UniTo-GO:

All round mobility initiative for a smarter, cleaner university

Andrea Scagni
Head of SMWG - Sustainable Mobility Working Group
Green Office - University of Turin
UniTo - the University of Turin

- A large, mega-atheneum with a sparse structure, about 120 branches in different locations around the city (and the suburbs)

- Its daily activities induce a significant part of the Turin metropolitan area mobility

- With a community of around 70,000, distances covered every single day are way above 100,000 kms.
UniToGo - Green office

- A dedicated team that works with a combined research + action approach on all topics concerning the sustainability of the university day-to-day activities

- Created at the end of 2016, includes people from faculty, students, staff and is granted specific funding

- It is an active member of the RUS (Rete Università Sostenibili) national network

- Organised in 5 working groups:

  - Energy
  - Green Public Procurement
  - Mobility
  - Food
  - Waste

Each group has an academic, a technical, a researcher representative and several students involved for thesis projects.
UniToGO - Sustainable mobility working group

- The main goal is to build cultural, normative and structural conditions that can motivate the members of the UniTo community to change their mobility choices towards sustainability.

The Modal share of home-to-work and home-to-school should increase for:

- active mobility (walking & cycling)
- Regional and local public transport (road or rail)
- Standard or new forms of sharing mobility
The 4 STEPS of the approach to reach this goal:

- Acquisition of data and information on the present status of mobility choices and on the accessibility of all university buildings and locations;
- A systematic and well organized program of awareness raising events and cultural initiatives on sustainability in general and on mobility issues in particular;
- Definition of incentive policies with economic bonuses and tariffs, regulation and rationalization of parking spaces;
- Analysis and evaluation of innovative proposals on sustainable mobility infrastructure and their synergy with public transport services relevant to University locations.
The Network of the working group

Local partners

- Piedmont Region
- Agenzia per la Mobilità
- 5T (data analysis)
- Turin Metropolitan Authority
- City of Torino
- GTT (public transport)
- To-Bike (bike sharing)
- Fiab (grassroots advocacy)

Inside Unito

- University governance
- Administration and Sustainability branch
- Press office
- Sustainability Report
- Personnel Training Branch
- Part-time students
- GreenTo (grassroots advocacy)
MobilitaUniTo: the mother of all surveys

- On-line questionnaire, both PC and mobile friendly
- 17,500 responses
- 2 units of dedicated staff

A huge effort to gather knowledge

- UNITO Newsletter
- Social media of all kinds
- Local promotion events
- Vocational training courses
- Prize draw for students
- Specific letters from rector magnificus
MobilitaUniTo *how you travel matters to us*

**A deep insight on behaviour and choices**

- Detailed, possibly multimodal *home2university* journey with info on each stretch mode and time
- Separately reported by season and weather
- Bike (and other) sharing specific section
- Subjective perception of critical issues regarding cycling and public transport (and the combination)
- Mobility assets and options actually available to the individual
- Travelling between university locations

- Online questionnaire working on PCs, tablets, mobile phones, etc.
- Data collected with the survey were *linked* to University administrative databases to avoid re-collection of already available data
## Data quality

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<th>Number</th>
<th>Percentage</th>
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<td><strong>Duplicated answers</strong></td>
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## Who answered?

- **Students**: 82.9%
- **Faculty**: 7.3%
- **Technical/Admin**: 9.7%
- **Male**: 33.6%
- **Female**: 66.4%

### Locations

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<td>Biotecnologie</td>
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<td>Aule dei corsi di studio dei dipartimenti centrali</td>
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<td>Ex Caserma Podgora</td>
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<td>Palazzo L. Venturi</td>
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<td>Centro innovazione via Quarello</td>
<td>61</td>
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<tr>
<td>DIST e orto botanico</td>
<td>58</td>
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Mobility and *multimodality*

- **Mobility in an urban and diverse environment**
  - Multiple travel options, for the full journey or parts of it
  - Different costs and advantages for each section of the journey

- **Uni- and multi-modal mobility**
  - On a given journey, the maximum sustainability can often imply multimodality
  - Questions like “How many people go to university by bike? How many by car?” are not

- **Multimodality and sustainability are often closely related**
  - Multimodality can imply potential inconveniences for the individual (connections etc.)
  - Creating the best conditions for multimodality is thus a key goal

- **The analysis of mobility choices becomes more complex**
  - “Prevailing” modality? How to define it? Should we study the detailed sequence?
Main travelling modality by season of the year

- **Bus**: % Winter > % Summer, + 248%
- **Train/Suburban rail**: % Winter > % Summer, + 88%
- **Car as driver**: % Summer > % Winter
- **On foot**: % Winter > % Summer
- **Tram/Trolley bus**: % Winter > % Summer
- **Metro/light metro**: % Summer > % Winter
- **Bicycle**: % Summer > % Winter, + 248%
- **Car as passenger**: % Winter > % Summer
- **Motorcycle/scooter**: % Winter > % Summer
- **Bike sharing**: % Summer > % Winter, + 248%
- **Ride sharing/Carpooling**: % Winter > % Summer

*Main* as declared by respondents: that covering the longest distance
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Main travelling modality by role

- Car as driver
- Bus
- Train/Suburban rail
- On foot
- Tram/Trolley bus
- Metro/Light metro
- Bicycle
- Car as passenger
- Motorcycle/scooter
- Bike sharing
- Taxi

% Winter
% Summer

Students

Technical-admin

Faculty
In bici al lavoro: come e perché

Ciclisti a confronto sulla scelta di mobilità più importante

- physical **distance** of workplace (possibile differences between car and bike distances)
- **time** approximately needed to cover the distance with each means of transport (in busy/nonbusy conditions)
- quality of the **bicycle route** in term of safety, pollution and agreeable environment
- **uphill sections** on the bicycle route
- existence, cost and quality (speed, frequency of passages, n. of lines needed) of **public transport** on your specific route
- the **parking** facilities for both cars and bicycles at or near your workplace
- presence of **bike sharing** with stations near to your home and/or workplace
- the need to carry some **load** to the workplace

**Benvenuto!**

Il questionario che stai per compilare è importante:
- aiuta FIAB a comprendere meglio le scelte e i problemi di chi va in bici
- aiuta FIAB a progettare e realizzare opzioni per i ciclisti

Leggi le domande e per le risposte devi contare sul tuo giudizio.

**Discrete choice model**

- **street and cycle-path factors**
- **parking factors**
- existence and quality of alternatives
- Personal traits and characteristics

**Probability** that you...

- **DO** cycle to work
- **DO NOT** cycle to work
BIKE TO WORK: what affects the choice to cycle to work (and how)?

\[
\log \frac{Pr(\text{bicycle is used})}{Pr(\text{bicycle is not used})} = a + b_1 X_1 + b_2 X_2 + \ldots + b_k X_k
\]

Any factor that affects this probability

**Route environment**
- Relevant only if type of route not considered

**Route length**
- 5 km. more imply a 1/3 decrease of odds of cycling

**Bike sharing**
- Relevant (+11% probability). Main factor: capillarity

**Type of Route**
- Full cyclepath protected route: odds x 2.4
- Full quiet road: odds x 1.7

**Peak hours**
- Transfer during peak hours rather than off-peak: odds x 1.5

**No cycle path at night!**
- Night+cyclepath: odds x 0.05!

**Presence / frequency of public transport**
- Increase odds!

**Parking**
- at work: cost for car
- At home: hard to find space for car

- Cycle lanes not significant

Estimates of the factors effects

- Consider only single modal choices
- Consider the importance of the bicycle stretch in multi-mode
- Distinguish good and bad weather choices
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General satisfaction regarding the home-to-university transfer

By main modality used

Assign a numerical level from 1 up to 10
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Average distance covered by main travel modality
General satisfaction regarding home-to-university transfers

By total travel time

Assign a numerical level from 1 up to 10
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Complete journeys in detail - WINTER

## Multimodality count

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<th>N. cases</th>
<th>%</th>
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<td>2</td>
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<td>3</td>
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<th>distance in KM.</th>
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## MobilitaUniTo

Complete journeys in detail - SUMMER

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### Graph:
- **Students**
- **Faculty**
- **Technical/admin**

Number of stretches vs. Percentage of journeys.
Focusing on **sustainability** of modal choices

1. **Fully sustainable**
   All stretches use only *Active mobility, Public Transport, Sharing* in any combination

2. **Partially sustainable**
   Journeys made using *private motorized vehicles*, but only if combined with other modes

3. **Unsustainable**
   Journeys made *exclusively* with private motorized vehicles
Focusing on **bicycle use**

1. *A bicycle is used to reach university*
   Indicator of bicycle usage, own or shared, uni- or multi-modal

2. *All travel combination that do not include a bicycle stretch*
   Not necessarily unsustainable
Focusing on giving up car travel even though a car is actually available to the individual

- Percentage of respondents who do not travel by car among those declaring that a car is always available to them

- This is an indicator of “actual virtuosity”, it spots people who do not use a car, not even in multimodal, but declare they have it available for the journey to university
Sustainability of the home-university journey - Summer

- **Students**
  - Unsustainable: 10%
  - Partially sustainable: 9%
  - Fully sustainable: 81%

- **Faculty**
  - Unsustainable: 38%
  - Partially sustainable: 24%
  - Fully sustainable: 55%

- **Technical/admin**
  - Unsustainable: 24%
  - Partially sustainable: 15%
  - Fully sustainable: 61%
Fully sustainable home-university journeys by university branch location
Bicycle usage in the home-university transfer - Summer

<table>
<thead>
<tr>
<th>Students</th>
<th>Faculty</th>
<th>Technical/admin</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6%</td>
<td>10.9%</td>
<td>6.3%</td>
</tr>
</tbody>
</table>
Bicycle usage on the home-university transfer by university branch location - Summer

- Rettorato: 16%
- Sc. della Natura: 12%
- Scuola di Medicina: 12%
- Campus Luigi Einaudi: 12%
- Ex Caserma Podgora: 12%
- Palazzo Nuovo: 8%
- Campus di Grugliasco: 8%
- Polo di Economia (C.so Unione Sovietica): 4%
- Scuola di Medicina (Orbassano): 0%
I do not travel by car to university, even though I have one available.
Inventory: the existing bicycle parking lots

- Quantity
- Efficient use of space
- Easy to access and close to the site

The Rectorate: obsolete, inefficient

The new Social Sciences Campus: Good, but.. still not enough
Perspective: safer bicycle parking lots

The new controlled access bicycle parking at the Social Science Campus
**Bike Sharing:** *a part of the students’ package*

*A successful service, with a bright development outlook*

- Special cheap fares for all students offered on enrolment
- Special *University-only* stalls in strategic locations
- In-depth data analysis on how the service is used by the academic community and citizens at large
Infrastructure: fast, easy & safe cycling routes to the academia

Working with public administrations to help plan a better network of cycle routes between linking university sites and the main transport hubs

- Many students attend/faculty teach courses in different university sites
- Turin has a large population of students from the whole region - linkage with the 4 main rail stations is crucial
- The UniTo-GO SMWG is cooperating with public administrations, Advocacy groups like FIAB, other institutions to help define the best routes and the right mix of protected lanes, signposting, traffic moderation to ensure smooth, safe cycling
Infrastructure: an example
Bike2Work project: strong partner and competitor

Co-sponsored with
- Piedmont region
- Turin metropolitan area
- Turin city council
Events and workshops: spread the news on mobility
WEB UNITO: help people make the best mobility choices

- Lots of information regarding active mobility and public transport options
- Clearly showing the University commitment to limit the environmental impact of its induced mobility
Video production: exploiting the smartest media

A news video for the launch of the new Smart mobility UNITO WebSite, shot in the historical Rectorate building courtyard.

A national television news video for the bike2work campaign, shot directly on Campus.

A video showing students starting their journey with ToBike sharing scheme.
Thank you for the attention!
Subjective perceptions and assessments

Satisfaction, critical issues, possible improvements

1. **Is home-university mobility a problem?**
   Self-evaluation of the travel experience, difficulties magnitude, “all is well” responses

2. **What are the change in perceptions depending of travel modes?**
   Which travel modes cause the most distress

3. **What should be urgently improved?**
   Specific suggestions for each travel mode
General issues

concerning the home-university journey

- Traffic congestion
- Public transport is crowded
- Public transport suffers from delays
- Public transport is sparse
- It is difficult to find space to park
- Travelling is expensive
- Lack of safe cycle routes
- Parking is expensive
- Journey is not comfortable
- Lack of space for bicycles
- Unsafe bicycle racks
- Journey is dangerous
- Physical Barriers

% of respondents reporting the issue

0% 10% 20% 30% 40% 50% 60% 70%
General issues

Perceptions differ strongly by travel mode

- Traffic congestion
- Public transport is crowded
- Public transport suffers from delays
- Public transport is sparse
- It is difficult to find parking space
- Journey is expensive
- Lack of safe bicycle routes
- Parking is expensive
- Journey is not comfortable
- Lack of space for bicycles
- Bicycle racks are unsafe
- Journey is dangerous
- Physical barriers

% reporting the issue

I do not use a bicycle
I use a bicycle
General issues

Perceptions differ strongly by travel mode - 2

- Traffic congestion
- Public transport is crowded
- Public transfer suffers from delays
- Public transport is sparse
- It is difficult to find space to park
- Journey is expensive
- Lack of safe cycling routes
- Parking is too expensive
- Journey is uncomfortable
- Lack of space for bicycles
- Bicycle racks are unsafe
- Journey is dangerous
- Physical barriers

% reporting the issue

- Car
- Public transport
Why I use a car to reach university

- Higher freedom of movement
- Journey is quicker
- There is no public transport direct link
- Journey is comfortable
- Public transport is too sparse
- Public transport has delays and cancellations
- Public transport is crowded/unclean
- Public transport too far from home
- Journey is safer
- Cheaper than public transport
- Need to carry other people around
- Cycling routes are lacking or unsafe
- Public transport has physical barriers

Average of 1 to 5 marks
Why I use public transport to reach university

- Journey is cheaper
- Parking around university lacking or expensive
- Public transport fares are discounted
- I do not have full access to a car
- I can do other things while travelling
- Journey is safer
- Journey is quicker
- Cycling routes are lacking or unsafe
- Higher freedom of movement
- Journey comfort

Average of 1 to 5 marks
Why I cycle to university

- Higher freedom of movement
- I can stay fit
- Journey is cheaper
- Journey is quicker
- Car parking around university lacking/expensive
- Journey is comfortable
- Public transport is crowded/unclean
- Public transport is sparse
- Public transport suffers from delays
- There is no direct public transport link
- Limited access to car/motorcycle
- Journey is safer
- Public transport is far from home

Average of 1 to 5 marks
I cycle to university because it is quicker

- Up to 4 km cycling is better also in terms of sheer speed
Mobility among UniTo branches

Weekley frequency of journeys

- Students
- Faculty
- Technical/admin

I work/study in a single location
I work/study in 2 or more locations

Dimensione reale: più di 12.000 studenti che si spostano mediamente 3-4 volte la settimana
Mobility *among* UniTo branches

Prevailing modes

![Bar chart showing the percentage of students, faculty, and technical/admin staff for each mode of transportation: Walking, Bus, Car as driver, Train/suburban rail, Bicycle, Tram/trolley bus, Metro/light metro, Car as passenger, Motorcycle/Scooter, Bike sharing. The chart indicates that the highest percentage is Car as driver for faculty and students, and the lowest is Bike sharing for all categories.]
MobilitaUniTo

What are the most urgent areas of intervention?

1. 6 topics were submitted to evaluation
   - All sharing mobility services
   - Internal collective transport (university own shuttle buses)
   - All public transport (train, bus, metro ...)
   - Discounted fares for public transport
   - Free car parking
   - Cycle routes 7cycle paths

2. Importance on a 1 a 5 scale
Most urgent issues by prevailing travel mode

- **Discounted public transport fares**
- **Public transport services**
- **Free car parking**
- **Cycle routes/paths**
- **Sharing mobility services**

Legend:
- Bicycle
- Car
- Bus/tram/metro
- Train
UniTo-GO:
All round mobility initiative for a smarter, cleaner university

Andrea Scagni
Head of SMWG - Sustainable Mobility Working Group
Green Office - University of Turin
UniTo - the University of Turin

- A large, mega-atheneum with a sparse structure, about 120 branches in different locations around the city (and the suburbs)

- Its daily activities induce a significant part of the Turin metropolitan area mobility

- With a community of around 70,000, distances covered every single day are way above 100,000 kms.
UniToGO - Green office

- A dedicated team that works with a combined research + action approach on all topics concerning the sustainability of the university day-to-day activities

- Created at the end of 2016, includes people from faculty, students, staff and is granted specific funding

- It is an active member of the RUS (Rete Università Sostenibili) national network

- Organised in 5 working groups:
UniToGO - Sustainable mobility working group

- The main goal is to build cultural, normative and structural conditions that can motivate the members of the UniTo community to change their mobility choices towards sustainability.

The Modal share of home-to-work and home-to-school should increase for:
- active mobility (walking & cycling)
- Regional and local public transport (road or rail)
- Standard or new forms of sharing mobility
UniToGO - Sustainable mobility working group

The 4 STEPS of the approach to reach this goal:

- **Learn**
  - Acquisition of data and information on the present status of mobility choices and on the accessibility of all university buildings and locations;

- **Spread knowledge**
  - A systematic and well organized program of awareness raising events and cultural initiatives on sustainability in general and on mobility issues in particular;

- **Motivate**
  - Definition of incentive policies with economic bonuses and tariffs, regulation and rationalization of parking spaces;

- **Change**
  - Analysis and evaluation of innovative proposals on sustainable mobility infrastructure and their synergy with public transport services in the city that are relevant to University locations.
The Network of the working group

Local partners

- Piedmont Region
- Agenzia per la Mobilità
- 5T (data analysis)
- Turin Metropolitan Authority
- City of Torino
- GTT (public transport)
- To-Bike (bike sharing)
- Fiab (grassroots advocacy)

Inside Unito

- University governance
- Administration and Sustainability branch
- Press office
- Sustainability Report
- Personnel Training Branch
- Part-time students
- GreenTo (grassroots advocacy)
MobilitaUniTo: the mother of all surveys

- On-line questionnaire, both PC and mobile friendly
- 17,500 responses
- 2 units of dedicated staff

A huge effort to gather knowledge
- UNITO Newsletter
- Social media of all kinds
- Local promotion events
- Vocational training courses
- Prize draw for students
- Specific letters from rector magnificus

A local promotion event
MobilitaUniTo: how you travel matters to us

**A deep insight on behaviour and choices**

- Detailed, possibly multimodal *home2university* journey with info on each stretch mode and time
- Separately reported by season and weather
- Bike (and other) sharing specific section
- Subjective perception of critical issues regarding cycling and public transport (and the combination)
- Mobility assets and options actually available to the individual
- Travelling between university locations

• Online questionnaire working on PCs, tablets, mobile phones, etc.
• Data collected with the survey were linked to University administrative databases to avoid re-collection of already available data
### MobilitaUniTo

<table>
<thead>
<tr>
<th>Data quality</th>
<th>number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full answers</td>
<td>11.559</td>
<td>65,8%</td>
</tr>
<tr>
<td>Partial answers</td>
<td>4.172</td>
<td>23,7%</td>
</tr>
<tr>
<td>Empty or non informative answers</td>
<td>1.842</td>
<td>10,5%</td>
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<tr>
<td>Duplicated answers</td>
<td>1281</td>
<td></td>
</tr>
</tbody>
</table>

Who answered?

- Male 33,6%
- Female 66,4%
- Students 82,9%
- Technical/Admin 9,7%
- Faculty 7,3%

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus Luigi Einaudi</td>
<td>3.077</td>
</tr>
<tr>
<td>Polo di Economia (C.so U.S.)</td>
<td>1.762</td>
</tr>
<tr>
<td>Scienze della Natura (comprese via P. Giuria)</td>
<td>1.638</td>
</tr>
<tr>
<td>Campus di Grugliasco</td>
<td>1.224</td>
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<tr>
<td>Scuola di Medicina (Molinette)</td>
<td>1.062</td>
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<tr>
<td>Rettorato</td>
<td>450</td>
</tr>
<tr>
<td>Scuola di Medicina (Urbassano)</td>
<td>370</td>
</tr>
<tr>
<td>Informativa</td>
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<tr>
<td>Scuola Amministrazione Aziendale</td>
<td>273</td>
</tr>
<tr>
<td>Matematica</td>
<td>258</td>
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<tr>
<td>Biotecnologie</td>
<td>250</td>
</tr>
<tr>
<td>Aule dei corsi di studio dei dipartimenti central</td>
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</tr>
<tr>
<td>Ex Caserma Podigara</td>
<td>189</td>
</tr>
<tr>
<td>Savigliano</td>
<td>138</td>
</tr>
<tr>
<td>Palazzo L. Venturi</td>
<td>122</td>
</tr>
<tr>
<td>Scienze tecniche del farmaco</td>
<td>111</td>
</tr>
<tr>
<td>Professioni Infermieristiche</td>
<td>104</td>
</tr>
<tr>
<td>Cuneo</td>
<td>92</td>
</tr>
<tr>
<td>Psicologia</td>
<td>88</td>
</tr>
<tr>
<td>Centro innovazione via Quarello</td>
<td>61</td>
</tr>
<tr>
<td>DIST e orto botanico</td>
<td>58</td>
</tr>
</tbody>
</table>
MobilitaUniTo

Mobility and *multimodality*

- **Mobility in an urban and diverse environment**
  - Multiple travel options, for the full journey or parts of it
  - Different costs and advantages for each section of the journey

- **Uni- and multi-modal mobility**
  - On a given journey, the maximum sustainability can often imply multimodality
  - Questions like “How many people go to university by bike? How many by car?” are not

  - **Multimodality and sustainability are often closely related**
    - Multimodality can imply potential inconveniences for the individual (connections etc.)
    - Creating the best conditions for multimodality is thus a key goal

  - **The analysis of mobility choices becomes more complex**
    - “Prevailing” modality? How to define it? Should we study the detailed sequence?
Main travelling modality by season of the year

- **Main as declared by respondents:** that covering the longest distance

- **Bus**: + 88%
- **Train/Suburban rail**: + 248%
- **Car as driver**: 
- **On foot**: 
- **Tram/Trolley bus**: 
- **Metro/light metro**: 
- **Bicycle**: 
- **Car as passenger**: 
- **Motorcycle/scooter**: 
- **Ride sharing/Carpooling**: 

% Winter vs % Summer
MobilitaUniTo

Main travelling modality by role

- % Winter
- % Summer

Students

Car/scooter sharing free floating
Motorcycle/scooter
Bike sharing
Car as passenger
Bicycle
Metro/light metro
Tram/Trolley bus
On foot
Car as driver
Train/Suburban rail
Bus

Technical-admin

Car as driver
Bus
Train/Suburban rail
On foot
Tram/Trolley bus
Metro/Light metro
Bicycle
Car as passenger
Motorcycle/scooter
Bike sharing
Taxi

Faculty

Car as driver
On foot
Bus
Bicycle
Train/Suburban rail
Tram/Trolley bus
Metro/light metro
Motorcycle/scooter
Car as passenger
Bike sharing
Taxi
- physical **distance** of workplace (possible differences between car and bike distances)
- **time** approximately needed to cover the distance with each means of transport (in busy/nonbusy conditions)
- quality of the **bicycle route** in terms of safety, pollution and agreeable environment
- **uphill sections** on the bicycle route
- existence, cost and quality (speed, frequency of passages, n. of lines needed) of **public transport** on your specific route
- the **parking** facilities for both cars and bicycles at or near your workplace
- presence of **bike sharing** with stations near to your home and/or workplace
- the need to carry some **load** to the workplace
BIKE TO WORK: what affects the choice to cycle to work (and how)?

\[
\log \frac{Pr(bicycle \ is \ used)}{Pr(bicycle \ is \ not \ used)} = a + b_1 X_1 + b_2 X_2 + ... + b_k X_k
\]

Any factor that affects this probability

<table>
<thead>
<tr>
<th>Route environment</th>
<th>Route length</th>
<th>Type of Route</th>
<th>Peak hours</th>
<th>No cycle path at night!</th>
<th>Presence / frequency of public transport</th>
<th>Multi-modality?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant only if type of route not considered</td>
<td>5 km. more imply a 1/3 decrease of odds of cycling</td>
<td>Full cyclepath protected route: odds x 2.4</td>
<td>Transfer during peak hours rather than off-peak: odds x 1.5</td>
<td>Night-cyclepath: odds x 0.06!</td>
<td>Increase odds!</td>
<td>Consider single modal choices</td>
</tr>
<tr>
<td>Bike sharing</td>
<td>Parking</td>
<td></td>
<td>Cycle lanes not significant</td>
<td></td>
<td></td>
<td>Consider the importance of the bicycle stretch in multi-mode</td>
</tr>
<tr>
<td>Relevant (+11% probability). Main factor: capillarity</td>
<td>at work: cost for car</td>
<td>At home: hard to find space for car</td>
<td></td>
<td></td>
<td></td>
<td>Distinguish good and bad weather choices</td>
</tr>
</tbody>
</table>
General satisfaction regarding the home-to-university transfer

Assign a numerical level from 1 up to 10

By main modality used

- Bus/sharing
- Train/Suburban rail
- Car as passenger
- Van pooling
- Trolley bus
- Car as driver
- Metro/AAA meto
- Motorcycle/scooter
- Bike sharing
- Bicycle
- On foot
MobilitaUniTo

Average distance covered by main travel modality
General satisfaction regarding home-to-university transfers

Assign a numerical level from 1 up to 10 by total travel time.
## MobilitaUniTo
Complete journeys in detail - WINTER

### Multimodality count

<table>
<thead>
<tr>
<th>n. sections</th>
<th>N. cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7308</td>
<td>52.90%</td>
</tr>
<tr>
<td>2</td>
<td>4080</td>
<td>29.54%</td>
</tr>
<tr>
<td>3</td>
<td>1972</td>
<td>14.28%</td>
</tr>
<tr>
<td>4</td>
<td>424</td>
<td>3.07%</td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td>0.22%</td>
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<tr>
<td><strong>Total</strong></td>
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<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Mode 1</th>
<th>Mode 2</th>
<th>Mode 3</th>
<th>Mode 4</th>
<th>N. of people</th>
<th>Distance (km)</th>
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<tbody>
<tr>
<td>Road public transport</td>
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<td>Road public transport</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>2.718</td>
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<tr>
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<td>Walking</td>
<td>Car</td>
<td></td>
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<td>70.3</td>
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<td></td>
<td>1.159</td>
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<td></td>
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<td>Motorcycle/scooter</td>
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<td>Sharing Mobility</td>
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<td>Road public transport</td>
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<td>0.265</td>
<td>52.2</td>
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<td>Train</td>
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<td></td>
<td></td>
<td>0.228</td>
<td>56.8</td>
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<tr>
<td>Walking</td>
<td>Train</td>
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<td>Section 1</td>
<td>Section 2</td>
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<td>-----------</td>
<td>-----</td>
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<td>1.02</td>
<td>7.8%</td>
<td></td>
</tr>
<tr>
<td>Road public transport</td>
<td>0.92</td>
<td>0.94</td>
<td>0.94</td>
<td>6.8%</td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>0.94</td>
<td>0.93</td>
<td>0.93</td>
<td>5.9%</td>
<td></td>
</tr>
<tr>
<td>Road public transport</td>
<td>1.01</td>
<td>0.98</td>
<td>0.98</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Train</td>
<td>0.98</td>
<td>1.17</td>
<td>1.01</td>
<td>2.1%</td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td>0.96</td>
<td>0.91</td>
<td>0.91</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>Motorcycle/scooter</td>
<td>0.22</td>
<td>0.24</td>
<td>0.24</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Walking</td>
<td>0.98</td>
<td>1.10</td>
<td>1.05</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Road public transport</td>
<td>0.93</td>
<td>0.93</td>
<td>0.93</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td>0.97</td>
<td>1.04</td>
<td>1.00</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Walk</td>
<td>0.97</td>
<td>0.96</td>
<td>0.98</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>Train</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>2.0%</td>
<td></td>
</tr>
</tbody>
</table>

**Complete journeys in detail - SUMMER**

![Graph showing percentage of journeys by mode of transport](image-url)
Focusing on sustainability of modal choices

1. **Fully sustainable**
   All stretches use only *Active mobility, Public Transport, Sharing* in any combination

2. **Partially sustainable**
   Journeys made using *private motorized vehicles*, but only
   if combined with other modes

3. **Unsustainable**
   Journeys made *exclusively* with private motorized vehicles
Focusing on bicycle use

1. A bicycle is used to reach university
   Indicator of bicycle usage, own or shared, uni- or multi-modal

2. All travel combination that do not include a bicycle stretch
   Not necessarily unsustainable
Focusing on giving up car travel even though a car is actually available to the individual

- Percentage of respondents who do not travel by car among those declaring that a car is always available to them

- This is an indicator of “actual virtuosity”, it spots people who do not use a car, not even in multimodal, but declare they have it available for the journey to university
Sustainability of the home-university journey - Summer

- Students
- Faculty
- Technical/admin

- Unsustainable: 10% (Students), 9% (Faculty), 8% (Technical/admin)
- Partially sustainable: 24% (Students), 15% (Faculty), 15% (Technical/admin)
- Fully sustainable: 81% (Students), 59% (Faculty), 61% (Technical/admin)
MobilitaUniTo

Fully sustainable home-university journeys by university branch location

- Palazzo Nuovo
- Scienze della Natura (comprensorio via P. Giuria)
- Scuola di Medicina (Molinette)
- Campus Luigi Einaudi
- Ex Caserma Podgora
- Rettorato
- Polo di Economia (C.so Unione Sovietica)
- Campus universitario di Grugliasco
- Scuola di Medicina (Orbassano)
Bicycle usage in the home-university transfer - Summer

Bicycle as prevailing mode, winter

<table>
<thead>
<tr>
<th>Category</th>
<th>Students</th>
<th>Faculty</th>
<th>Technical/admin</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6%</td>
<td>10.9%</td>
<td>6.3%</td>
<td></td>
</tr>
</tbody>
</table>

MobilitaUniTo
Bicycle usage on the home-university transfer by university branch location - Summer

MobilitaUniTo

- Rettorato
- Sc. della Natura
- Scuola di Medicina
- Campus Luigi Einaudi
- Ex Caserma Podgora
- Palazzo Nuovo
- Campus di Grugliasco
- Polo di Economia (C.so Unione Sovietica)
- Scuola di Medicina (Orbassano)

0% 4% 8% 12%
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I do **not** travel by car to university, even though I have one available.
Inventory: the existing bicycle parking lots

- Quantity
- Safety
- Efficient use of space
- Easy to access and close to the site

The Rectorate: obsolete, inefficient

The new Social Sciences Campus: Good, but.. still not enough
Perspective: safer bicycle parking lots

The new controlled access bicycle parking at the Social Science Campus
Bike Sharing: a part of the students’ package

A successful service, with a bright development outlook

- Special cheap fares for all students offered on enrolment
- Special University-only stalls in strategic locations
- In-depth data analysis on how the service is used by the academic community and citizens at large
Infrastructure: fast, easy & safe cycling routes to the academia

Working with public administrations to help plan a better network of cycle routes between linking university sites and the main transport hubs

- Many students attend/faculty teach courses in different university sites
- Turin has a large population of students from the whole region - linkage with the 4 main rail stations is crucial
- The UniTo-GO SMWG is cooperating with public administrations, Advocacy groups like FIAB, other institutions to help define the best routes and the right mix of protected lanes, signposting, traffic moderation to ensure smooth, safe cycling
Infrastructure: an example

City Centre

Humanities Campus
Bike2Work project: strong partner and competitor

Co-sponsored with:
- Piedmont region
- Turin metropolitan area
- Turin city council
Events and workshops: spread the news on mobility
WEB UNITO: help people make the best mobility choices

- Lots of information regarding active mobility and public transport options
- Clearly showing the University commitment to limit the environmental impact of its induced mobility
Video production: *exploiting the smartest media*

- A news video for the launch of the new Smart mobility UNITO WebSite, shot in the historical Rectorate building courtyard.
- A national television news video for the bike2work campaign, shot directly on Campus.
- A video showing students starting their journey with ToBike sharing scheme.
Thank you for the attention!
Subjective perceptions and assessments

Satisfaction, critical issues, possible improvements

1. Is home-university mobility a problem?
   Self-evaluation of the travel experience, difficulties magnitude, “all is well” responses

2. What are the change in perceptions depending of travel modes?
   Which travel modes cause the most distress

3. What should be urgently improved?
   Specific suggestions for each travel mode
General issues

concerning the home-university journey

- Traffic congestion
- Public transport is crowded
- Public transport suffers from delays
- Public transport is sparse
- It is difficult to find space to park
- Travelling is expensive
- Lack of safe cycle routes
- Parking is expensive
- Journey is not comfortable
- Lack of space for bicycles
- Unsafe bicycle racks
- Journey is dangerous
- Physical Barriers

% of respondents reporting the issue
General issues

Perceptions differ strongly by travel mode

![Bar chart showing differences in perceptions by travel mode]
General issues

Perceptions differ strongly by travel mode - 2
Why I use a car to reach university

- Higher freedom of movement
- Journey is quicker
- There is no public transport direct link
- Journey is comfortable
- Public transport is too sparse
- Public transport has delays and cancellations
- Public transport is crowded/unclean
- Public transport too far from home
- Journey is safer
- Cheaper than public transport
- Need to carry other people around
- Cycling routes are lacking or unsafe
- Public transport has physical barriers

Average of 1 to 5 marks
Why I use public transport to reach university

- Journey is cheaper
- Parking around university lacking or expensive
- Public transport fares are discounted
- I do not have full access to a car
- I can do other things while travelling
- Journey is safer
- Journey is quicker
- Cycling routes are lacking or unsafe
- Higher freedom of movement
- Journey comfort

Average of 1 to 5 marks
Why I cycle to university

- Higher freedom of movement
- I can stay fit
- Journey is cheaper
- Journey is quicker
- Car parking around university lacking/expensive
- Journey is comfortable
- Public transport is crowded/unclean
- Public transport is sparse
- Public transport suffers from delays
- There is no direct public transport link
- Limited access to car/motorcycle
- Journey is safer
- Public transport is far from home

Average of 1 to 5 marks

1.5 2.0 2.5 3.0 3.5 4.0 4.5
I cycle to university because it is quicker

• Up to 4 km cycling is better also in terms of sheer speed
Mobility among UniTo branches

Weekley frequency of journeys

- < 1
- 1-2
- 2-3
- 3-4
- 5 or +

Students
Faculty
Technical/admin

I work/study in a single location
I work/study in 2 or more locations

Dimensione reale: più di 12.000 studenti che si spostano mediamente 3-4 volte la settimana.
Mobility among UniTo branches

Prevailing modes

- Walking
- Bus
- Car as driver
- Train/suburban rail
- Bicycle
- Tram/trolley bus
- Metro/light metro
- Car as passenger
- Motorcycle/Scooter
- Bike sharing

![Chart showing mobility among UniTo branches]
What are the most urgent areas of intervention?

1. **6 topics were submitted to evaluation**
   - All sharing mobility services
   - Internal collective transport (university own shuttle buses)
   - All public transport (train, bus, metro ...)
   - Discounted fares for public transport
   - Free car parking
   - Cycle routes and cycle paths

2. **Importance on a 1 to 5 scale**
Most urgent issues by prevailing travel mode

- Discounted public transport fares
- Public transport services
- Free car parking
- Cycle routes/paths
- Sharing mobility services

Legend:
- Bicycle
- Car
- Bus/tram/metro
- Train