Multimodality in the Swiss New Normal

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1 Introduction

The pandemic has fueled a shift towards flexible hybrid work arrangements. Work from home (WFH) can be seen as a policy lever with the potential to smooth peak traffic volumes with side effects such as reduced GHG emissions. This has considerable implications for transport planners since the capacity of critical infrastructure needs to match peak loads. However, the preferences for WFH in this new era are not well understood. We therefore propose a framework in which we control for home office feasibility, model rebalancing of individuals' mobility tool portfolio as well as gauge resulting transport demand implications at the systemic level.

2 Survey Instruments

Wave I	Wave II	Wave III

Structure

- Socio-economic, residential & dwelling characteristics, work activities & context, mobility tools, WFH feasibility, WFH RP, key work policy attributes
- Refined RP questions adding to Wave I
- Linked stated preference experiments (WFH & MTO)

Goal

- Describing the status quo (share of population WFH, perceived productivity, challenges and benefits with WFH, change in activity patterns due to WFH, ...)
- RP data to test and calibrate WFH model
- Refinement of survey questions -> reduce response burden

- Availability / consideration of mobility tools
- Recruitment for Wave III
- Reduction of response burden

- Understanding the sensitivity to attributes characterizing the hybrid work arrangement (e.g. coordination of physical interaction, degree of flexibility, co-working spaces, financial implications)

Outlook: MATSim Integration

Scenario generation

- Micro foundation
- DCM
- Personal preferences
- Individual characteristics

Simulation

- Macro implications
- Interaction & reaction
- Systemic environment (feedback)

3 Modeling WFH

- Random utility model: Microeconomic framework to reveal preference relations
- We incorporate home office feasibility via a latent variable (ICLV)
- Ordered logit latent class model where individuals choose the number of days working from home
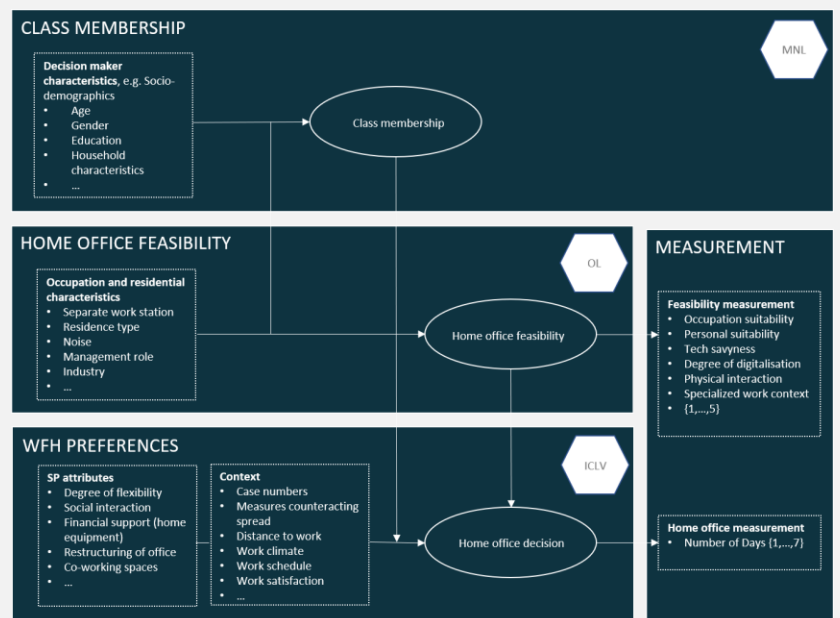
Proposed DCM framework incorporating (unobserved, e.g. latent) home office feasibility.

4 Conclusion and expected impact

- WFH can be seen as a policy lever to smooth peak traffic loads and reduce mileage travelled.
- To understand the overall demand implications we propose a WFH discrete choice model, accounting for home office feasibility as well as individual preferences.
- The model allows us to elicit who CAN and who WILL be working from home given different hybrid work arrangements.
- We further link the WFH model to mobility tool portfolio choices (via another SP experiment) and gauge the resulting demand implications at the systemic level.
- The research will inform policy makers about the expected new transport equilibrium and in how far WFH serves as a tool to break peak traffic counts as well as tackle concomitant effects such GHG emissions.

References

Multimodality in the Swiss New Normal. (n.d.). Retrieved April 29, 2022, from https://csfm.ethz.ch/en/research/projects/multimodality.html