SHARING AS A KEY TO RETHINK URBAN MOBILITY: INVESTIGANTING AND MODELING INNOVATIVE TRANSPORT SYSTEMS

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Motivation

Evaluate how innovative transport systems could be used to go beyond the actual private-car centered transportation system.
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Investigate and model innovative transport systems
Carpooling & Carsharing

**Carpooling:** Two or more persons, not belonging to the same household, sharing a trip, or a part of it, with the passengers contributing to the driver’s expenses.

**Carsharing:** A membership program intended to offer an alternative to car ownership under which persons or entities that become members are permitted to use vehicles from a fleet on an hourly basis.
Context (1)

Sharing
- Information, pictures, video, etc.
- Objects

Community (Peer-to-peer)
- Virtual communities → Real world
“Servicizing”
- Accessing instead owning

- Car culture
  - Young generations less interested in owning a car
Carpooling
Carpooling

• Goal
  • Understand and model the attitude toward carpooling of the Swiss public

• Methodologies
  • Discrete choice modeling
  • Qualitative and cluster analysis

• Data
  • Survey with stated choice exercise and qualitative questions (2010-2011)
    • Stated choice exercise based on reported trips
    • 1683 persons recruited in Switzerland (51% response rate)
    • Stated choice on carsharing as benchmark
Summary qualitative carpooling

• Positive Attitude: 76% Positive
• Readiness to participate: 51% would participate
• Most important characteristics of the trip-mate: Driving style, Smoker, Appearance/Demeanor
• Basis for sharing the costs: Gasoline cost (70%)
• Maximal deviation for the Driver: up to 10 Minutes (83%)
• Barriers: Time adjustments, Fixed working time, Risk not being picked up
• Preferred incentives: Back-to-home guarantee, Pooling Platform, Financial incentives
What motivate potential carpoolers?

- Environmental relief
- Saving of CO2
- Decongestion of roads
- Decongestion of parking lots
- Saving expenses
- Saving time vs public transport
- Social aspect
How should a Carpooling platform be?

1. Entering data in a short time
2. Protection of personal data
3. Clear structure for fees
4. Having mobile phone number of riding/mate
5. Possibility for allowance for smoking in the car
6. Possibility for rating of ride-mates
7. Possibility to look for a ride on the road
8. Restriction to certain users (e.g., colleagues from work)
9. Preferences for gender of ride/mates

Survey results:
- **very important**
- **rather important**
- **rather unimportant**
- **totally unimportant**
- **no opinion**

Percentage distribution:
- 0%
- 20%
- 40%
- 60%
- 80%
- 100%
Clusters

- **Not interested / Negative** (4.5%)
  - No factors
  - Older, small HH, high or low Income, Retired

- **Pragmatic** (18.8%)
  - Egoism and Convenience
  - Young, avg. to high Income, Employed

- **Skeptical environmentalist** (45%)
  - Environment / Altruism and Reliability / Safety
  - Female, avg. to low Income, PT oriented

- **Enthusiastic environmentalist** (31.7%)
  - Environment / Altruism
  - Young to middle age, avg. to high Income, Well educated, Employed
Remarks

• Is carpooling really on the verge of a breakthrough in Switzerland?

• Possible reasons of the (for carpooling very positive) results are:

  • Sample bias (Self selection effect)
  • Reflects some assumptions on carpooling which might be unrealistic for some potential participants (temporal deviation, available matches, etc.)
  • SP sometimes closer to self-representation than to reality
  • Learning process?
Conclusions

• Overall, the existence of a good unexploited potential for carpooling in Switzerland is suggested.

• In general, the public shows interest in innovative transport solutions.

• Technology might help exploiting this potential.

• The context is positive for innovation in transport and for all forms of “shared economy.”
Thank you for your attention!
Correlation willingness to be a driver/passenger
Strategy to upscale carpooling

*Enthusiastic environmentalist* → Early phase, little advertisement centered on environmental benefits

*Skeptical environmentalist* → When most flaws are solved, large advertisement centered on environmental benefits, safety, reliability

*Pragmatic* → When evidence of personal benefits emerges from practice, large advertisement centered on reliability and personal benefits

*Non-interested* → No advertisement at all, might change if carpooling become mainstream
Statistics: Sample vs. Micro-census

- Gender= + Male
- Age: - Young + Middle Age
- Education: ++ Tertiary
- Household Size: + Larger households
- Cars in the household: + Multiple cars (>=2)
- Public Transport Season Tickets: + HF + GA
- Income: + Affluent
<table>
<thead>
<tr>
<th>Revealed Choice</th>
<th>Stated Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car = 68.4%</td>
<td>Car = 39.8%</td>
</tr>
<tr>
<td>Car Passenger = 11.1%</td>
<td>CP Passenger = 35.0%</td>
</tr>
<tr>
<td>Other = 0.5%</td>
<td>CP Driver= 16.3%</td>
</tr>
<tr>
<td>PT = 19.9 %</td>
<td>PT = 8.9%</td>
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</tbody>
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