



Ministry of Infrastructure
and Water Management

KiM Netherlands Institute for
Transport Policy Analysis

Alternatives to Special Transport Services in the Netherlands: The perspective of mobility-impaired people

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for Elderly and Disabled Persons (TRANSED)

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Background

- Research commissioned by Dutch policymakers working for national government
- Special Transport Services (STS): transport with **restricted** access.

The Netherlands (NL)

Area ~ 15% larger than Taiwan

~ 17 mio inhabitants

~ 1/10 of the Dutch population has a mild or severe impairment

~ 19% of 65 + years old





Outline

1. Context
2. Research question and sub-questions
3. Method and data
4. Results per sub-question
5. Conclusions



1. Context



1. STS in the Netherlands



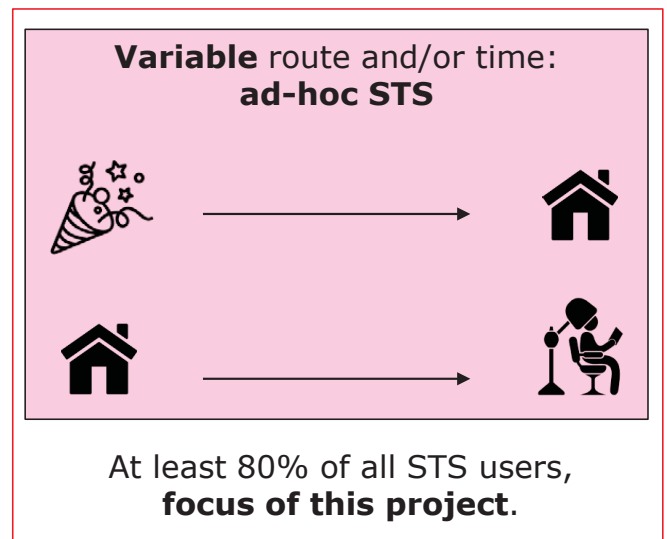
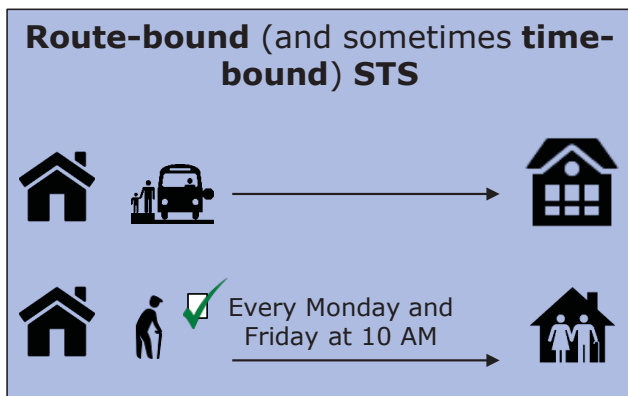
Gemeente Amsterdam



ovmagazine.nl (2015)



1. STS in the Netherlands



In this presentation: STS = **ad-hoc STS**



1. STS in the Netherlands

- Demand for STS is expected to **rise** in the coming years in the NL.
- High subsidies + alleged inefficiency of STS: do **travel alternatives** exist?

	STS	Public transport (PT)
Passenger kilometres (x mio)	> 600	6,600
Subsidies (x mio Euros)	> 700	1,660*
Trips (x mio)	> 50	861

Figures from 2015 (*: 2012).
Zijlstra & Bakker (2016), CROW KpVV (2017), TransTec & BMC Advies (2014), LPR data.



ovpro.nl (2012)



2. Research question and sub-questions



2. Research question and sub-questions

To what extent do STS users in the Netherlands have a travel alternative?

Sub-questions:

1. Who are the current users of STS in the Netherlands?
2. How do they use STS?
3. What is their travel behaviour in general?
4. Do they potentially have travel alternatives?



3. Method and data



3. Method

- Large commercial research panel
- Selection criteria:
 - **Indication to use STS,**
 - **Use of STS at least once in the past 3 months,**
 - **Age ≥ 20 .**
- Main questionnaire sections:
 - Last trip, existence of alternatives
 - General travel behaviour
 - Person's characteristics and impairment



3. Data

Questionnaires started	= 900
Passed screening Feb/March 2018	= 695
Response by target group	= 580
Clean net sample	= 524

 19%

 81%

- Sample size sufficient: error margin 5%
- Imputations (if <5% missings)
- Observations weighed by: age groups X gender, type of STS used.



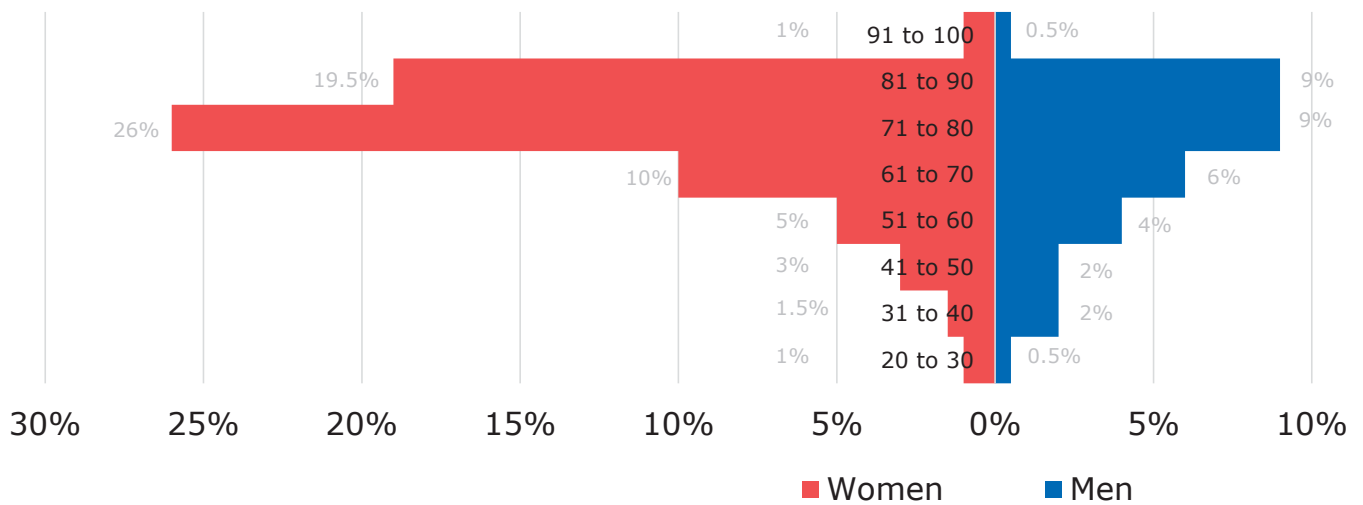
4. Results



4.1. Who are STS users?

- Average age: 71 years old
- 51% live on their own

Age and gender pyramid

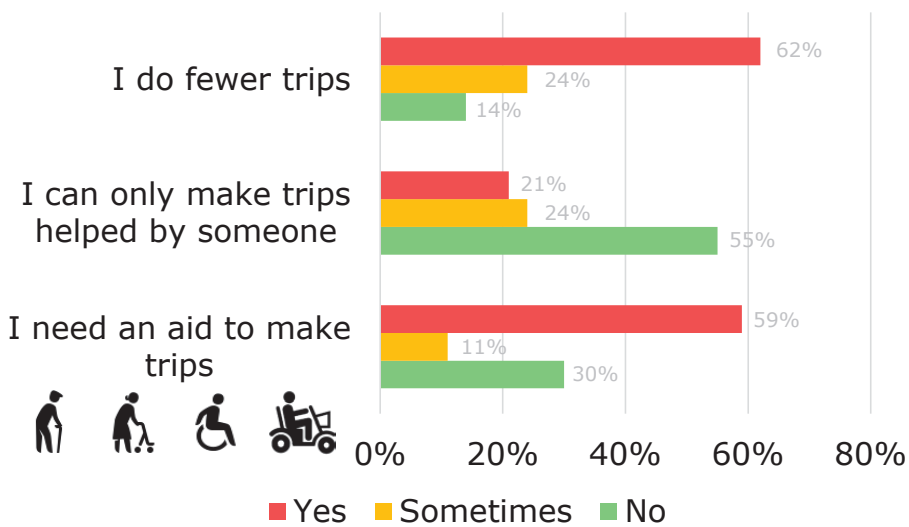




4.1. Who are STS users?

- Self-declared mobility impairment: 89%

Because of my impairment...

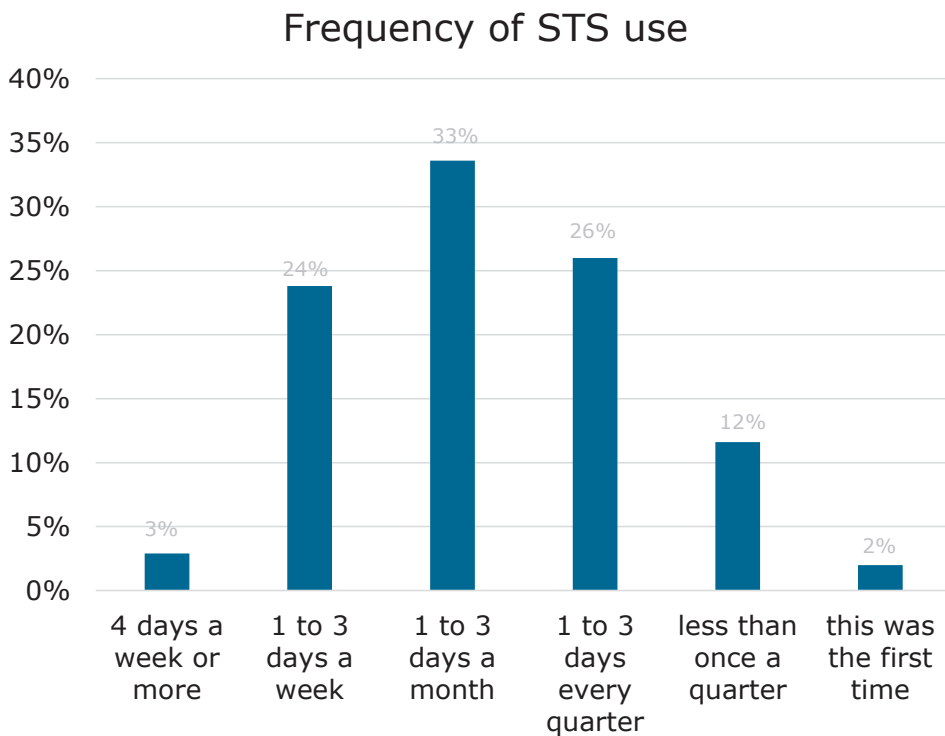


Top 3 types of impairment:

1. Walking (71%)
2. Sitting and/or staying sat (50%)
3. Balance problems (33%)



4.2. How is STS being used?



Because of the criterion "Use of STS at least once in the past 3 months", underestimation of infrequent users.

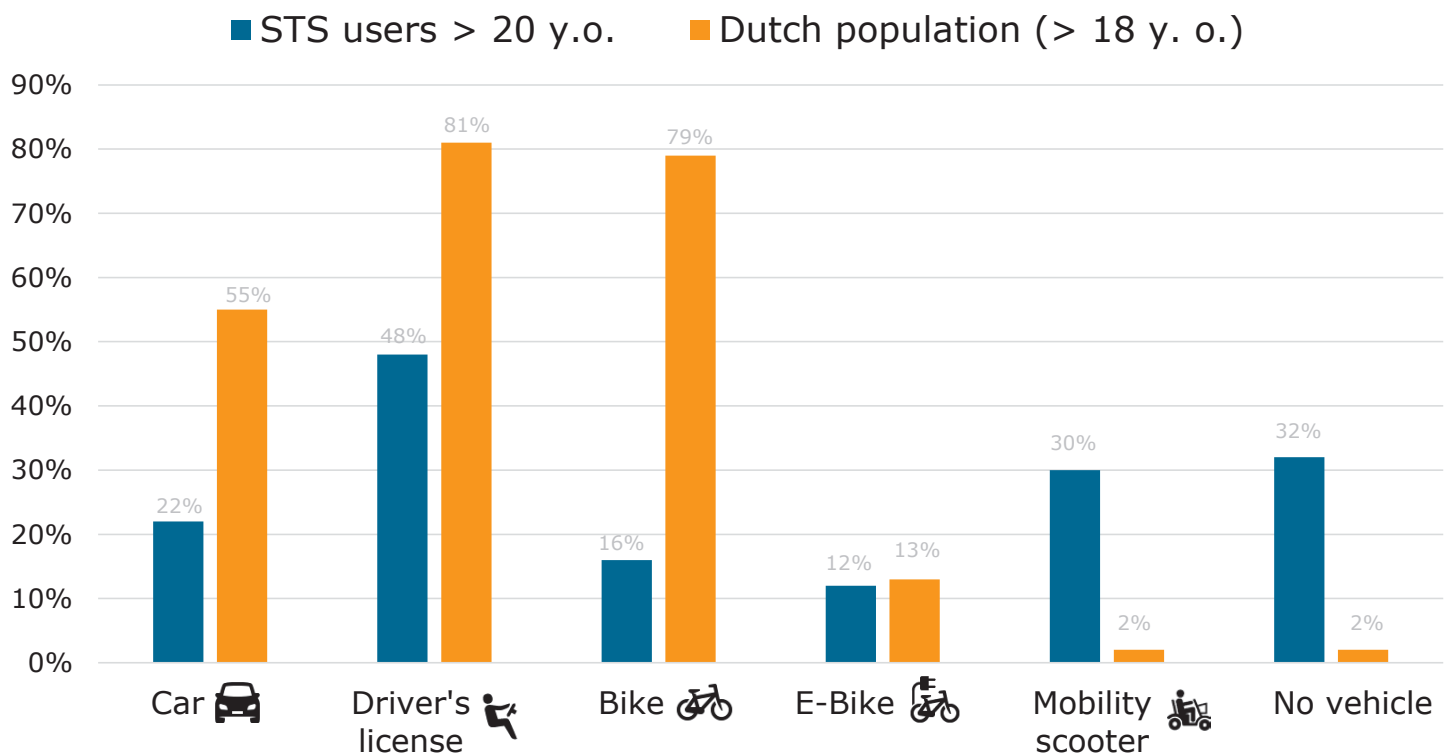
Frequent STS users are more likely to:

Ordinal regression in order of importance:

1. Not own a car
2. Not manage well with PT
3. Be chauffeured by relatives
4. Have a lower education level
5. Not be retired
6. Be women

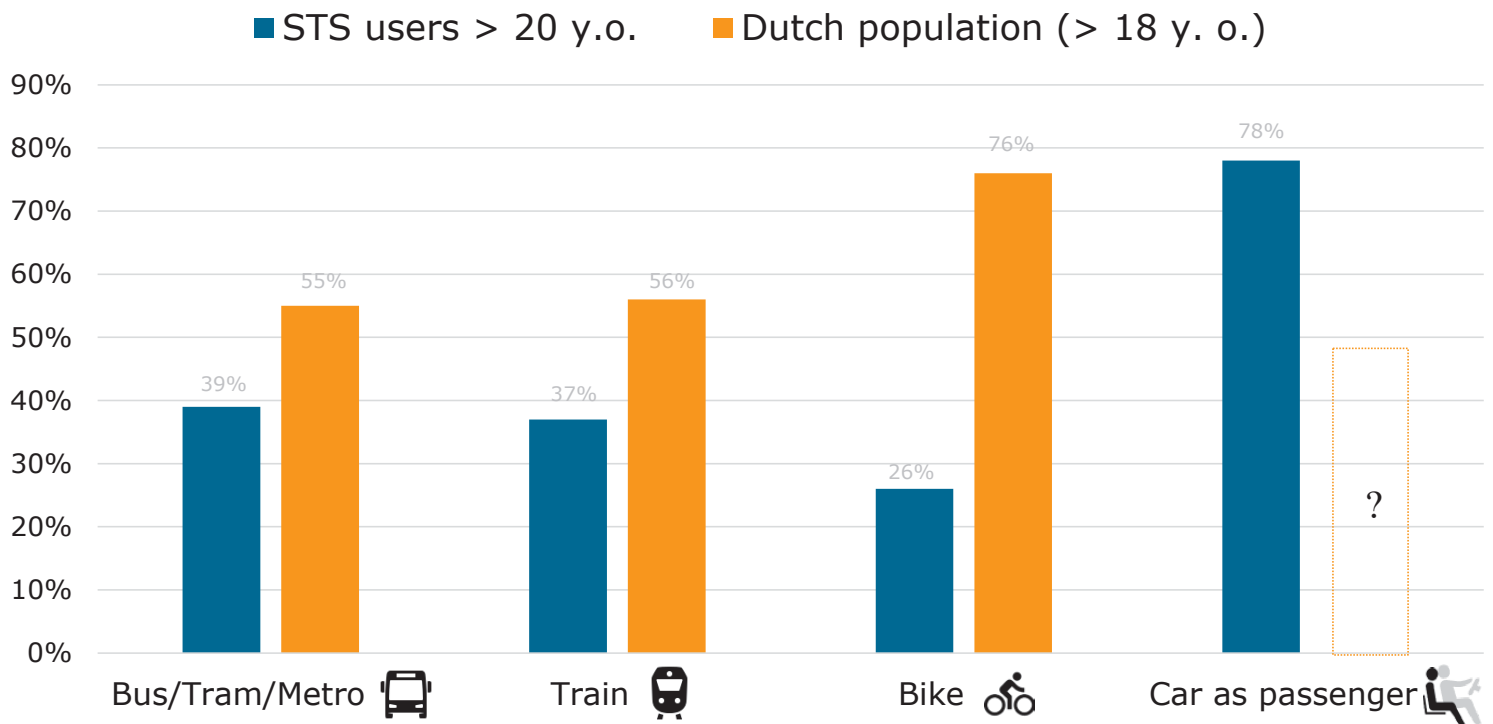


4.3. STS users travel behaviour: vehicles and driver's license





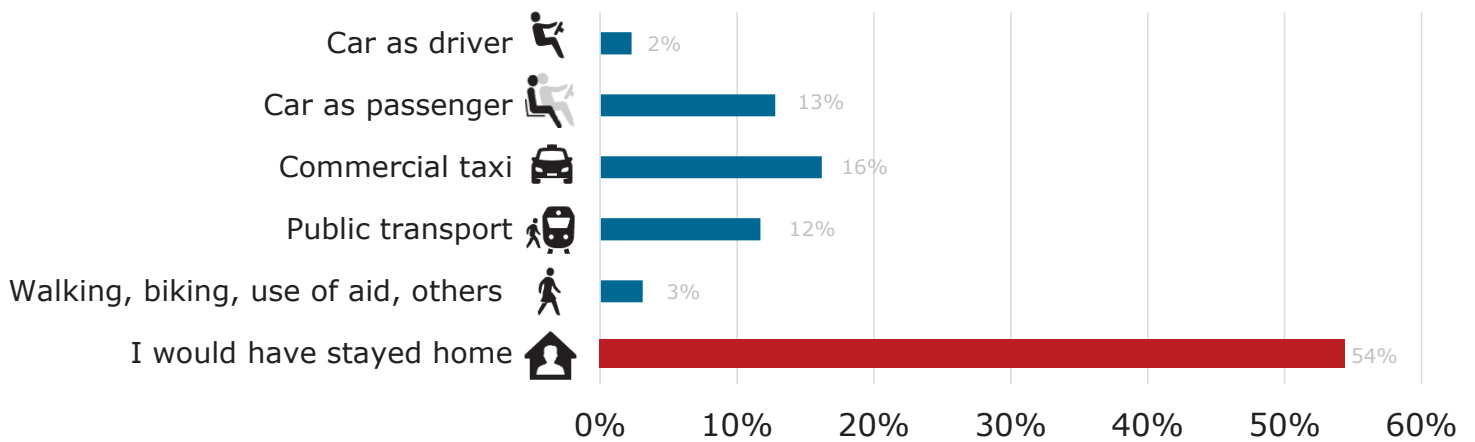
4.3. STS users travel behaviour: use of bike, PT, car as passenger





4.4. Alternatives to STS

- Last trip mostly **representative** of STS use in general.
- "What would you have done, had STS **not** been here for your last trip?"





4.4. Alternatives to STS




People who **would have stayed home** are more likely to:


Binary logistic regression model – marginal effects for significant variables ($p < .05$) only

- Be women + 15%
- Need an accompanying person + 13%
- Not have a car + 12%
- Need an aid (wheelchair, rollator, mobility scooter, stick, etc.) + 11%
- Never use public transport + 10%



4.4. Alternatives to STS

-  Why not going with car as a passenger in the first place?
- 61% "I can't ask anyone"
 - 25% "I don't want to burden anyone"

-  People for whom **public transport** would have been the best alternative are more likely to:

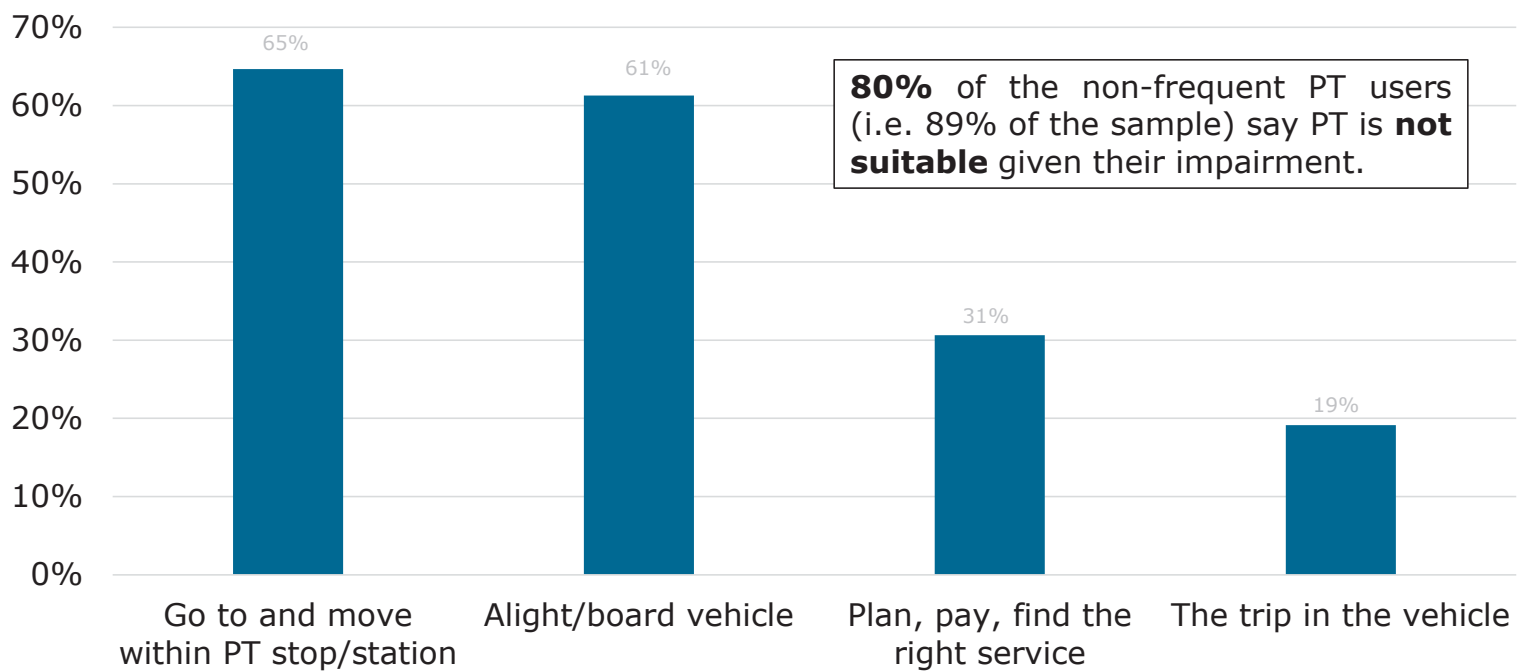
Binary logistic regression model – marginal effects for significant variables ($p < .05$) only

- **Not** need anyone to accompany them + 11%
- Still be bike/e-bike users + 7%



4.4. Alternatives to STS: the case of public transport

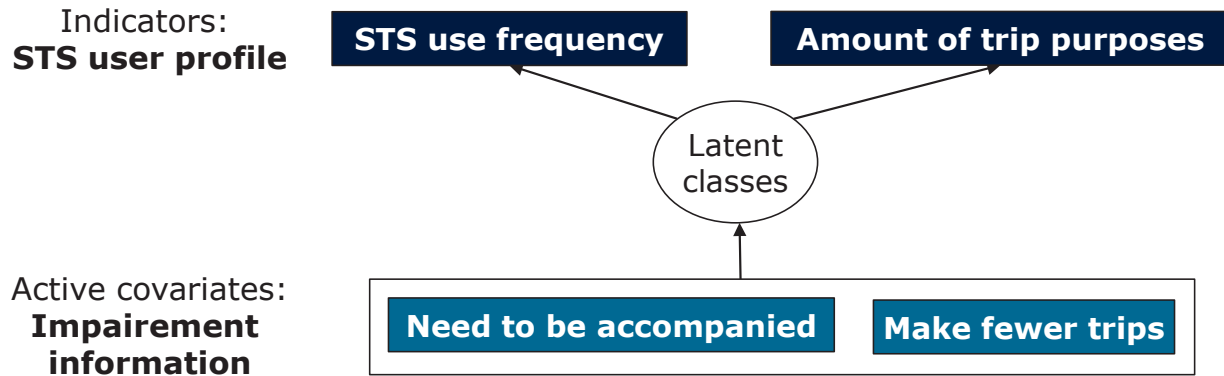
Main obstacles in PT (non-frequent users only, i.e. PT fewer than 3 times a month)





4.4. Clustering

To reveal different profiles of STS users and the types of alternatives they have.





	Latent Cluster 1	Latent Cluster 2	Latent Cluster 3
STS use frequency	66 days/year	76 days/year	8 days/year
Amount of trip purposes with STS	2.5	2	1
Need an accompanying person	1%	51%	16%
Make fewer trips	87%	97%	79%
	Frequent users, independent, active	Very frequent users, most heavily impaired cluster	Occasional users, relatively independent

3-cluster model: 346 cases used in estimation, prediction accuracy (in-sample): 88% / LL: -694 / BIC: 1499 / **Bold number**: max / : above average



	Latent Cluster 1	Latent Cluster 2	Latent Cluster 3
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Probably the largest cluster "in real life"

STS use frequency	66 days/year	76 days/year	8 days/year
Amount of trip purposes with STS	2.5	2	1
Need an accompanying person	1%	51%	16%
Make fewer trips	87%	97%	79%
Women	71%	71%	55%
Living alone	64%	44%	39%
Offered to be chauffeured by relatives	78%	90%	70%
Public transport users	57%	28%	45%
Frequency of use of other modes (excl. walking)	95 days/year, max.	84 days/year, max.	103 days/year, max.
Would have stayed home, had STS not been here	53%	56%	43%

3-cluster model: 346 cases used in estimation, prediction accuracy (in-sample): 88% / LL: -694 / BIC: 1499 / **Bold number: max** / : above average



5. Conclusions



5. Conclusions

- STS fulfill a need among the Dutch population
- Not everyone among STS users has a travel alternative
- STS can offer independence
- Public transport is hardly an option for a majority of STS users
- Relevant insights for policymakers
- Relevance outside of the Netherlands. 3 main trends in STS (Europe):
 - Steering STS users towards other modes,
 - Making STS more (cost-)efficient,
 - “Smart” mobility.

Yet only few country-wide studies investigated the user perspective; STS users are difficult to reach.



Thank you!

Questions?

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Back-up slides



Outline

[Income distribution](#)

[Last trip's general facts](#)

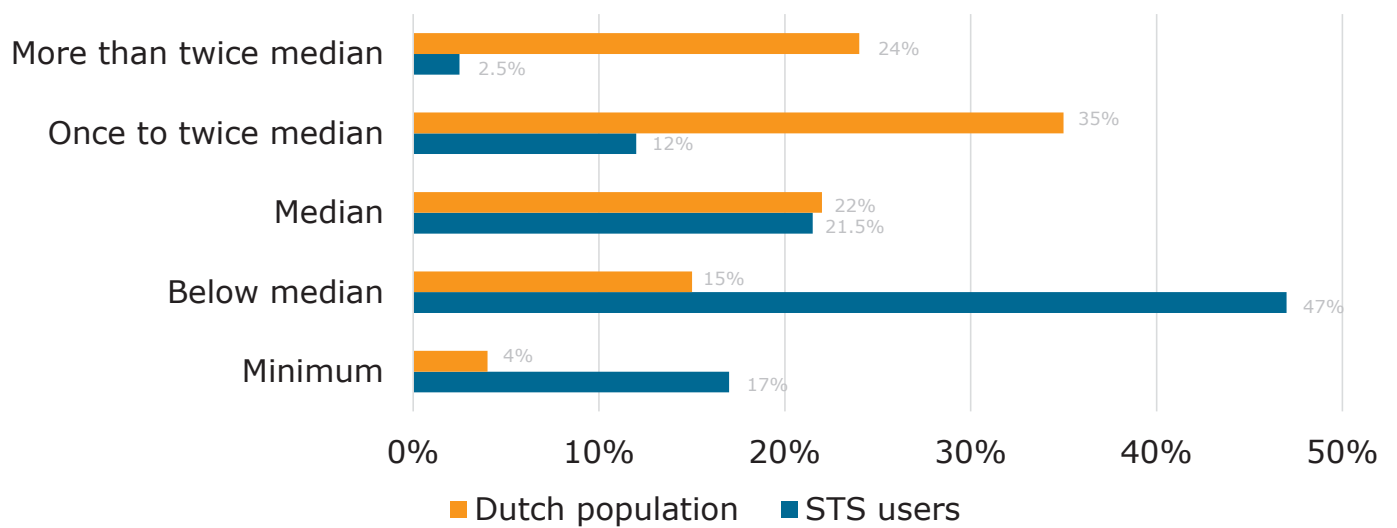
[Mobility impairment consequences](#)

[Trip purposes with STS](#)

[STS satisfaction](#)



Income distribution



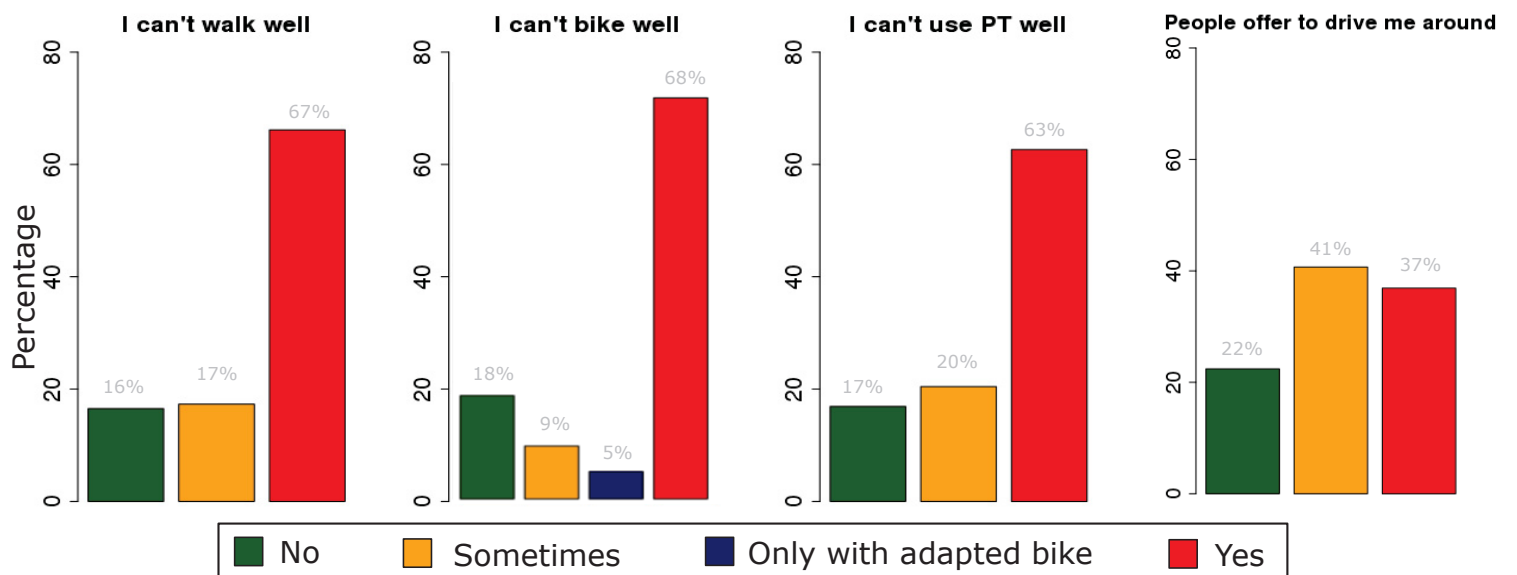


Last trip's general facts

- **66%** travelled **on their own** (without relatives or friends).
- When accompanied, in **59%** of the cases it is by the **partner or caregiver**.
- **72%** used a **telephone** to order the trip (calling).
- **93%** declared their last trip to be **(very) important**
People who declared a mobility impairment are **significantly more likely** to find their last trip with STS (very) important.



Mobility impairment consequences





Trip purposes with STS

Top 3 trip purposes	
Visit friends/family at home	31 %
Medical appointment	28 %
Recreative (going out, holidays, etc.)	12 %



STS satisfaction

- 3 most important aspects: *leaving on time, arriving on time, being updated when the trip is delayed.*
- *Not having to share the vehicle with other passengers: 6%.*
- *Driver's friendliness: 23%.*
- Based on important aspects in STS, 3 main user profiles can be identified:
 - **Price-focused**
 - **Reliability-oriented** (arriving and leaving on time, trip duration)
 - **Human-centred** (social safety, easy to book, driver's friendliness)