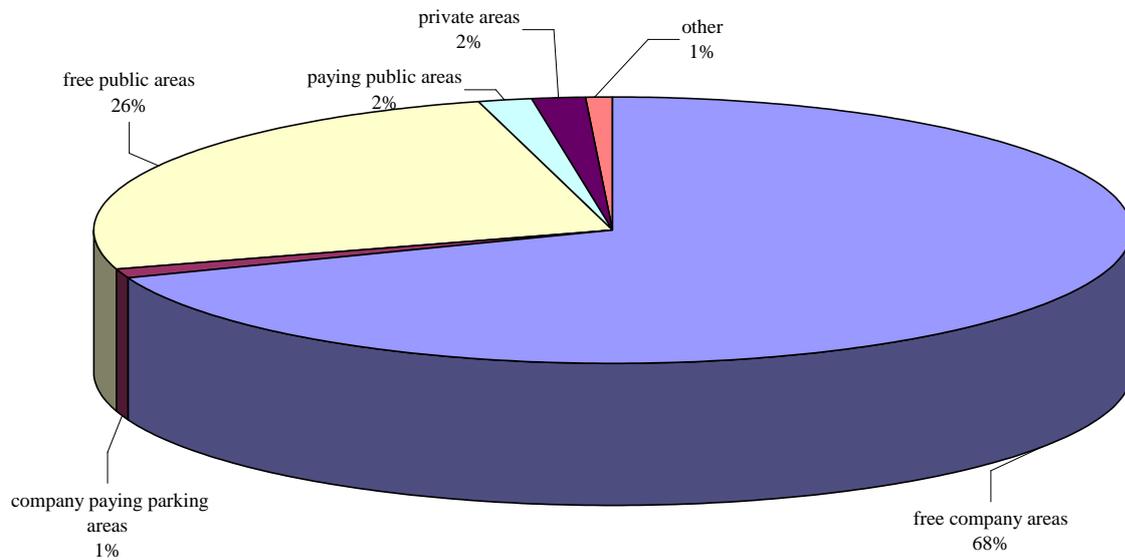
Only 4% of respondents who used a car exclusively or combined it with other modes of transport said there were problems related to parking in workplace premises.



*Parking in the premises of the workplace*

68% of interviewees who used a private car for travelling to work, parked in free company areas, 2% on paying spaces, 26% on free public areas, 1% used the company paying parking areas, 2% park on private spaces (parks, etc.) while nobody used paying garages. The availability of areas dedicated to car poolers' parking actually represented a problem faced by employees. They must change their habits since existing spaces satisfied all employees' needs. The Municipality of Potenza is considering a new organisation system for parking spaces in Regione Basilicata. This new situation will modify employees' habits and will stimulate a stronger use of the car pooling service or public transport.

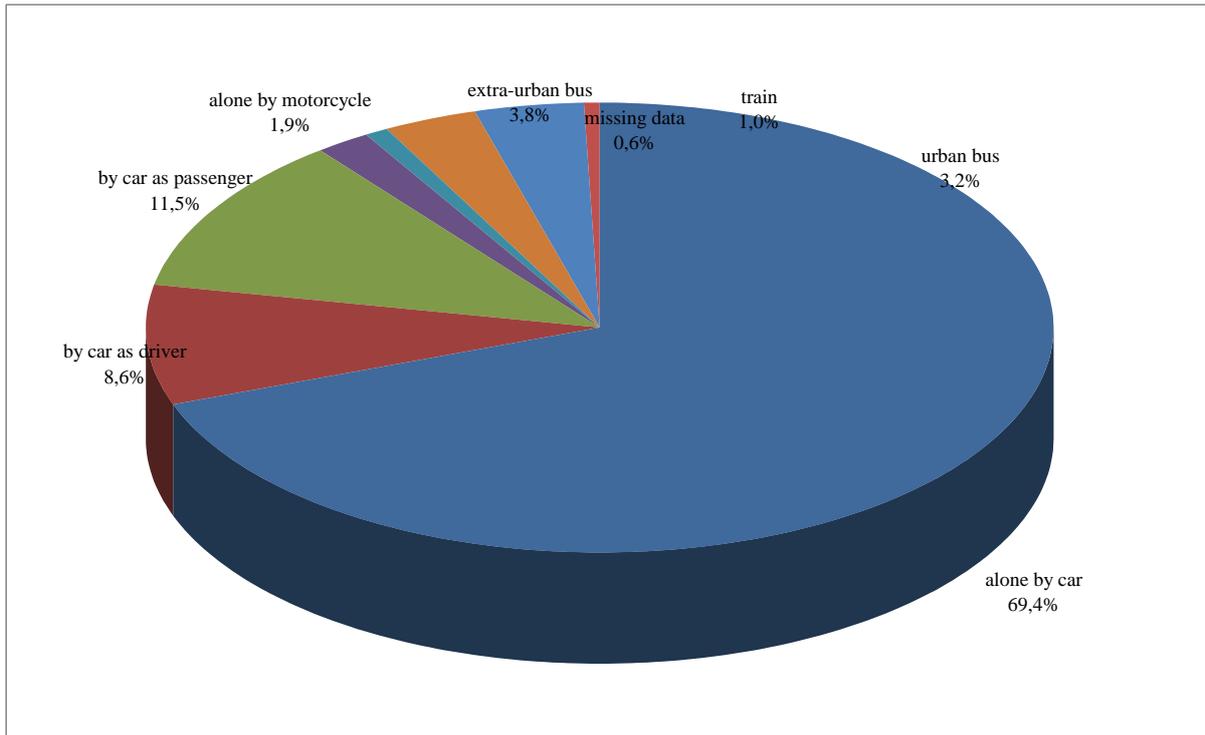
Parking place	No. of answers
free company areas	198
company paying parking areas	3
free public areas	73
paying public areas	5
paying garages	0
private areas (parks, etc.)	5
other	2



*Parking place*

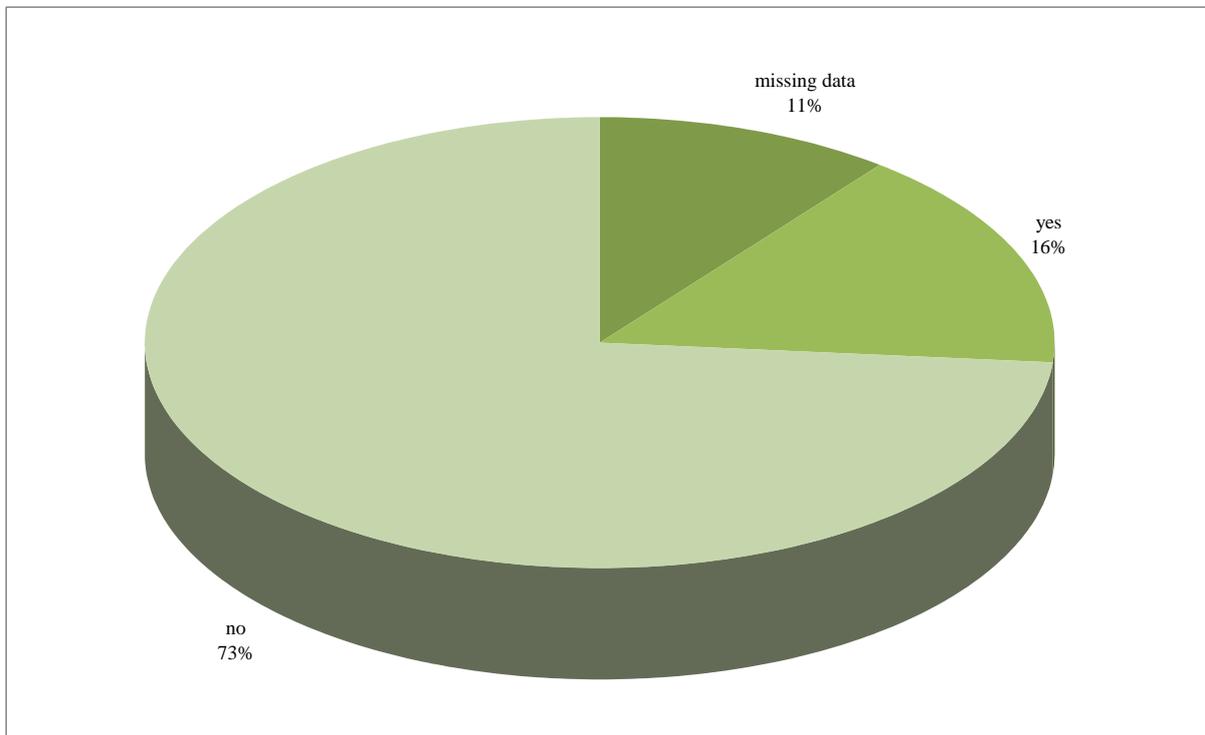
Among the interviewees who use only one mode of transport to go to work: 69% travel alone by car; 9% share a car with another person as a driver; 11% share a car with another person as a passenger; 3% use the urban bus; 4% use the extra-urban bus; 2% use a motorcycle and 1% travel by train. At present car pooling is used in very few cases.

<i>Most frequently used means</i>	no. of answers
alone by car	218
by car as a driver (2 people/vehicle)	27
by car as a passenger (2 people/vehicle)	36
alone by motorcycle	6
train	3
urban bus	10
Extra-urban bus	12
missing data	2
total	314

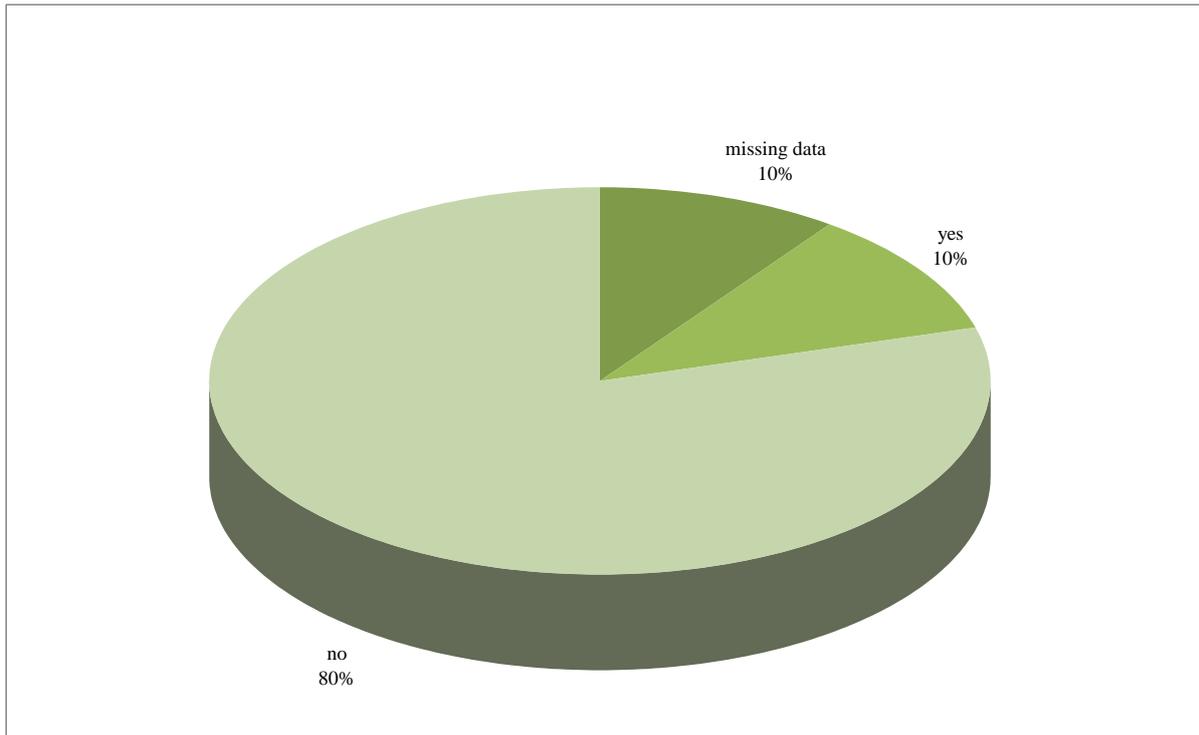


*Transport means used*

Travel to work for 16% of respondents and from work for 10% of respondents is affected by different factors (i.e. the need to accompany children to and from school or wife/husband to and from work).



*Route affected on the way to workplace*



*Route affected on the way back*

### **C1.3 Building the business-as-usual scenario**

Because the car pooling service was implemented late into the project, there was a short time period available between the baseline and final evaluation. Therefore it is not appropriate to consider a business as usual scenario. Because of what is currently happening (the new organisation system for parking spaces in Regione Basilicata), the failed experimentation of the car pooling service would oblige employees to arrange their own shared journeys with colleagues without using software. If reserved areas for car poolers weren't identified then people travelling together to the workplace wouldn't benefit from preferential parking.

## **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**

n.a.

### **C2.2 Energy**

n.a.

### **C2.3 Environment**

One of the objectives stated for car pooling is to decrease the air pollution caused by gaseous emissions. In the case of Potenza we are not able to evaluate this decrease at this stage of the project. As an example, we can report experience from Bergamo where 12 car pooling crews were composed as follows

- n. 3 by 4 members
- n. 4 by 3 members
- n. 5 by 2 members

These crews contributed to an annual reduction of 50 tonnes of CO<sub>2</sub>.

## C2.4 Transport

**Indicator 28:** The information on the number of people in a vehicle was obtained from the survey on car use (alone or with other people). Since the implementation of the service was brief and the use of parking areas for all employees was free, it is not possible to know the average number of travellers and its variations through time. The starting situation registered an average occupancy rate of 1.23 people per car. The results from Bergamo, (a town of similar size to Potenza) showed an increase in vehicle occupancy up to a value of 2.8 people per car for those participating in the car pooling service.

## C2.5 Society

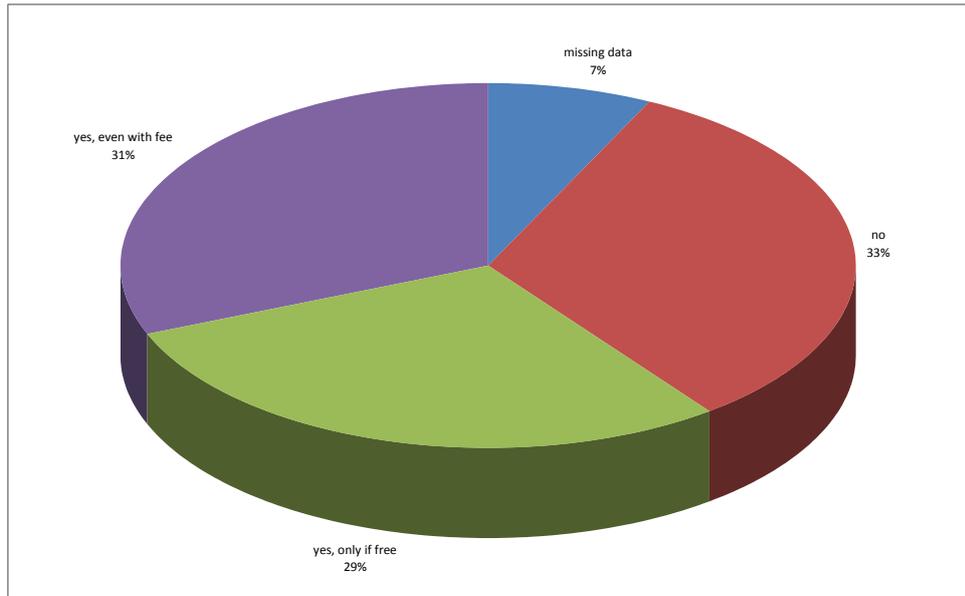
**Indicator 13:** the number of people registered on the car pooling website is 12. This number is low despite employees' availability registered in surveys of going to work sharing a car. This is due to the free availability of parking areas and the need to organise trips according to the whole family's travel needs (e.g. to take children to school) which obliges people to use their private car. The new organisation system of parking areas will give free access only to car pool users. This represents one of the most important contributions to the whole town. The target group of this measure is represented by regional authority employees, in particular those working at the main site located in Via Anzio. There are 631 employees, which is 62% of the total number of Regione employees who work in the town and other municipalities in the region.

**Indicator 14:** the number of people who would accept car pooling has been calculated on the basis of what was described in the section C1.1. From the answers given by the total sample, a description of the modification of habits related to home-to-work trips has been registered. The result is (not including invalid answers and missing data):

- 31% of people would accept to participate in the car pooling service and pay for it;
- 29% of people would accept to participate in the car pooling service only for free; and
- 33% of people would not accept to participate at the car pooling service.

General availability to participate to collective transport services and initiatives is shown below:

<i>question: would you accept to participate at car pooling?</i>	no.	of
	answers	
missing data	26	
no	116	
yes, only for free	104	
yes, even if paying	111	



*Availability in participating to car pooling*

### C3 Achievement of quantifiable targets

No.	Target	Rating
1	Awareness level	★
2	Acceptance level	★
3	Average occupancy	NA

**NA = Not Assessed**    **0 = Not achieved**    **★ = Substantially achieved (> 50%)**  
**★★ = Achieved in full**                      **★★★ = Exceeded**

### C4 Up-scaling of results

The companies which implemented the car pooling service in the medium run are the ones that appointed their Mobility Manager or that participated in SMILE training activities (City of Potenza, the Province of Potenza, the local Hospital and University and INPS- National Institute for Social Welfare). It must be taken into strong consideration that this will be possible due to the possibility of using the same software purchased by Regione Basilicata in all the companies requiring such a service. In this case, the public administrations that enhanced their knowledge in the service during the implementation period (Regione Basilicata and City of Potenza) will be available to support them.

### C5 Appraisal of evaluation approach

The overall delays in the implementation compromised the whole evaluation process in regards to:

- getting useful data to the standards required for evaluation; and
- introducing innovative elements in the assessment of an initiative already registered in the past years due to spontaneous agreements.

From the experience in Bergamo we learnt that a period of 1-2 years is necessary to fully evaluate the effectiveness of car pooling because it can be a long process establishing the system in the community. It will allow people to test the system and build confidence in it to make it part of their normal mobility pattern.

Under the circumstances of delayed implementation, this type of desk-based evaluation is the best that could be achieved and provides the basis for ongoing monitoring as progress is made with the measure in the future.

## **C6 Summary of evaluation results**

The key results are as follows:

- **Key result 1** – useful data in understanding the **acceptance level**
  - 31% of people would accept to participate in the car pooling service and pay for it
  - 29% of people would accept to participate in the car pooling service only for free
  - 33% of people would not accept to participate at the car pooling service.
- **Key result 2** – useful data in understanding **baseline car use**
  - 69% travel alone by car.
  - 9 % travel by car as a driver (2 people/vehicle).
  - 11% travel by car as a passenger (2 people/vehicle).

## **D Lessons learned**

### **D1 Barriers and drivers**

#### **D1.1 Barriers**

- **Barrier 1** – There were difficulties in organising a Mobility Managers network. At the moment the risk has been avoided since the service was launched in one company and supervised by one Mobility Manager. The risk might be high in the future when more companies are involved and more Mobility Managers is needed. Since the actual performance levels of the Mobility Managers registered in the past and present initiatives are high, it is expected that the extension of actions could be implemented without any difficulties.
- **Barrier 2** – Delay due to changes in project consortium and delays of implementation, the measure was affected by the quality of data and the evaluation process.
- **Barrier 3** – a low number of registered users on the car pooling website.
- **Barrier 4** – there is a discrepancy between the objectives and achievements of quantifiable targets. Objective 3, to reduce pollution, does not appear to be quantified and measured.

#### **D1.2 Drivers**

- **Driver 1** – The increasing sensitivity of public administrations (the Regional Authority in this case) towards the usefulness of such a service and other soft mobility management actions, overcame the delays affecting the implementation of this measure since the very beginning of the project.
- **Driver 2** – Negative conditions suffered by employees travelling each day by car motivated people to choose alternative modes of transportation. Potenza currently has one of the worst situations in Italy according to national statistics.
- **Driver 3** – the functionality of the database to find suitable matches for car sharing journeys, the ease of using the software and the registration process could attract more people to use this service.

## **D2 Participation of stakeholders**

- **Stakeholder 1** – The most relevant stakeholder involved in the measure is represented by the target of the service. Their opinions have been registered through the distribution of a questionnaire during the survey stage aimed at identifying needs and suggestions.
- **Stakeholder 2** – Political actors and public administration officers showed good sensitivity towards the usefulness of the service as an important solution of traffic related problems in the city.

## **D3 Recommendations**

**Recommendation 1** - Such a service must be activated with surveys on potential users' needs. The evaluation must be performed over a very long time period.

**Recommendation 2** – Importance of dissemination and sensitising activities to potential users

**Recommendation 3** – The system must be considered not as a solution to mobility problems of a company, but must be seen only as a part of a more complex system of initiatives and activities.

**Recommendation 4** – External stakeholders must be involved in the definition of car poolers incentives, i.e. the local public transport operator can help in increasing and improving public transport services

**Recommendation 5** – Marketing and promotion campaigns to raise awareness amongst employees of new companies is important.

**Recommendation 6** – It is worth considering involving the general public in Potenza. This could be achieved by co-ordinated marketing and promotion of the benefits of car sharing.

**Recommendation 7** – To gauge the success of a measure its objectives need to be tangible, achievable and measurable. It is recommended that the objectives are properly researched prior the start of the project to meet the project requirements. This will also enable the evaluation process to correctly measure their achievements.

## **D4 Future activities relating to the measure**

At the beginning, the target group consisted of employees of one of the firms involved in the SMILE project. The target group should be widened to include employees of firms to which mobility management policies defined by the Italian Ronchi Decree can be applied to.

In the long run the important benefits of the service together with the reservation of dedicated parking lots and the consequent decrease of transport costs are: reduction of accident risk and traffic stress and more opportunities for socialising amongst colleagues. In the long run, the service will help to ensure regular arrival times to the work place and enable the company to allocate parking areas to different functions. It will also improve the image of the company. In the whole town it will: help to reduce air pollution; decrease traffic levels; improve road security; decrease travel times; improve local public transport efficiency; and decrease problems related to parking.