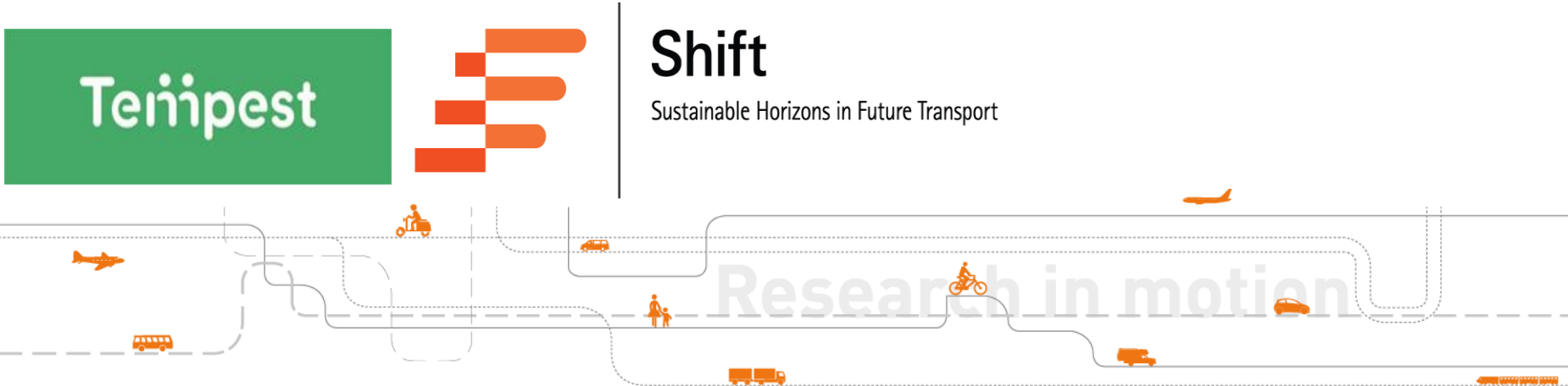


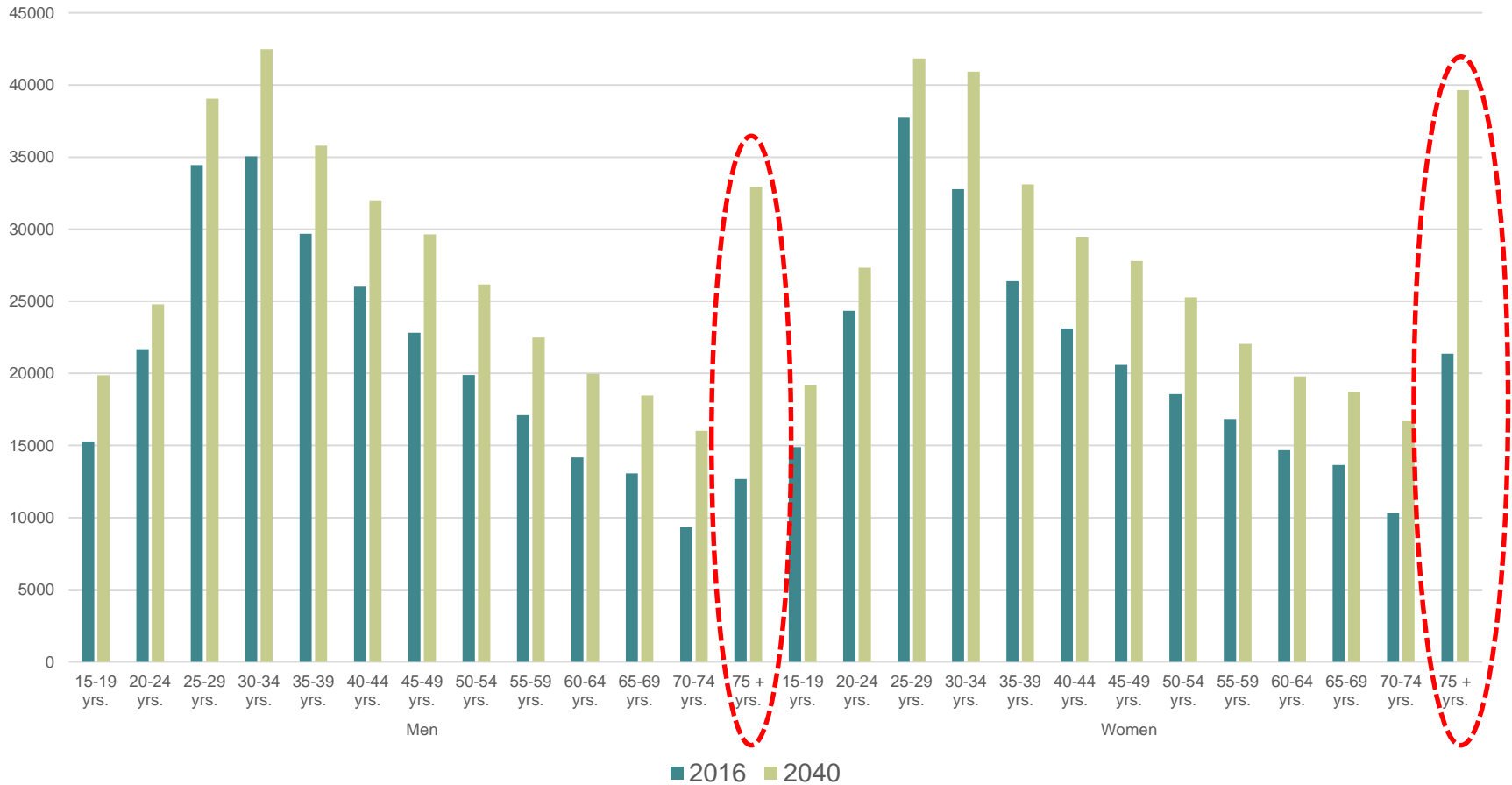
Demography, travel behavior, and car sharing potentials.

The case of Oslo, Norway

Tanu Priya Uteng, PhD
TØI

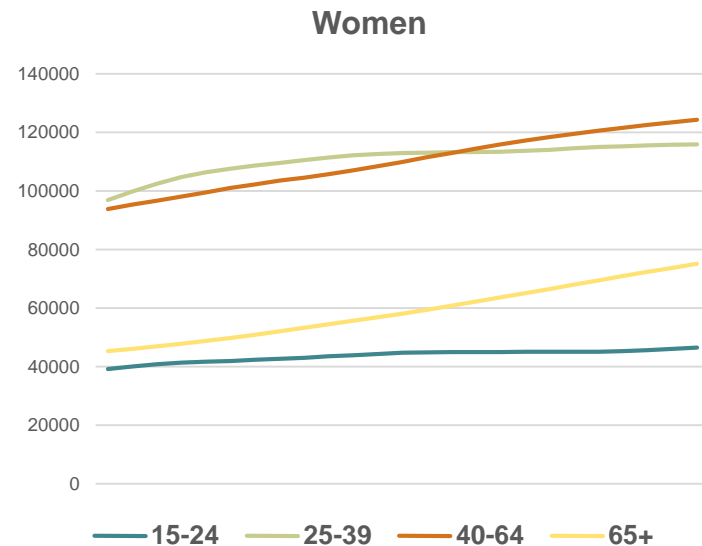
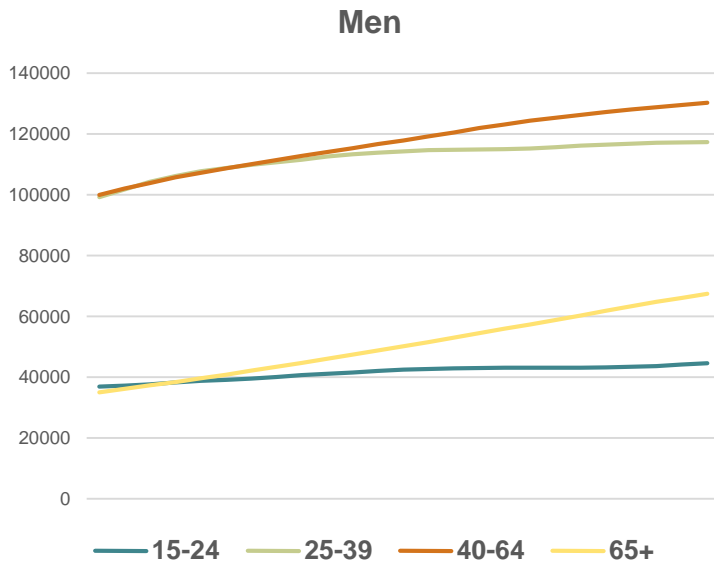


DEMOGRAPHY



- 75+-year-olds will account for 10% of population by 2040 compared to 6% in 2016.
- Share of Oslo’s “retired” population (65 +) will grow from 14.7% to 19.8% by 2040.

Gendered variations



- **Established workers** group will overtake the young workers in population size **much earlier** in **men** than in women.
- By 2040, **disparity** between **youth and elders** is **larger** in **women** than in men.
- **Women** are projected to have a **larger share of elders** than men by 2040, while **men** are projected to have a **larger share** of **established workers** than women.

Demography vis-à-vis future mobility

Established workers and **elderlies** will make up a larger share of the overall population

Higher **influence** on future mobility

Disaggregated analyses needed

Why are these variations important?

- Travel behaviour variations – age, gender
- For example, in Oslo (and around) :
 - i. Males aged 35–45 - most eager drivers BUT, average number of daily car trips has been falling
 - ii. Middle-aged (45–65-year-olds) increase in average number of daily car trips
 - iii. Even stronger trend for 65+ years - accelerating increase in the number of daily car trips

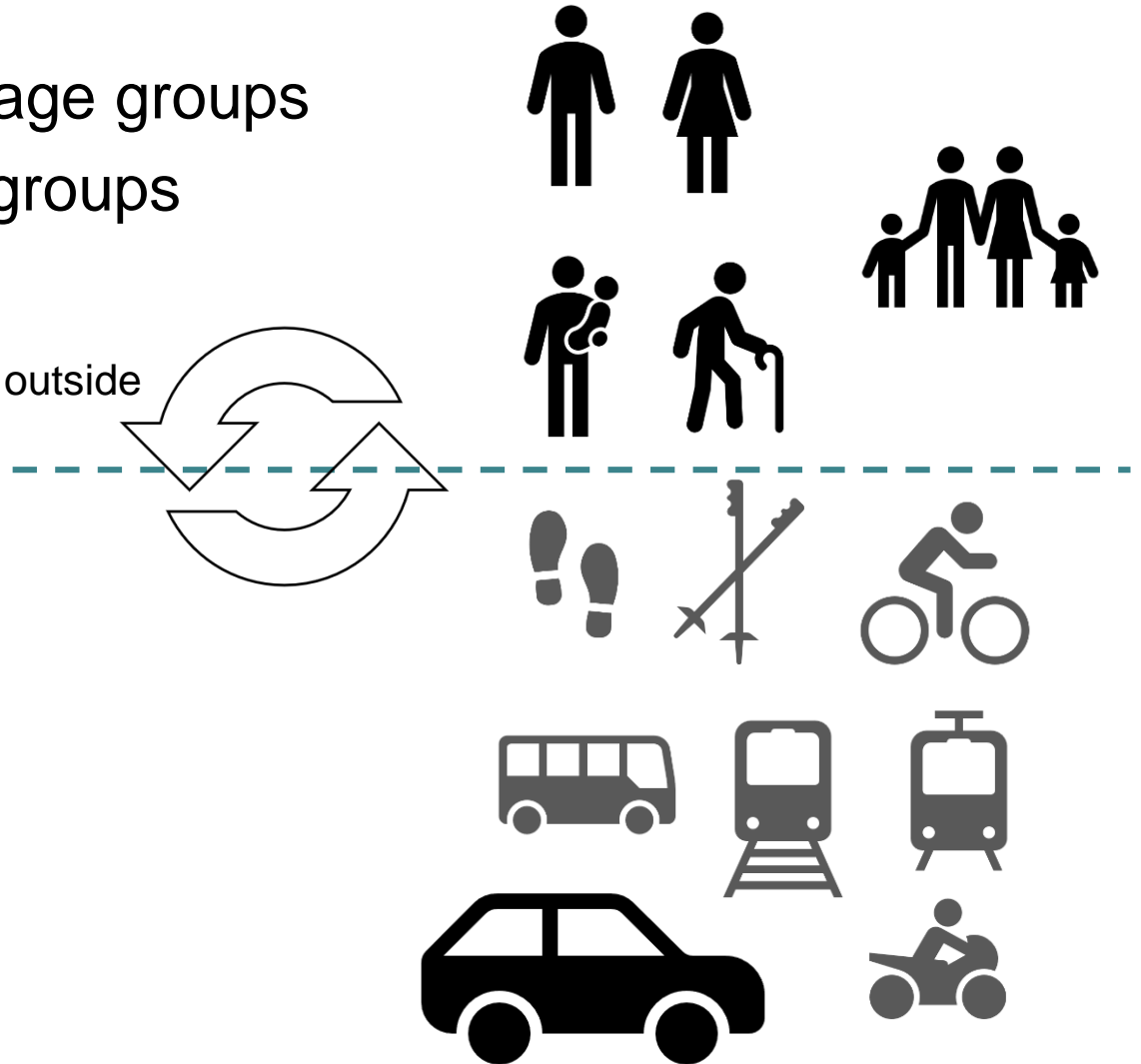
source: (Priya Uteng, 2011; TØI 2012 faktaark; TØI report 1477/2016)

- Old age \neq car-dependency. = **HABIT FORMATION**

TRAVEL BEHAVIOUR..DIFFERENCES

PERSIST ON:

- Av number of trips per age groups
- Trip purposes per age groups
- Trip length
- Trip timings - Rush hour vs. outside
- Trip durations
- Modal split
- Preferences
- Attitudes
- Acceptability etc. etc.



Article 1: The role of life events and context in type of car share uptake: Comparing users of peer-to-peer and cooperative programs in Oslo, Norway

Tanu Priya Uteng, Tom Erik Julsrud and Cyriac George

TRD special issue on Users and Innovations



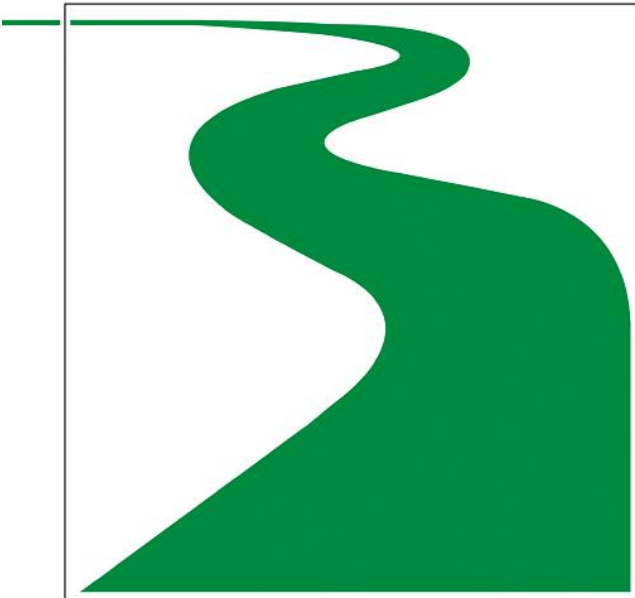
Volume 65, December 2018

ISSN 1361-9209

TRANSPORTATION RESEARCH



AN INTERNATIONAL JOURNAL

Part D: Transport and Environment



Editors-in-Chief: Jason Cao and Robert Noland

Life-stages and decision to shift to car sharing

| | | Components | | |
|---|--|------------|------------|---------|
| | | CHILDREN | RELOCATION | LEISURE |
| Birth of my/our child (not first) |  | 0,775 | | |
| Birth of my/our first child | | 0,748 | | |
| Child in household began day care, kindergarten or school | | 0,685 | | |
| Relocated to my current residence |  | | 0,738 | |
| Moved in with partner or roommate(s) | | | 0,714 | |
| Began studying | | | 0,503 | |
| Changed jobs | | 0,426 | | |
| I or someone in my household began a leisure activity that requires transport | | | | 0,780 |
| Moved out from a residence with partner or roommates | | | | 0,428 |

Principal Component Analysis. Factor loadings. Rotated and sorted component matrix (Note: Factor scores below 0.4 are not included)

Logistic regression for use of car sharing scheme. (Bilkollektivet =1)

| | B | Wald | Sig | Exp (B) |
|---------------------------------|----------|--------|-------|---------|
| Life events (importance) | | | | |
| LE 1-Children | 0,352 | 16,719 | 0,000 | 1,423 |
| LE2- Relocate | -0,297 | 17,429 | 0,000 | 0,743 |
| LE3- Leisure | -0,067 | 1,025 | 0,311 | 0,935 |
| Motives | | | | |
| Inclusive | 0,338 | 51,907 | 0,000 | 1,402 |
| Practicality | 0,132 | 10,443 | 0,001 | 1,142 |
| Environmental | 0,097 | 5,827 | 0,016 | 1,102 |
| Cost saving | -0,168 | 12,004 | 0,001 | 0,846 |
| Car sharing Identity | 0,087 | 4,203 | 0,040 | 1,091 |
| Car identity | -0,119 | 8,851 | 0,003 | 0,888 |
| Context | | | | |
| PT distance (neg) | 0,056 | 0,207 | 0,649 | 1,058 |
| Parking access | -0,148 | 20,017 | 0,000 | 0,863 |
| Car owner history | | | | |
| Dont have, but previously owner | -0,176 | 1,041 | 0,308 | 0,838 |
| Have car now and previous owner | -1,055 | 24,378 | 0,000 | 0,348 |
| Demography | | | | |
| Gender | 0,026 | 0,032 | 0,857 | 1,026 |
| Age | 0,019 | 6,582 | 0,010 | 1,019 |
| Education | 0,417 | 17,503 | 0,000 | 1,517 |
| Income (household) | 0,234 | 17,732 | 0,000 | 1,264 |
| Constant | -2,419 | 11,626 | 0,001 | 0,089 |
| Model summary | | | | |
| n | 2856,000 | | | |
| -2LL | 1422,456 | | | |
| Nagelkerke R square | 0,361 | | | |

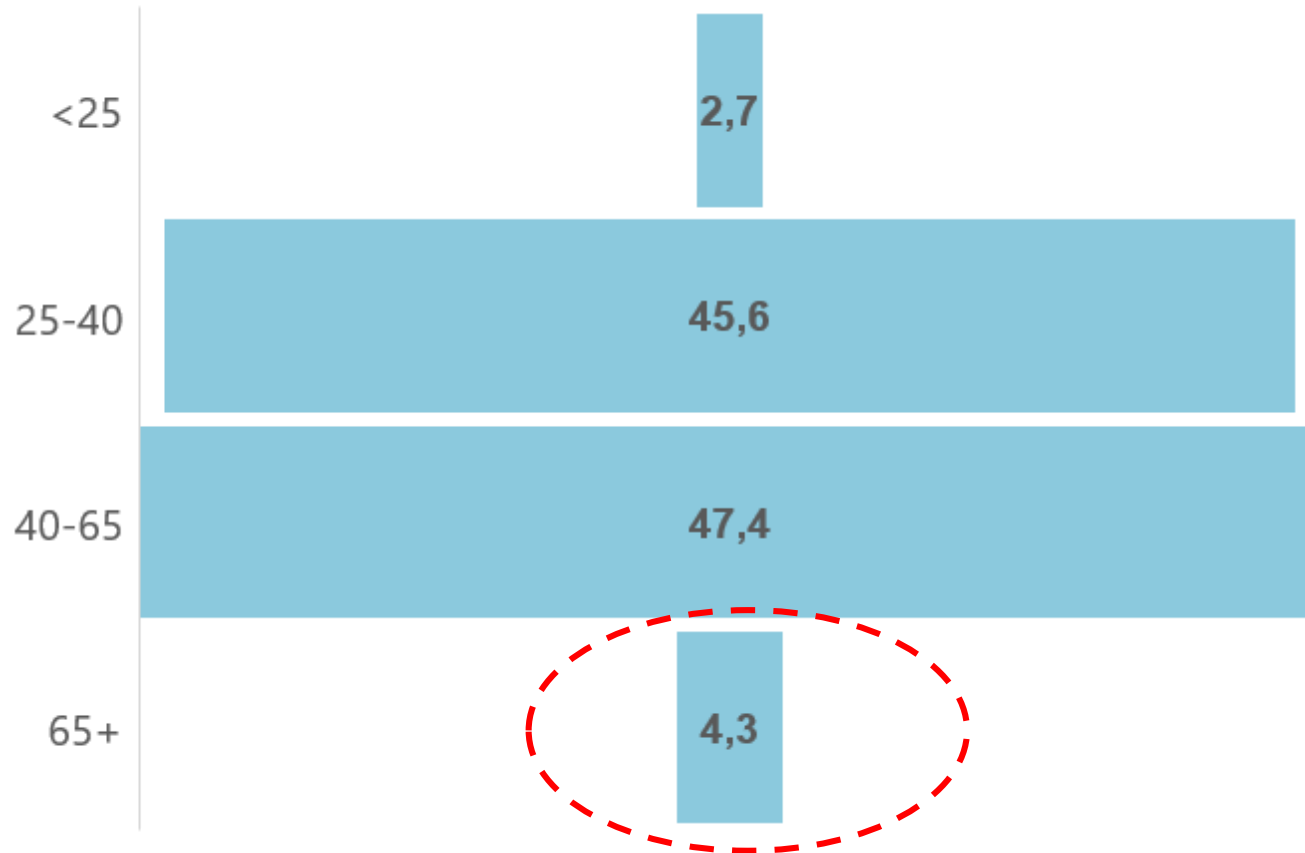
- Preference for BK increases with *age*
- Difficult to comment on *Gender* as there are *more men* in both types of car sharing schemes.
- Share being even higher for Nabobil.

CAR SHARING POTENTIALS

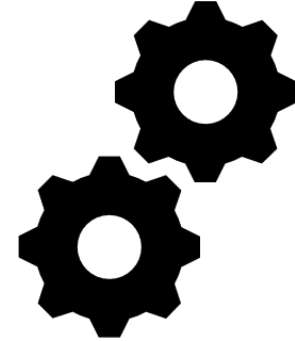
- University crowd <25
- 'Young-kids' stage 25-40
- Independent / 'low family-responsibility' stage 40-65
- Elderly 65+



Population distribution in the sample (%)



ACTIVE AGEING, DENSE RESIDENTIAL AREAS & DAILY MOBILITY

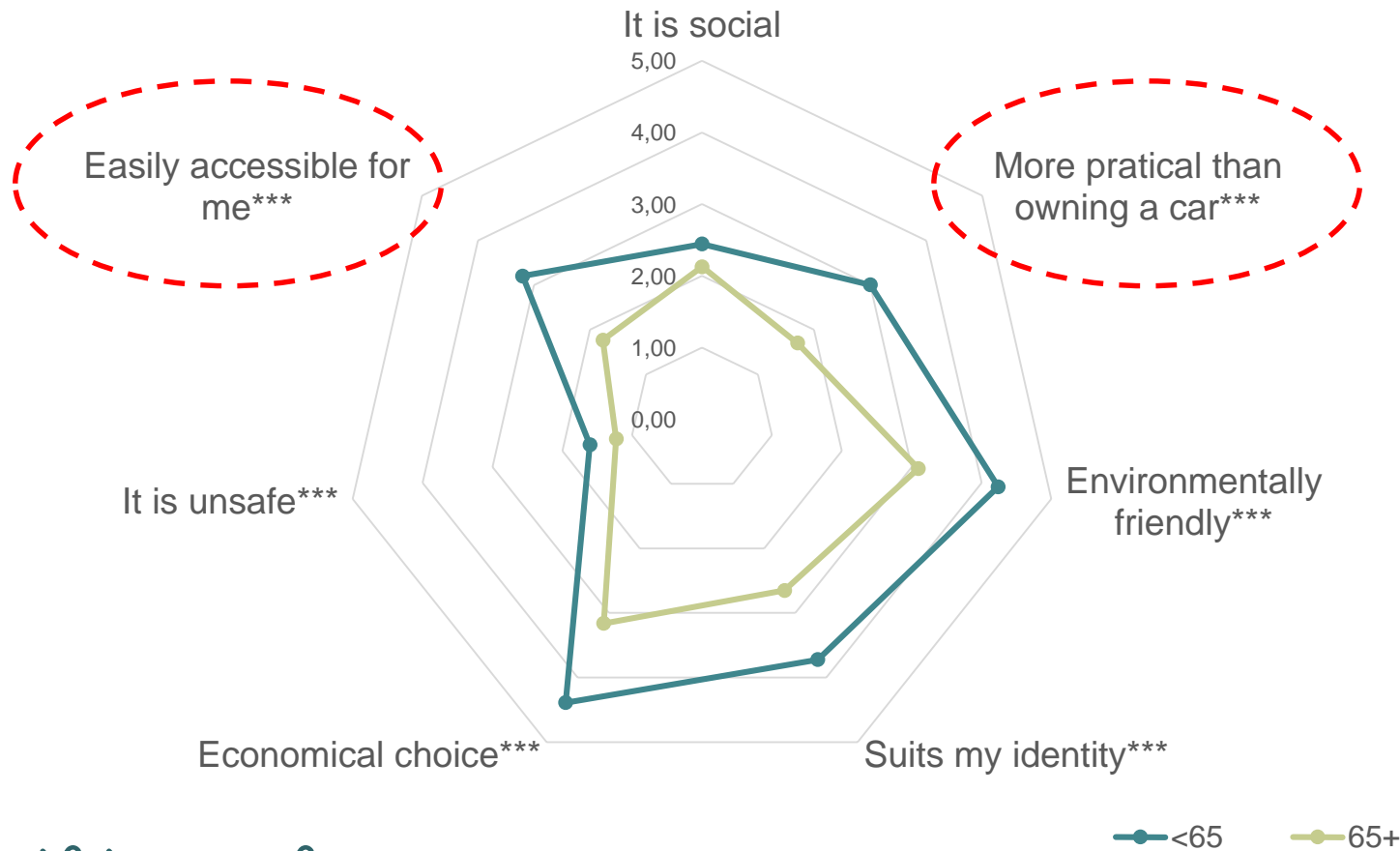


1. *Spatial* planning
2. Increase in *high rise apartments* near *transit nodes*, urban centers etc.
3. A parallel development - a vast majority of the elderly population, *65+*
RELOCATING
4. *National level policy* on Active Ageing

65+ : The ignored customer base?

| | Walking | Car | PT |
|--------------------|----------------|------------|-------------|
| Daily shopping | Green | Green | |
| Heavy shopping | | Green | |
| Leisure activities | Green | Green | Green |
| Visit friends | | Green | Light Green |
| Weekend trips | | Green | |

65+ : Meanings attached to car sharing

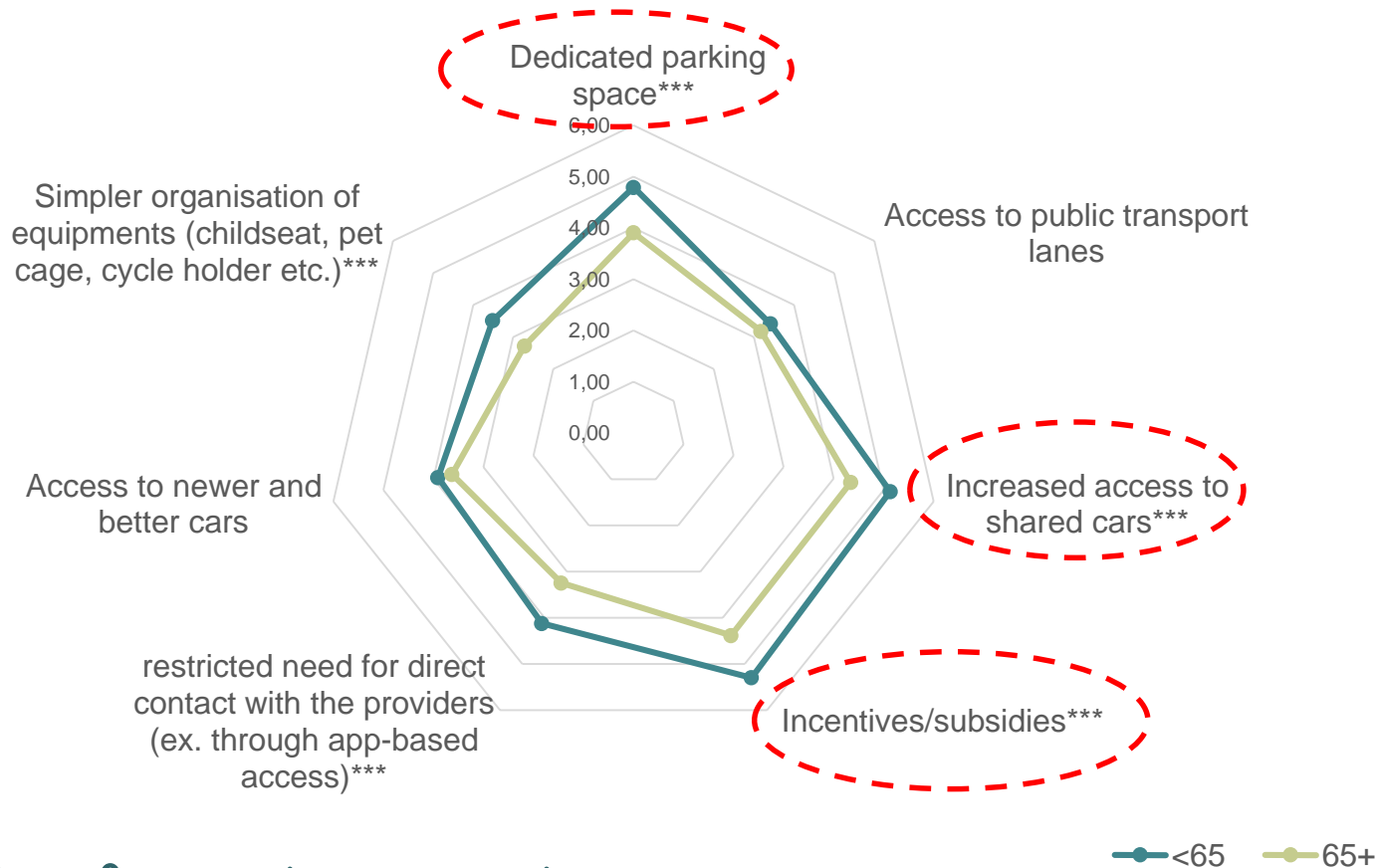


■ Identifying performance gaps

scored on a scale of 1-7, 1=completely disagree, 7= completely agree.

***mean scores are significantly different for the two groups, $p < .001$.

65+ : Factors which might lead to an increased use of car sharing schemes



- Designing future interventions.
- Plotting differences over a period of time

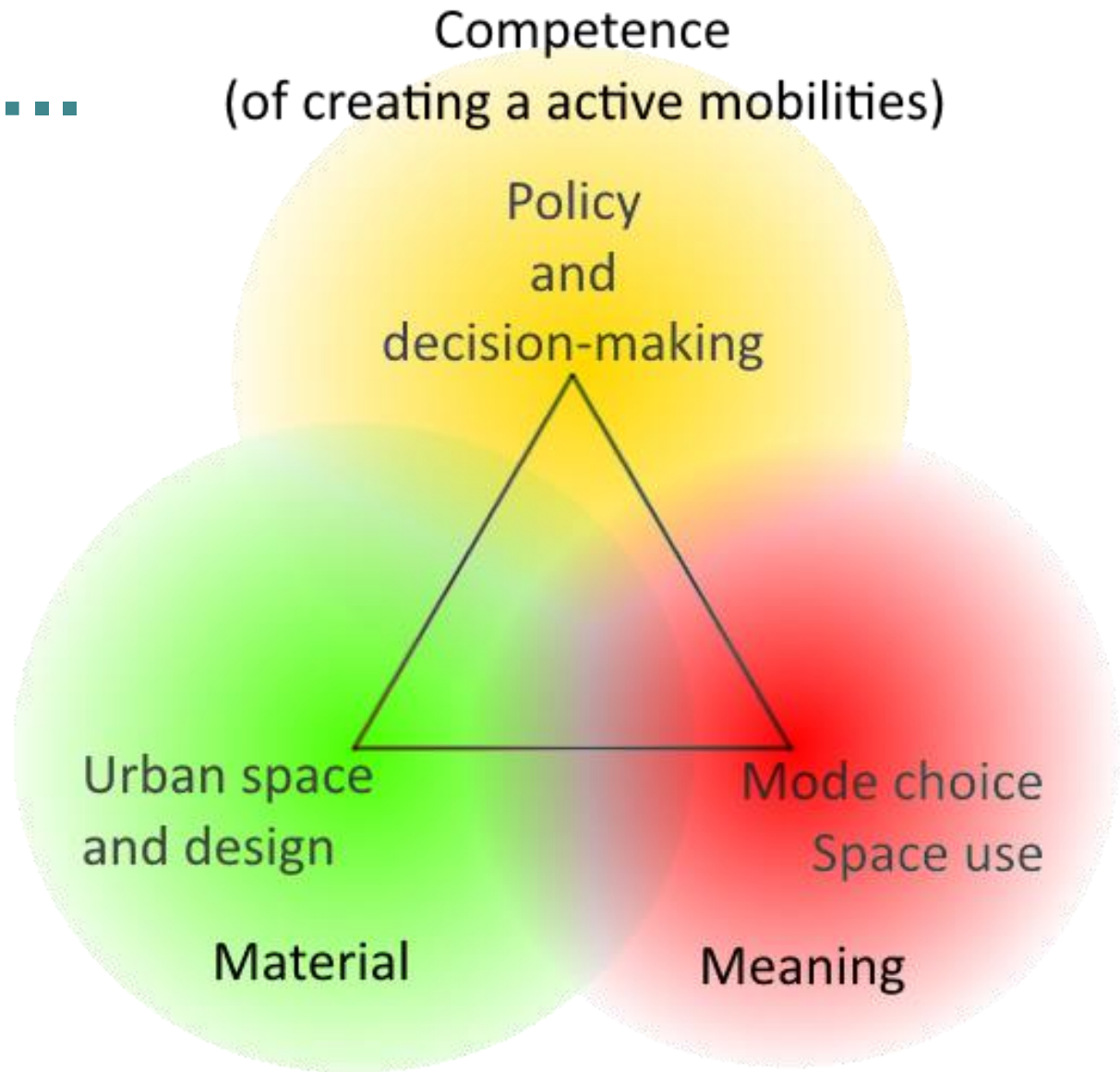
scored on a scale of 1-7, 1=to a lower extent, 7= to a greater extent.

***mean scores are significantly different for the two groups, $p < .001$.

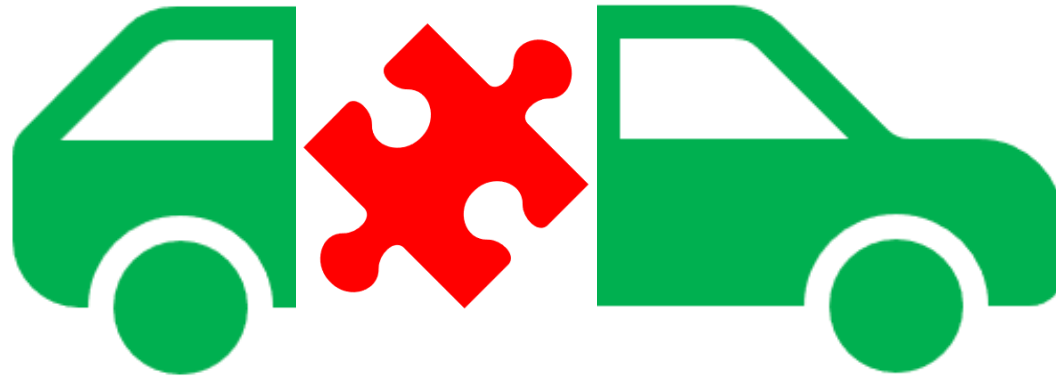
TARGETS

- Sewing offers to the mobility needs of different age-groups and life-stages – *for ex. Integrated solution with the housing blocks, child seat provision.*
- Differential pricing – *time, age, employment status, tax benefits etc.*
- Marketing – *University crowd <25; 'Young-kids' stage 25-40; Independent / 'low family-responsibility' stage 40-65; Elderly 65+*
- Location – *center vs. periphery*
- Reaching the clients – *app vs. Non-app, training, linking to elderly activity centers etc.*

Next steps.....



Source: <https://katsdekker.wordpress.com/2015/10/17/wrestling-mental-elephants/>



Thank you!!

Teripest



Shift

Sustainable Horizons in Future Transport