

Passenger mobility in the Turin metropolitan area

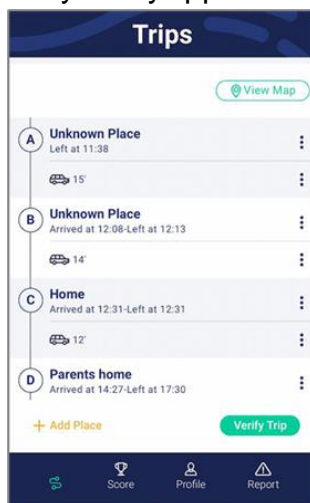
The H2020 HARMONY Project

The H2020 funded project HARMONY aims to develop a new generation of **harmonised spatial and multimodal transport planning tools**, to represent new forms of mobility for freight and people, enabling metropolitan areas authorities to lead the transition to a low carbon new mobility era in a sustainable manner. The main goal of the HARMONY project is to develop a **Model Suite (MS)** as a multi-scale, software-agnostic, integrated activity-based model system, which enables end-users to link independent models and analyse a portfolio of regional and urban interventions for both passenger and freight mobility.

A new approach with the MobyApp

Within the HARMONY project, a new approach for travel demand data collection has been used in Turin: a free smartphone application, **MobyApp**, was developed for Android and iOS.

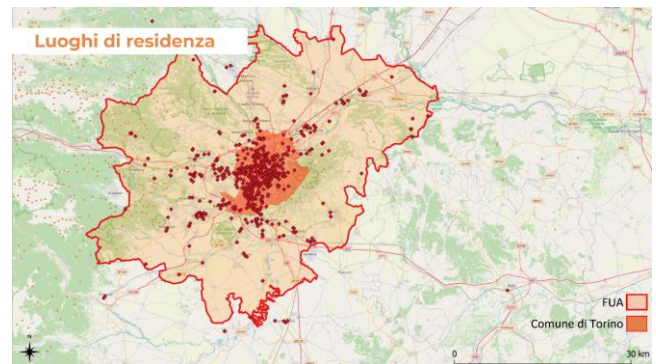
Downloading the application, the survey participants need only to start the tracking of their trips and activities, and the whole travel diary is tracked by the application. Start/end travel time, path, and mode choice are automatically recognized by MobyApp.



This way, the travel diary is composed by real data, collected through the smartphone's GPS and accelerometer. The user supervision is however needed to validate the collected data.

Moreover, a few complementary questionnaires are included in the application, to collect additional information on transport behaviours. Personal attitudes towards changes in the travel patterns, or towards autonomous vehicles, are examples of useful information collected.

In **Turin**, the travel survey was performed in February 2022. The study area where the users were selected is the **Functional Urban Area** of Turin, including **88 municipalities**.



With the support of a survey company – **IPSOS** – for the recruitment of the participants, a representative panel of citizens was selected and involved. Namely, **584 users** aged 18 to 65 years old downloaded the application, tracked their trips during a period from 4 to 7 days, and filled the stated preferences questionnaires. To complement the data collected with the predefined sample of individuals, an additional survey on a voluntary basis was performed in Turin in March 2022: about 113 users downloaded the App, and 61 have been tracking at least 1 day.

Passenger mobility in the Turin metropolitan area


Online questionnaires
(declared data)

Data collection
with Moby App



Trips tracking with
GPS

Mobility Habits

 3.1 Trips/day per person

80% With 2 or more cars in the household

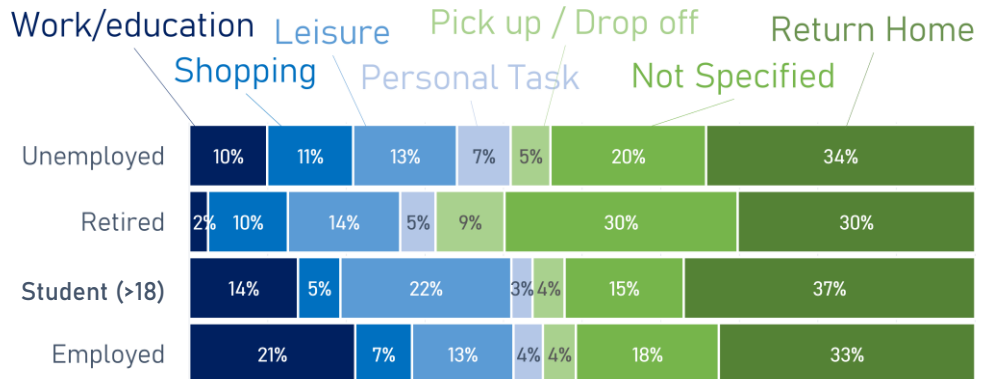
50% Using the car at least once a day



22% Have Public Transport pass

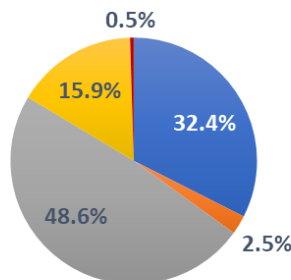
23% Don't have a bike in the household

Trip purposes



Modal Share (Functional Urban Area)

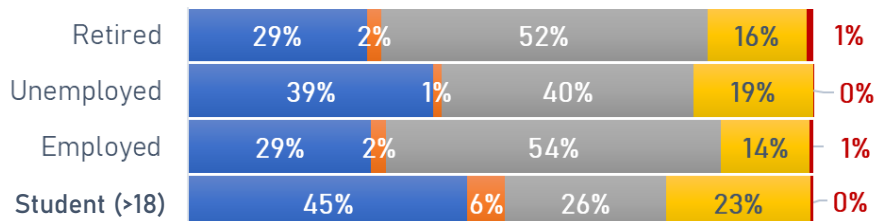
- Walk 
- Bike 
- Public Transport 
- Car 
- Scooter / Motorcycle 



Almost half of trips are made **by car**

Bikes are used for a small share of trips → seasonal use (data collected in February, average flows on bike paths about 30% less than in May)

Public Transportation (bus, metro, tram, train) accounts for 16% of mobility



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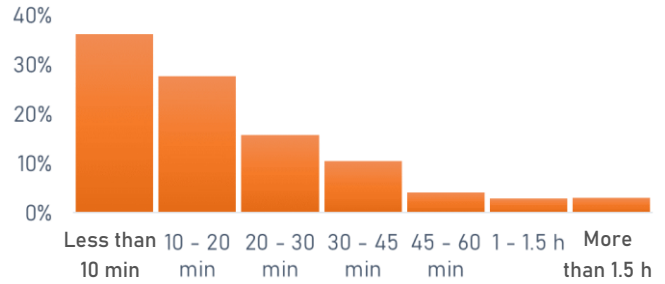
Trip Duration

23,5
Minutes/trip

35% Of trips shorter than 10 minutes

50% Of trips last less than 15 minutes

Distribution of trips by travelled time



A quarter (24%) of car trips are very **short** (less than 10 minutes)



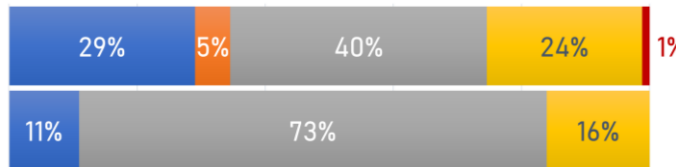
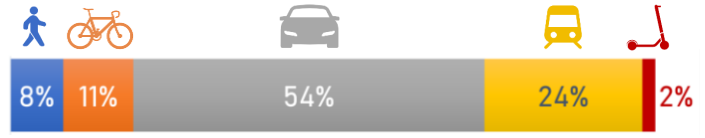
Cars use for trips where **active modes** can be very competitive



Commuting Trips

- Walk
- Bike
- Public Transport
- Car
- Scooter / Motorcycle

Stated modal share for commuting trips in the FUA

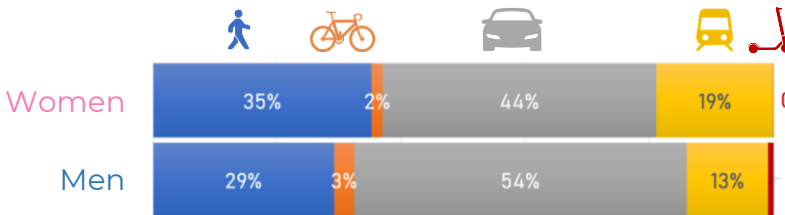


Turin municipality

Rest of Metropolitan Area

Within the **Turin municipality**, cars are used less, in favour of active modes (bikes and on foot), Scooter / Motorcycle and Public Transport.

Mobility by gender (Functional Urban Area)

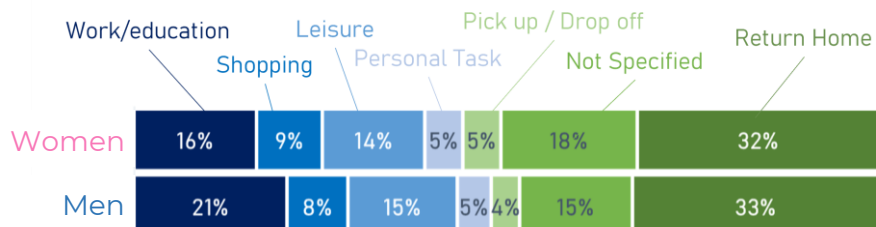


Women make **more trips** on average, moving more **on foot** and by **Public Transport**.

Modal Share (all purposes)

Trip purposes

3.0 Men
3.3 Women
Trips





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