

Home office frequency and mobility tool ownership choices

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Home office SP

Work arrangement choice

	A	B
Co-ordinated presence	Free choice of the days	Coordinated (Monday and/or Friday)
Core hours	None	Regular working hours
Help-desk and training	Yes	No
Adjustment hourly wage	-10%	+10%
Additional costs (e.g. heating, electricity)	100% participation	No contribution
Hardware budget	50% of the necessary expenses	100% of the necessary expenses
Work from anywhere	Allowed	Not allowed
Desk sharing	No	Yes
Your choice:	<input checked="" type="radio"/>	<input type="radio"/>

Home office frequency choice

under your preferred work arrangement

0 days 1 day **2 days** 3 days 4 days 5+ days

Mobility tool ownership SP

Experiment 1

Please choose your preferred bundle of mobility tools based on the home office situation presented below.

For your information:

- The home office situation applies to all your subsequent choices on this page.
- Do not deselect a mobility tool simply because you do not like any of the three proposed alternatives.

Home office situation

Number of days you work from home: 2 days

Work from anywhere: allowed

Mobility tool ownership choice

<input type="checkbox"/> Car	<input type="checkbox"/> Regular bike	<input type="checkbox"/> Motorbike
<input type="checkbox"/> Car sharing	<input type="checkbox"/> E-Bike	<input type="checkbox"/> Public transport

Choice of preferred alternative

Only if car and/or car sharing and/or public transport has been selected

Car

	A	B	C
Car type	Luxury or sports car	Small car	Medium to large car
Fuel type	Electric	Diesel	Diesel
Fixed cost (annual)	2243 CHF/a	3803 CHF/a	5855 CHF/a
Per km cost	1.23 CHF/km	0.82 CHF/km	1.25 CHF/km
Your choice:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Public transport

	A	B	C
Subscription type	Regional season ticket	Regional season ticket	HT
Class	2	1	
Fixed cost (annual)	547 CHF/a	931 CHF/a	240 CHF/a
Cost for additional zone	28 CHF/Zone	88 CHF/Zone	
Your choice:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

1 Introduction

Home office is the lasting legacy of the pandemic. This study explores the preferences for different work from home (WFH) arrangements and scrutinizes their implications for mobility tool ownership (MTO). Together with alternative daily activity chains the expected shift in transport demand can be simulated under various hybrid work scenarios thereby supporting strategic decision making.

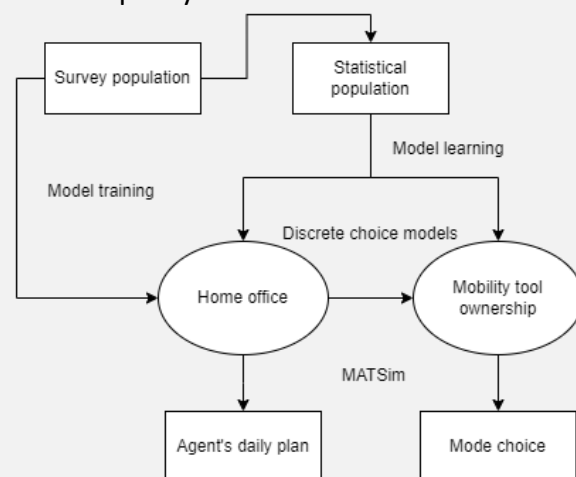
2 Methods

Discrete choice modeling:

- Hybrid choice models: Individuals choose the alternative (e.g., home office work arrangement, mobility tool bundle) which yields the highest utility.
- Utility is a function of alternative-specific attributes (e.g., whether or not work from anywhere is allowed, the car type, its fixed cost, its fuel, etc.) and socioeconomic variables.
- We account for random taste heterogeneity: Utility weights are distributed over population.
- We control for home office feasibility which will be modeled as a latent (i.e., unobserved) variable, and determines which home office frequencies are considered (latent class Manski model).
- We control for the correlation between mobility tools in a chosen bundle (e.g., people who use the bike regularly are more likely to have a PT subscription).
- Multivariate probit or cross-nested logit model.

MATSim integration:

- Multi-agent transport simulation (software developed at ETH Zurich and TU Berlin).
- Utility weights from DCMs can be used to simulate realistic behavior of the agents.
- Models transport demand under general equilibrium conditions and micro-founded.
- Allows policymakers to understand shifts in transport behavior under various (home office) scenarios.



- WFH is hypothesized to impact MTO which in turn affects mode choice (in the eqasim pipeline).
- The home office population has different daily plans which interact with the mode choice.
- These interactions will be simulated, scored and updated until no individual has an incentive to deviate from its strategy.

3 Findings from the pre-test

- Work arrangement attributes are substantial impacts, are highly significant and have the expected signs.
- Work arrangement attributes do not impact home office frequency.
- A priori preference for number of days working from home. People only adjust if marginal (dis-) utility outweighs the marginal cost (benefit) provided by the arrangement.
- Perceived personal suitability is an important factor (especially when going fully remote).
- Adjustments to the experimental design and survey instruments as envisioned on the left.