

# EXTENDED ABSTRACT: EXPLORING EVERYDAY MOBILITY BY USE OF INTERVENTIONS AIMED AT INCENTIVISING GREENER CHOICES

## INTRODUCTION

It has been argued that the ongoing smart mobility transition will not lead to a more environmental sustainable mobility if the new services and systems are still largely based on individual transport by car. However, it will be a difficult task to create services that are as quick and comfortable as on-demand door-to-door services built on individual vehicles. To ensure that these new mobility solutions support sustainable changes in travelling habits economic incentives and regulations will most likely be needed (Doherty et al, 2018; Pangbourne et al, 2018; Docherty, 2018). We need a better understanding of daily mobility practices, motivations and barriers for change, in order to design well-working mobility solutions and incentives.

## METHOD

This paper describes the results from the Living Lab “Future playing rules for everyday travel”. This form of living lab uses design methodology to try out e.g. a possible future scenario with different policies than today, and understand how it can influence people’s lives. This is done by imposing interventions in the form of changes in the lives of the study’s participants. For “Future playing rules for everyday travel”, we recruited nine participants in seven households. These participants were introduced to three different economic incentives, designed to promote a more environmental sustainable transportation choices. The purpose of imposing the incentives is both to explore propensity to change, and to increase our understanding of which factors influence everyday mobility practices and the choice of travel options, including soft factors such as societal norms. The latter is also part of finding better pathways for our continued research.

## THE INTERVENTIONS

### 1. Making the costs of car ownership transparent.

The total yearly fixed and semi-fixed costs were estimated for each participants’ car. This cost was then turned into a cost per kilometre by dividing it with the number of kilometres the participant usually drives every year. Each trip was then measured using the application TravelVU, and the cost was displayed in the same app.

To incentivize driving less, the fixed costs of the car were then paid per kilometer actual driving. This means that if they completely refrained from driving, the cost of owning the car would be zero, with the research program covering the fixed costs. If the participant drove as usual, they would pay just as much as usual. If the participant drove more than usual, their cost would also be higher. Longer vacation trips by car were separated from daily driving, but still part of the car’s cost.

2. Discount on public transport during off-peak hours. The participants paid a basic fee for their monthly public transport card corresponding to half of the normal price. To that fee, we added a cost of 20 SEK per trip during rush hours (7.15-8.30 AM, and 4:15-5:30 PM), up to a “ceiling” corresponding to a normal travel card fee. The trips were logged using the TravelVU application.

3. Economic rewards for bicycling. This incentive meant that the participants were given a reward of 1 SEK/km for all bicycling, distances as measured in the travel monitoring app and reported by the participants. The reward was however limited to a “ceiling” of 400 SEK/month, and limited to any travel to a specified destination, as opposed to bicycling for recreation or exercise.

## RESULTS

Firstly, we have findings from participant interviews regarding their needs, perceptions and values, and why they did or did not change their practices. For example, the participants did not know the real cost of owning and driving a car, and indicated that they do not want to know, and do not really care as long as they can afford it. When the bicycle and public transport remunerations or costs “hit the ceiling” and did not pay off anymore, several participants suggested that this limited the incentive’s effect. This could for example be the result of participants being able to change their point of departure in one direction of their daily commute, but not the other.

Secondly, we use findings from quantitative data from the detailed logging of individual travel behaviors. These showed that longer vacation trips were the largest parts of travelling. It indicated a confirmation of the participants’ statements that they could change their departure time in one direction, but not the other. Further, a calculation based on the detailed travel logs showed that exactly the same trips could be done at the same or a similar cost using carpool and taxi, even though the participants mostly had older cars and free parking.

Thirdly, we collected results regarding our own experiences from carrying out the living lab interventions. Placing interventions in people’s daily lives led to learnings that required changes to the research setup. adaptation to faulty assumptions - people had much bigger variations than assumed. There were also complications regarding the logging software used.

## DISCUSSION AND CONCLUSIONS

Here we present a number of tentative conclusions and reframing of questions that can be input for policy makers or service providers, and also present opportunities for further research.

Not being aware of the real cost of car ownership means not questioning the car, and not comparing it with possible alternatives. Therefore, making the cost of car ownership more transparent may support modal changes.

For MaaS research - although MaaS presents opportunities, the physical and practical realities of infrastructure do not lose importance - snow removal, public transport capacity, functionality and availability are also questions that needs to be considered.

We identify “middle-sized flows”, such as frequent but not daily trips to shopping districts, recycling centres or recreation areas, as an opportunity for ride-sharing services, or for public transport on demand. There is need for further research on the opportunity to move people from peak hours to off-peak in public transport.

There is need for further research on opportunities to move people from peak hours to off-peak in public transport, and how such schemes can balance effectiveness with social equality.

## REFERENCES

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