We need collective transport – EVs and AVs cannot solve all mobility problems.

(Figure: Stadtwerke Münster, 1991)

But traditional public transport is inflexible, with fixed schedules and routes...

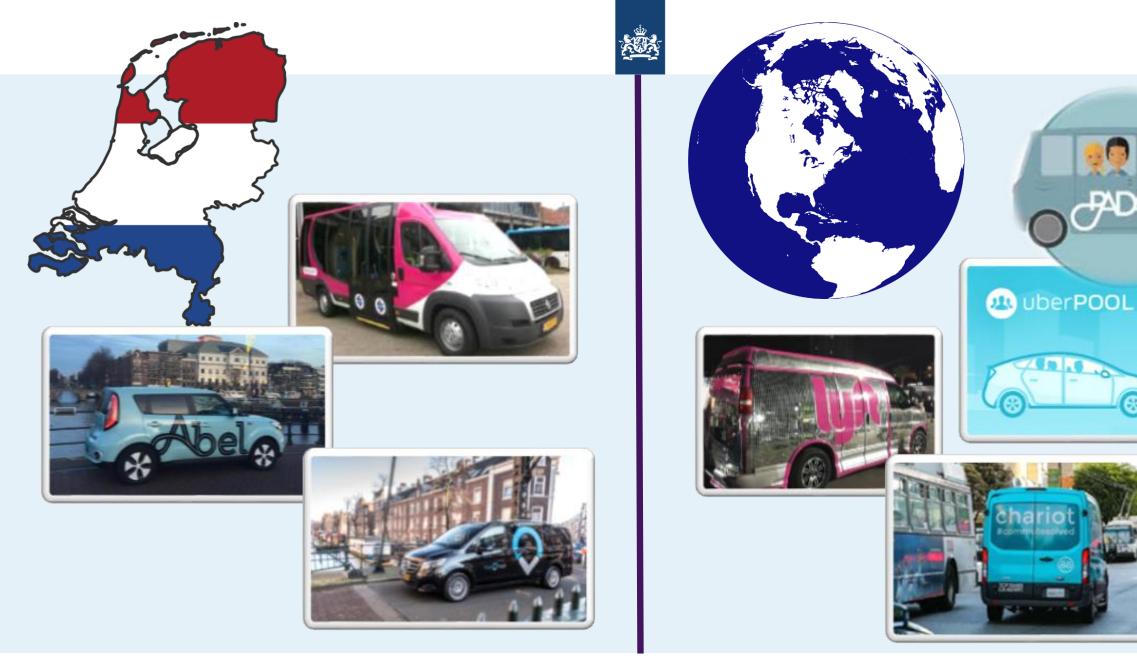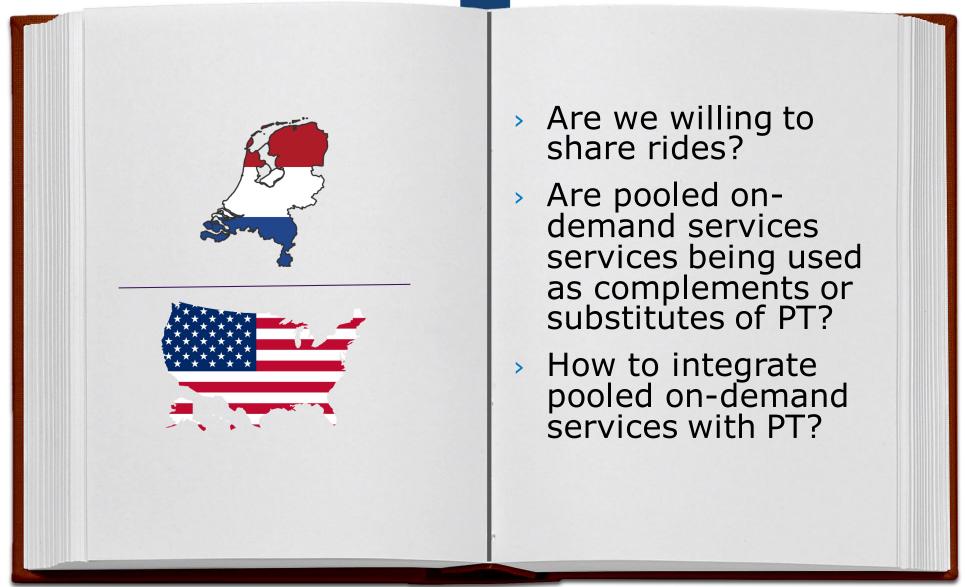... and it is not always the right size.

What about introducing a service which is collective, has flexible times and routes, and tailors its size to the demand needs?

Pooled on-demand services

Structure of the presentation

› Are we willing to share rides?

› Are pooled on-demand services services being used as complements or substitutes of PT?

› How to integrate pooled on-demand services with PT?
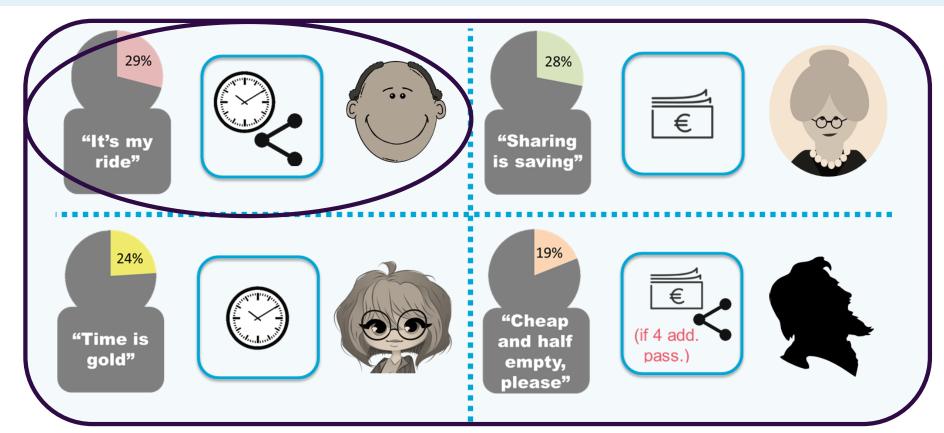
Are we willing to share rides?

Q: How many on-demand users request pooled rides over the individual ones? (provided that the provider offer both)

~20%. (Gehrke et al., 2018)

Pooled on-demand rides also amount to ~20% of the rides. (Chen et al., 2018; Uber, 2018)

Yet less than 1/3 of urban individuals have strong preferences against sharing their on-demand rides (NL)

29% "It's my ride"

28% "Sharing is saving"

24% "Time is gold"

19% "Cheap and half empty, please" (if 4 add. pass.)
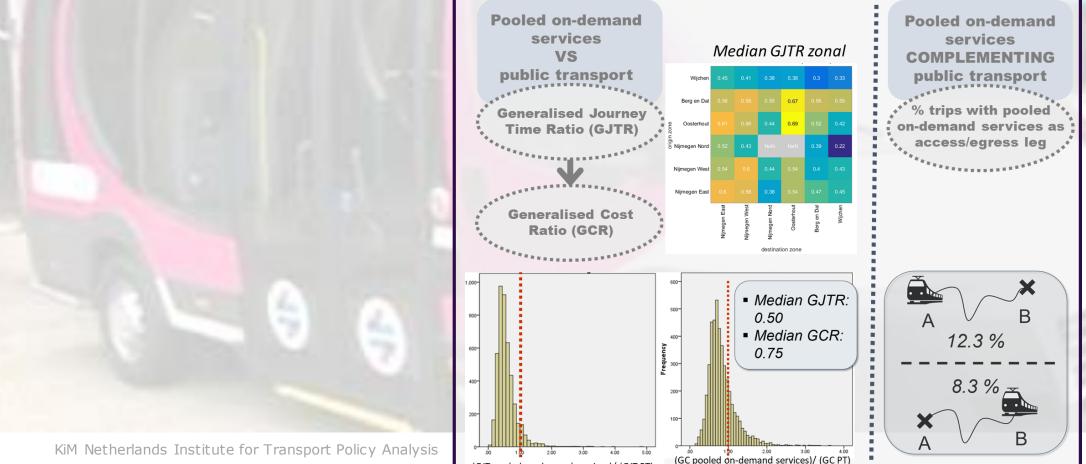
(Alonso-González et al., 2020)

Time-cost trade-offs are key to individuals' choice!

Are pooled on-demand services being used as complements or substitutes of PT?

Additional studies are necessary, but the case of BrengFlex shows important increases in accessibility and suggests a stronger complementary relationship

Pooled on-demand services VS public transport

Generalised Journey Time Ratio (GJTR)

Generalised Cost Ratio (GCR)

Median GJTR zonal

Pooled on-demand services COMPLEMENTING public transport

% trips with pooled on-demand services as access/egress leg

- Median GJTR: 0.50
- Median GCR: 0.75

12.3 %

8.3 %

(GJT pooled on-demand services)/ (GJT PT)

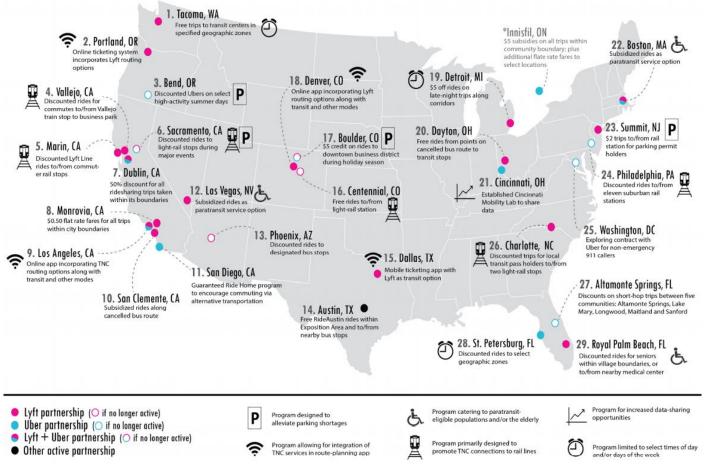(GC pooled on-demand services)/ (GC PT)

(Alonso-González et al., 2018)

How to integrate pooled on-demand services with PT?

In the USA, the focus is on partnerships between PT and TNCs.

5 partnership categories

1. **Encouraging connections** between ridesharing & transit service and/or fill in the gaps ;

2. **Smartphone apps** to combine ridesharing and transit;

3. **Mitigating parking shortages** and/or forestall investments in parking lots;

4. **Promote mobility for seniors** & those with **impairments**;

5. **Specialty programs** that *indirectly* promote transit use.

(Schwieterman et al., 2018)

In Europe, the focus is on MaaS, which focuses on the integration between all available modes (NL → 7 pilots).

Podcast tip on MaaS:

Episode 3

Researching Transit

Somewhat different approaches between US and NL but same reality:

› Integration does not come without its challenges.

› Data can be an important instrument to understand the impact of pooled on-demand services (and other modes) on public transport – e.g., Mobility Data Specification (MDS).

› Pooled on-demand services should be evaluated integrated with the other existing alternatives (and not as isolated mode).

› An integrated service approach with PT can help strive for more equal urban accessibility and decrease collateral risks regarding PT revenue. E.g., price determined based on their generalized cost comparison.

Key takeaways

› "One size does not fit all", also not in relation to public transport – Pooled on-demand services can help.

› Individual vs pooled services from the user perspective – Analyze the time-cost trade-offs offered.

› Complement or substitute PT? – It is not black or white. Integrating both services can contribute towards synergies between PT and pooled on-demand services.

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Thank you!

Do you have any questions?

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