

# The MoTiV project: Redefining the value of travel time for all modes and users

**James Armstrong, Policy Assistant**  
**European Cyclists Federation**  
**Dublin, June 2019**



# About MoTiV: project figures



- **European-wide exploration of “Mobility and Time Value”**  
How value of travel time is perceived and experienced across transport modes, generations, genders and cultures
- **30-month project:** Nov. 2017 – Apr. 2020
- **Overall funding:** ~2M EUR
- **Small consortium:** 7 partners
  - 3 academic institutions/research organisations (UNIZA, SK; Eurecat, ES; INESC-ID, PT)
  - 2 business partners (routeRANK, CH; CoReorient, FI)
  - 1 mobility consultancy organization (TIS.pt, PT)
  - 1 European-wide association (ECF, BE)and additional Linked Third Parties affiliated with ECF



Shift of focus ...

from quantity to quality



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

***“We need to rethink most or all of our key travel demand models. The present models – understandably enough – focus on the objectively measurable constraints of travel time and monetary cost, to the virtual exclusion of other relevant variables ” (Mokhtarian, Patricia L. 2018).***

# Valuing Mobility: the bigger picture



- **“Productive time” vs “Worthwhile time”?**
  - Quality of living is not only about “effective” and “productive” use of time
  - Extend “time and cost savings” objective with other relevant dimensions and indicators of value



- *What about the quality of travel?*
- *Shouldn't travel modes that serve other goals, such as physical and/or mental fitness also be valued?*
- *Why don't we value the enjoyment of travel in our models?*

# Motivation



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

**Value of Travel Time (VTT):** shift focus from “*what is currently measured*” to “*what is currently not (sufficiently) measured*”

- Are VTT models socially inclusive / fair?
  - Shall VTT models acknowledge what value of mobility means for children (e.g. safety, comfort factors)?
  - Gender, age, other demographics

MoTiV hopes to gather data on these questions, setting the ground for further research



# Valuing Mobility: individual viewpoint



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

An advertisement for the Woorti app. The background is a solid orange color with faint, light-colored play button icons scattered across it. In the top left corner, there is the Woorti logo featuring a cartoon fox character and the text 'woorti' and 'Make your journey worthwhile.'. In the top right corner, there is a language selector set to 'English', and social media icons for Facebook, Instagram, and Twitter, along with a hamburger menu icon. The main text on the left reads 'Did you make the best travel choice today?' in a large, white, bold font, followed by 'Download Woorti and discover your travel time.' in a smaller white font. Below this is a white button with the text 'DOWNLOAD THE APP'. In the center, there are two smartphone screens. The front screen shows the app's splash screen with the fox logo and the text 'woorti' and 'Make your journey worthwhile.'. The back screen shows the app's interface with a 'Route Planner' section, a 'Plan Your Trip' heading, input fields for 'Location' and 'Destination', a 'Plan' button, and two icons for 'Wild Trip' and 'Solo Trip'. Below these is a '30 mins' indicator and a 'SEARCH ROUTES' button. At the bottom center of the advertisement, there is a white circular icon containing a downward-pointing arrow.

Download the Woorti App: [www.woorti.com](http://www.woorti.com) (or Google 'Woorti')

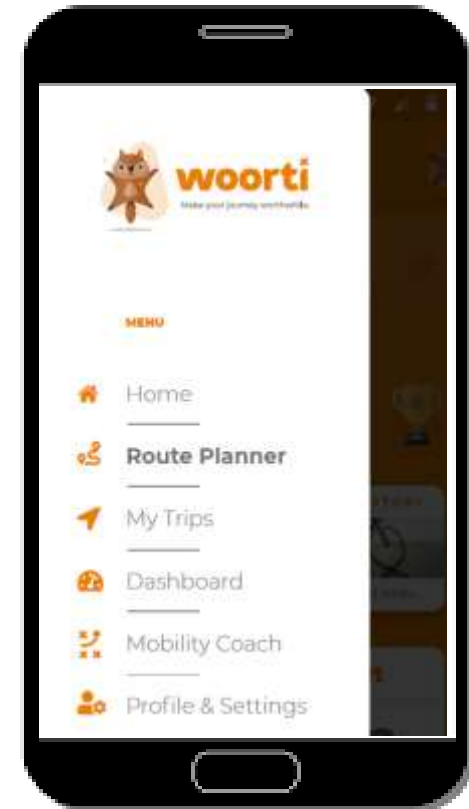
# Approach: smartphone-based data collection of travel experiences



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

- **Focus on the individual Travel Experience**
  - identifying “satisfiers/dissatisfiers” of worthwhile travel time
- **Smartphone-based data collection via the Woorti app**
- **Continuous collection of mobility choices/journeys**
  - smartphone-based sensing of mobility behaviour
  - traveler’s input on activities while travelling, travel time appreciation and underlying reasons
- **We ask you if your journey was worthwhile**
  - Along several metrics:





**Make your journey  
worthwhile:**

# ***Productivity***

Taking travel time to get things done, not only for work or study, but also personal things like managing home or family stuff...

**woorti**





**Make your journey  
worthwhile:**

## ***Mind & Pleasure***

Relaxing or having fun, taking travel time to do things like listening to music, resting or meditating, engaging in social media, observing...

**woorti<sup>★</sup>**



**Make your journey  
worthwhile:**

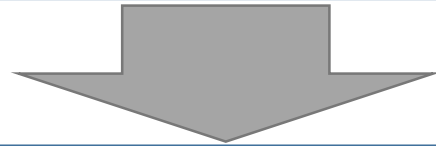
## ***Body & Health***

When you walk, cycle or maybe even run on your travels, you're contributing to your health and good look.

**woorti**

# Key contextual data to collect for the research

**Mobility Data: Mode and Trip Detection and Validation**



**Trip Purpose(s)**



**Travel Experience (for trip leg, including transfer/waiting locations)**



**1. Assessment of Worthwhile Travel Time**

**2. (Valuable) Activities carried out on the move**

**3. Factors contributing (+/-) to Worthwhile Travel Time Assessment**

# MoTiV Data Collection Campaigns (DCC)



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

- **Target:** Minimum 5.000 valid samples (active app use for minimum 2 weeks) from as many users from at least 10 EU countries
- **Obtain a balanced sample** in terms of:
  - **Age:** young adults (16-24 yr), adults group 1 (25-49 yr), adults group 2 (50-64 yr), older population (65+).
  - **Sex (M/F) and Gender Identity**
  - **Transport modes:** walking, cycling, public transport, car use, shared mobility, long-distance train, plane.
  - **Residence:** urban/sub-urban, rural.
  - **Socio-economic and other demographic indicators**



Release of **Open Dataset** at the end of the project

# Woorti design challenges



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project



Fig. 2. Introducing the three Woorti flying squirrels for each component of worthwhile time at onboarding: productivity, enjoyment and fitness.



Fig. 3. The Woorti "My Trips" view displaying daily detected trips.



Fig. 4. Validating trips, trip legs and automatically-detected transport modes.



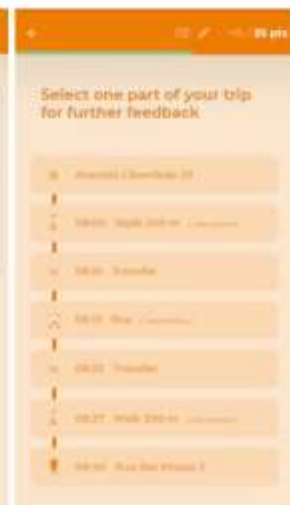
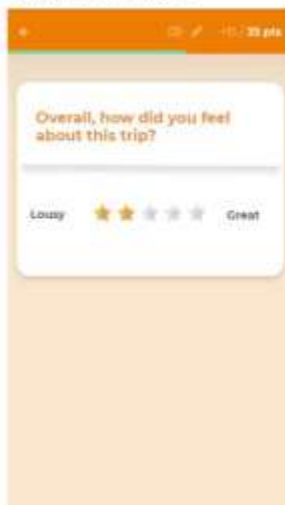
Fig. 5. Asking preferred modes of transport at the onboarding stage, consisting of a long list organized by transport mode category.



Fig. 6. Validating detected transport mode at trip leg level, modes organized under tabbed categories.



Fig. 7. Specifying trip purpose(s) and related critical variables influencing the experience (time constraints and trip frequency).



**Reference:**  
Cornet, Y, Barradale, M. J., Bernardino, J. & Lugano G. (2019) Worthwhile Travel Time: Design Challenges of Capturing the User Experience by Smartphone. SCSP 2019.

# Woorti design challenges



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

## Need to Balance:

Technical considerations/limitations

- Users have different hardware and software
- Internet connection cannot be guaranteed
- Battery consumption

Vs



# Woorti design challenges



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

## Need to Balance:

User friendliness

- User Interface optimisation
- Easy trip validation
- User incentives
- Translation into 11 languages

Vs



# Woorti design challenges



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

## Need to Balance:

Research priorities

- Collect enough & useful data
- Gather data over a (relatively) long period of time
- Ensure demographic representativeness
- Ensure data accuracy

Vs





# Conclusions: exploring new approaches



[www.motivproject.eu](http://www.motivproject.eu)

@MoTiV\_Project

## MoTiV expected contribution and limitations

- Holistic conceptual model of VTT
- EU-wide data collection -> open dataset
- Policy and business recommendations
- Exploratory research, without aim of statistical significance



**woorti**

Make your journey worthwhile.

## Contact us:

James Armstrong

[j.armstrong@ecf.com](mailto:j.armstrong@ecf.com)

[www.motivproject.eu](http://www.motivproject.eu)

Any Questions?



Horizon 2020  
European Union Funding  
for Research and Innovation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 770145

# MOTiV