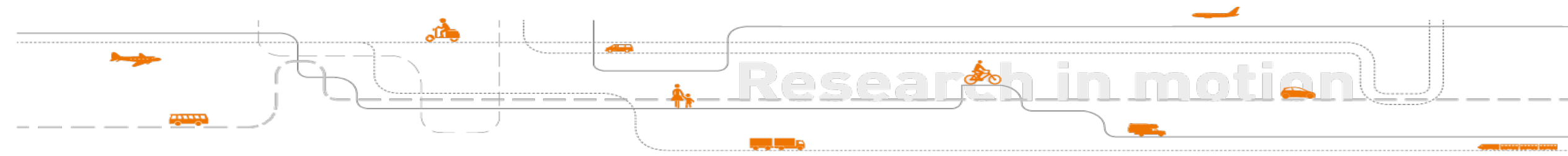


The effect of tailored information for the uptake of carsharing, evidence from a field experiment in Oslo

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Private cars are parked 95% of the time (Shoup, 2011)

and take up a lot of public space



NEED

shift from car ownership and car use



toward shared and public transport,
and active mobility (walk & cycle)
(EEA 2024)

Carsharing

is a membership-based self-service, short-term car access system with a network of vehicles in urban areas for which members pay by time and/or distance (Millard-Ball et al., 2005)


...can offer a solution to both traffic problems and the need for parking space in urban areas
(Ortega Hortelano, 2022)



- provide easy & affordable car access to those who need it occasionally (Shaheen and Cohen 2007, Nenseth 2018)
- reduce cars on the street, car usage, car ownership, congestion and emissions (Kent and Dowling 2013), (Khan & Machemehl, 2017), (Chen & Kockelman, 2016)
- make mobility more efficient and economically rational: fewer cars & lower fixed costs (Baptista et.al. 2014, Frenken 2017)

Barriers to carsharing

- **Social norm:** car ownership provide status
- **Status-quo:** car ownership is often the default option
- **Sunk cost:** car owners underestimate cost of additional driven distance (Arkes & Blumer, 1985)
- **Inaccurate beliefs:**
 - underestimation costs of ownership (Andor et.al. 2020) (Gossling et al.2022)
 - only compare operational costs of own car with cost of carsharing
- **Imperfect information:**
 - 1/3 Norwegians did not know what carsharing was (Nenseth, 2019)
 - Don't know which services are available/convenient



If carsharing is economically more efficient than owning a car for many, why aren't we all carsharing already?

Research Question

Can tailored information stimulate the uptake of carsharing for car owners?

What we did

- Carsharing calculator to show costs and benefits of carsharing vs car ownership
- Test the effect of information provision on carsharing uptake with RCT field



What we found

Average treatment effect of 15%, about 400 extra new members in 6 months



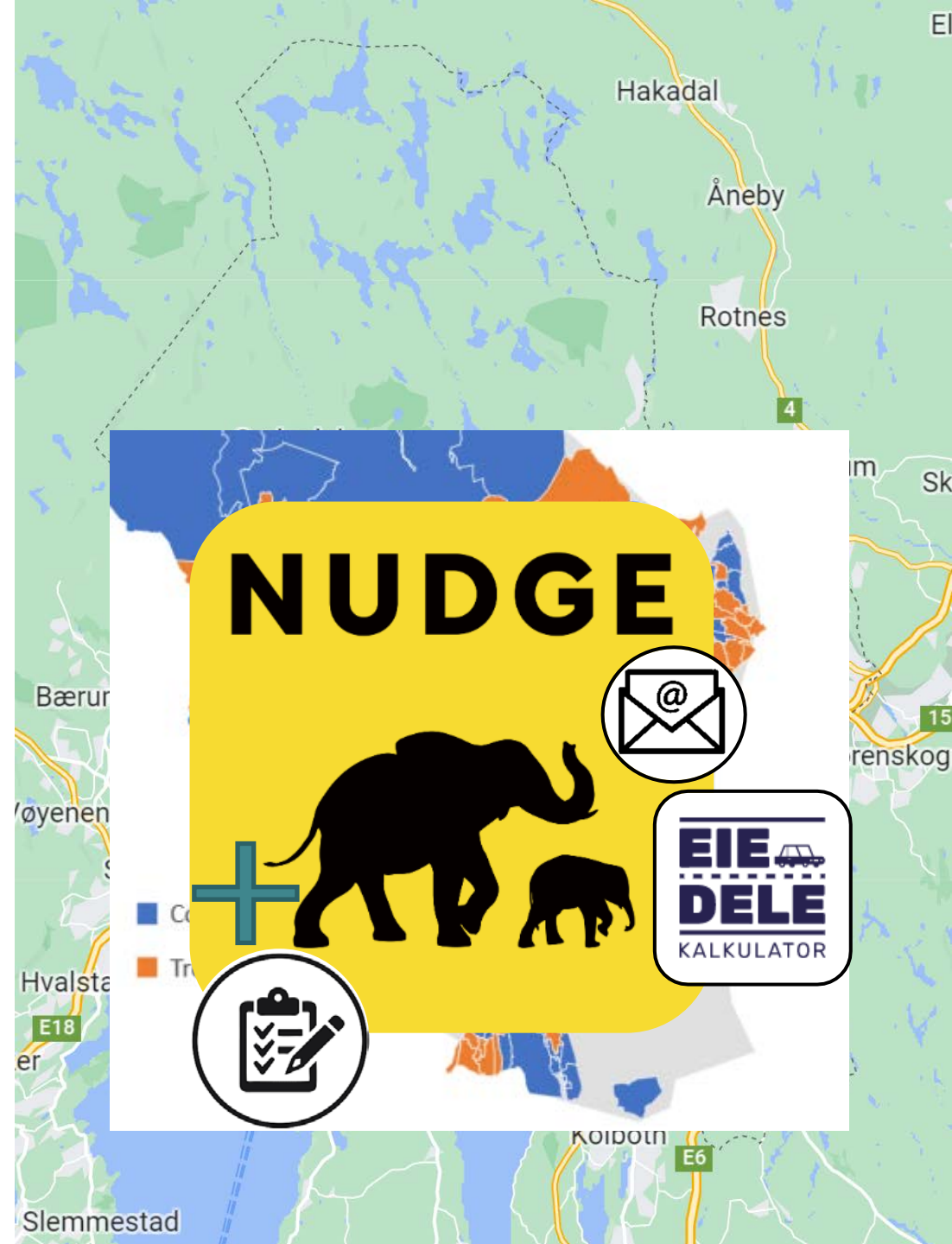
Field experiment



AEA RCT Registry

The American Economic Association's registry for randomized controlled trials

- **Target population:** people with high marginal (individual and social) gain of switching to carsharing: ~46 000 car owners in Oslo with old and under-used car (diesel & gasoline)
- **Target behavior:** start using carsharing (switching)
- **Randomization:** postcode level
- **Stratification:** existing carsharing member
- **Treatment:** e-mail with information + survey to ~ 20 000 car owners
- **Information provision:** carsharing calculator
- **Outcome variable:** new carsharing members per month per postcode (obj. data)



The website



Min bil i

Tast inn registreringsnummer
Klikk på den røde infoboblen hvis du lurer på noe.

AA 00000

[jeg husker ikke/har ikke bil/har en ny bil](#)

< Forrige

Neste >

Bruk av bilen i

Velg hvilke typer turer du trenger bil til (årlig eller månedlig) og som ikke kan erstattes med andre transportmidler. Turers tidsbruk reflekterer tiden du trenger bilen til disposisjon, ikke bare kjøretiden. For å justere gjennomsnittlig turlengde, klikk på pilene til høyre.

< Forrige

Neste >

Hvor mange ganger i **året** trenger du bil for...

en uke? (f.eks. ferietur) 0 10 ▼

to dager? (f.eks. helgetur) 0 52 ▼

En tur består typisk av følgende. (Du kan endre tallene ved å klikke på de)

Avstand (km)

Hvor mange ganger i **måneden** trenger du bil for...

mindre enn 2 timer? (f.eks. korte ærend) 0 31

mellom 2 og 6 timer? (f.eks. lengre ærend) 0 31

over 6 timer? (f.eks. dagstur, til/fra jobb) 0 31



Resultat

Ved å bytte til bildeling kan du årlig **spare**



116 641 kr.

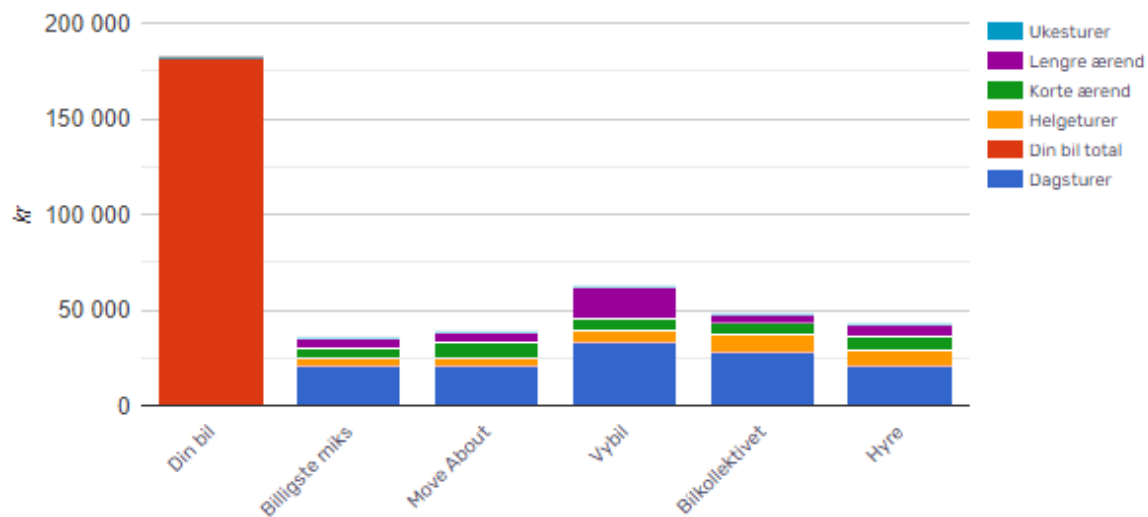
For disse pengene kan du kjøpe 5.8
elsykler

Her er noen av bildelingselskapene i Oslo som kan spare deg penger. Klikk på lenkene



Kostnader per år

Du kan spare **146 774 kr i året**





Results

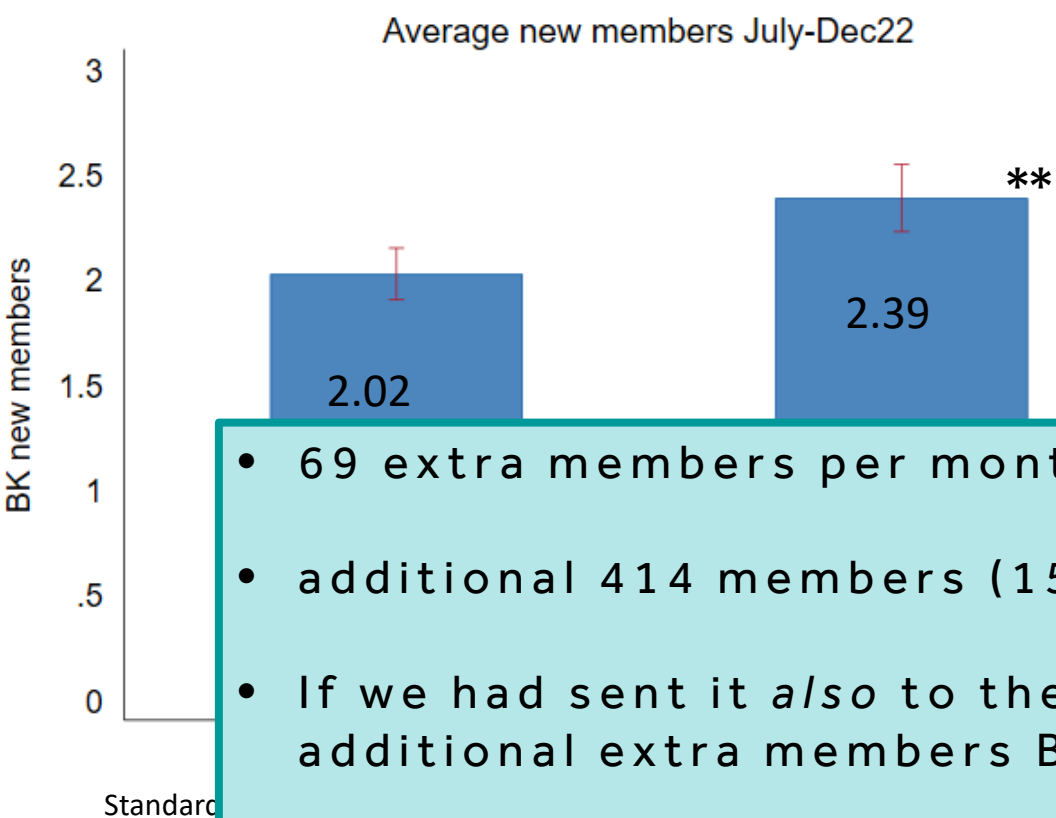
Balanced sample

Table 1: Summary statistics at postcode-level for control and treatment group with p-values from hypothesis test t-test. Statistics provided by SSB and by Bilkollektivet in 2021.

Variables	Control	Treatment	p-value
	Mean (sd)	Mean (sd)	
Population	1,260 (617)	1,338 (714)	0.239
Number of car owners	284 (165)	300 (182)	0.341
Number of cars	331 (199)	350 (216)	0.344
Number of electric cars	34.7 (27.4)	37.1 (28.5)	0.373
Number of diesel/gasoline cars older than 4 years	231 (131)	243 (145)	0.365
Carsharing users BK in 2021*	30.6 (31.7)	35.8 (42.5)	0.161
N	215	192	

*Number of active users in July 2021. Two postcodes from the treatment group and one from the control are missing as users in these postcodes were zero then.

New members per month per postcode



DID: New members	
Treat*Post	0.332*
	(0.188)
Treat	0.029
	(0.025)
Post (Jul-Dec22)	1.837***
	(0.111)
Constant	0.189***

- 69 extra members per month in 192 postcodes
- additional 414 members (15%) over 6 months
- If we had sent it *a/so* to the control group, we would have had 450 additional extra members BUT no knowledge about the effect size

ATE=0.36 members per month/postcode

Discussion and Conclusion



Strengths

- (Pre-registered) RCT: strongest and most reliable evidence
 - information provision $\xrightarrow{\text{caused}}$ an uptake in carsharing
- Successful randomization T&C groups are balanced
- Carsharing company did not affect control or treatment postcodes differently
- Carsharing calculator useful tool for both businesses, consumers and policymakers

Weaknesses

- We look at different post-treatment periods for robustness. Results are not completely robust
- No individual level data, only aggregated at the postcode level
- May be some spillover due to open information (underestimating the effect)
- We only got data from 1 of the 4 carsharing companies (underestimating the effect)

Conclusion

- Tailored information can stimulate the uptake of carsharing
- The effect of the nudge is a **statistically** and **economically** significant & generated 400 new members (15%)
- Replication of this study is highly encouraged as the nudge could be **context** dependent
- Scalable and relatively **low-cost** tool, useful for city governments wanting to stimulate carsharing and reduce the car fleet (supplement to other policies)
- Need to be careful to stimulate non-car owners/users as it could increase car use.

Study the effect on car ownership

Replication in Bergen (individual level data)



Future Research

THANKS
FOR THE ATTENTION

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