Challenges and Results from Deploying the GoEco! Tracker App

The project GoEco! takes advantage of the wide availability of smartphones, in order to overcome the traditional awareness-raising approach used to foster sustainable mobility and exploit eco-feedback, social norms and peer pressure elements in an ICT-based motivation system. In particular, it uses a smartphone app to analyze how we can encourage people to engage in more sustainable mobility lifestyles.

This poster discusses the various challenges we faced when deploying GoEco! Tracker (an app using the Moves® fitness tracker to collect mobility measurements), and provides a summary of results obtained by one month of large scale testing within the GoEco! living lab performed in Switzerland, allowing us to collect baseline mobility data for the sample of voluntary participants of the GoEco! living lab.

Introduction

The present urban transportation system, mostly tailored for cars, has long shown its limitations [1]. Even though many alternative and effective transport modes are already available [2], they still tend to be neglected due to a deep-rooted car dependency [3]. How can we encourage people to engage in more sustainable mobility lifestyles, reducing use of the car? GoEco! tries to overcome the traditional awareness-raising approach and, building on recent research in social psychology and behavior studies, to take advantage of the wide availability of smartphone devices (cf. [3]). This poster discusses results from one month of large scale testing of the GoEco! Tracker app aimed at automatic mobility tracking, with a few hundred users within the GoEco! living lab performed in Zurich and Ticino.

Accuracy of Tracked Data

On average, we recorded 7.4 activities per user per day, of which 77.1% were actively validated by users (31’782 out of 42’993).

User Reports and Change Potential

As a form of feedback, users receive reports on their mobility behavior. Next to a detailed summary, we provide an analysis of the current mobility patterns with respect to possible improvements.

These possibilities for change are computed for systematic routes (e.g., home to work and back), as well as on a general level, i.e., for all routes a participant took. The figure above shows the possibility for change of a single user, who could travel more by public transport, and thus save energy.

Living Lab Challenges and Choices

Building GoEco! Tracker on top of the Moves® app guarantied a high tracking accuracy, availability on many devices, and low battery power consumption, at the cost of higher complexity (multiple apps) and privacy issues and communication delays (cf. [3]).

653 persons signed up for the living lab after a widespread marketing campaign in January 2016, 461 actually downloaded the app, and around 200 provided tracks during the whole baseline recording phase (4 weeks in March / April 2016).

Transport Mode Identification

As Moves® only provides mode identification for walking, running, cycling, and a general transport mode, we built our own classifier on top of Moves® data.

Expected Impact

The impact, which a system like GoEco! can have on energy demand and GHG emissions, is mostly determined by users who travel by car on a frequent basis. In our currently ongoing analysis, we found that many could realistically reduce the kilometers traveled by car between 20% and 50%, resulting in energy savings in the order of magnitude of multiple 10 kWh per user per week. Of course, many people have good reasons why they use the car, so it is yet to be seen if GoEco! manages to incentivize people enough to actually perform this behavior change. An overall assessment is mostly determined by the second study phase (Fall 2016), during which the full GoEco! app is deployed. In case this phase successfully manages to change mobility behavior, it would be required to make the app available to a wide part of the population, in order to have the desired overall energy savings effect.

References


Partners

Swiss Competence Center for Energy Research - Efficient Technologies and Systems for Mobility

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