IVe Institut für Verkehrswesen

DAVeMoS

BMK Endowed Research Group for Digitalisation and Automation in the Transport and Mobility System

Newsletter

Newsletter Vol. 01/2024

1. Making Mobility Hub Smarter

In this editorial, I would like to draw your attention to the final report of our recently completed Mobility Hubs project, which was funded via the ERANET JPI Urban Europe scheme.

Mobility hubs, also known as mobility stations, have been hailed by many researchers and practitioners as the ultimate solution for first and last mile trips. In response to this, many different forms of mobility hubs are being developed and implemented in various major cities in Europe and beyond. Recently, the implementation spread to small towns in rural areas. While the concept is popular and logical, there is still much to be done in developing the technology. What should a mobility hub look like? Can mobility hubs act as game changers towards the development of inclusive and sustainable urban mobility and accessibility in European cities? How can mobility hubs be created together with end-users, businesses and governments?

Over the past three years, the SmartHubs project team (www.smartmobilityhubs.eu), comprising researchers, mobility organisations and stakeholders from six European countries, has dedicated itself to answering these questions. We have investigated the various dimensions of mobility hubs with the goal of assessing whether mobility hubs that put their end-user first can act as game changers towards urban mobility and accessibility. Our research was conducted in living labs in Brussels, Belgium; Munich, Germany; Rotterdam and The Hague, the Netherlands; and Vienna, Austria. It involved almost 3,000 residents in experiments, co-creation and co-appraisal sessions and a large-scale survey. Synthesising the findings from more than 25 deliverables, the SmartHub project has suggested 10 recommendations to make the mobility hub smarter.

DAVeMoS is an Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (*Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie*, BMK)'s Endowed Research Group with a mission to strengthen the competitiveness and knowledge building in the field of digitalisation and automation in the transport and mobility system at local, regional, national, and the EU levels.

Read more about DAVeMoS at:
www.davemos.online

Head of the group:
Univ. Prof. Dr. Yusak Susilo
yusak.susilo@boku.ac.at

Hosted by BOKU Institute for Transport Studies: www.boku.ac.at/en/rali/verkehr

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Understanding the position and the practice of mobility hubs within our existing strategic planning practice

1. It is important to understand the holistic performance (e.g. how smart) is our existing Mobility hubs implementation. SmartHubs' integration ladder can be used as a framework to measure this.

2. The implementation of mobility hubs should be integrated in the local SUMP (Sustainable Urban Mobility Plan). Integrate our mobility hubs into the local SUMP facilitates the development of inclusive, democratic and effective solutions. This process can be supported by the findings of the SmartHubs project, as well as the tools that can be found in here: https://www.smartmobilityhubs.eu/smarthubs-tool

Physical Integration

3. Selection of the appropriate location for mobility hubs is crucial for promoting physical integration. The location and services offered by mobility hubs must be based on their specific purpose and goals.

4. Carefully consider placemaking as part of hub design. Identify positive and negative effects for different mobility hub users and local residents.

5. Inclusive mobility hubs consider the specific needs of vulnerable to exclusion groups. Currently people with physical impairments and low digital skills rarely use shared mobility services because the services are not adapted to their needs.

Democratic Integration

6. A good participation process has a clear goal, is transparent and allows active debate ! Organisers of participation processes should communicate the context, structure and scope of the process and actively include different groups of people, including the ones with different interests.

7. Use participatory assessment methods to increase the quality of decision-making processes. A participatory assessment process involves different stakeholders and collects their preferences in a structured and transparent manner.

8. Co-design enables the design of inclusive, context-sensitive mobility hubs. Co-design processes and tools facilitate making decisions that meet the needs of all stakeholders, including vulnerable people.

Digital Integration

9. Provide training and assistance for citizens with limited digital mobility skills. Initiate training sessions and assistance for citizens with limited digital skills to increase their access to app-based mobility services and reduce the digital gap.

10. User-friendly interfaces contribute to inclusivity and usage of mobility hubs. Digital interfaces need to be simple and intuitive to be useable by everyone.

For more detailed discussion on what we can do to addressed each recommendation, please have a look at: https://www.smartmobilityhubs.eu/publications

Yusak Susilo

Acknowledgement: This text is a modified copy from the summary of the final report of SmartHubs project which can be found in: https://www.smartmobilityhubs.eu/_files/ugd/c54b12_eec2ced132d04c158f16c04daa6b8c48.pdf

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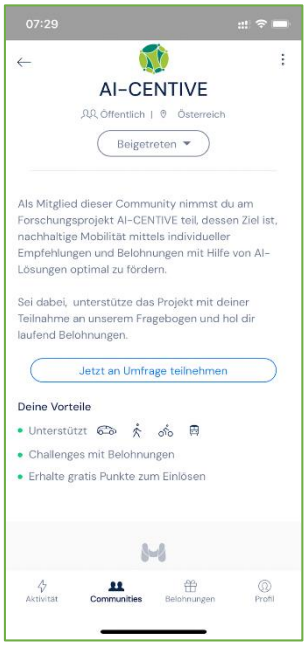
2. Using AI for predicting travel behaviours – AI-Centive project

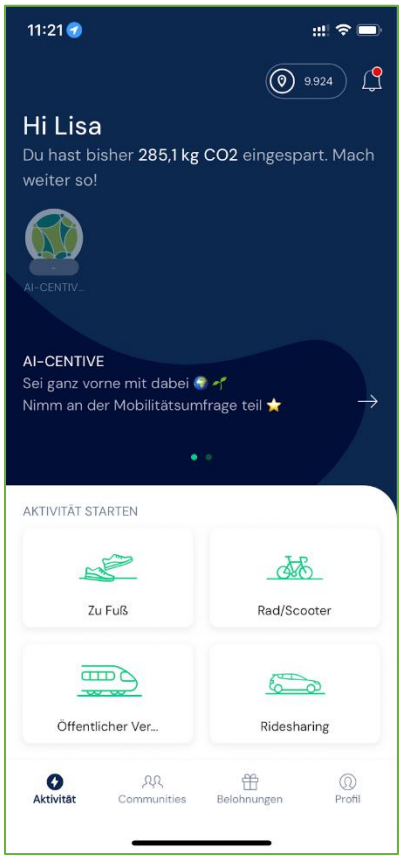
The widespread use of artificial intelligence (AI) has become a commonplace occurrence in our daily lives, with evident advantages and disadvantages. In the scientific realm, AI aids researchers in enhancing the efficiency of their studies and pushing beyond previous limitations. This trend extends to the study of travel behaviour as well.

The DAVeMoS research group is actively engaged in the multidisciplinary project called "AI-Centive," which focuses on developing AI-based models to predict travel behaviours. While travel behaviour models have been developed over the past 50 years to predict various aspects of travel, the AI-Centive project stands out by focusing on the utilisation of machine learning algorithms to explore the impacts of a wide range of exogenous factors. This task poses challenges when using classical econometric models, but AI offers promising solutions. One key aspect of the AI-Centive project is the utilisation of a dataset from the Ummadum mobile application, which has gained popularity among Austrian commuters.



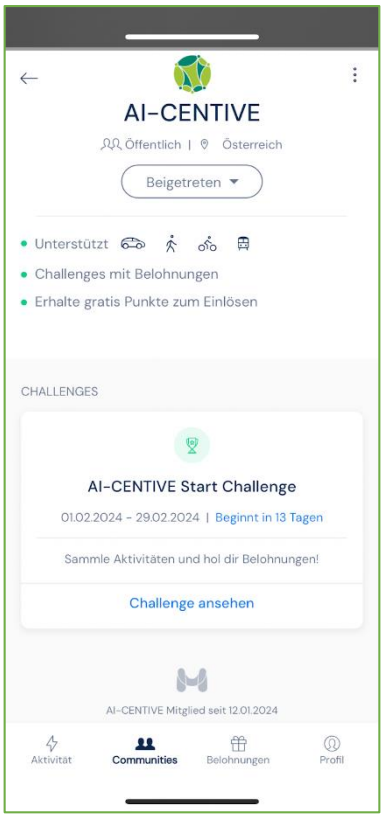
The ummadum mobile application allows users to earn points for sustainable travel modes. These include walking, cycling, car sharing and public transport, providing a wide range of flexibility and freedom for commuters. Points can be exchanged for a range of rewards, including coffee in coffee shops, groceries and other items.

The main focus is on encouraging the transition from unsustainable modes of transportation, such as cars, to more sustainable and environmentally friendly options. In addition to earning ummadum points, which incentivize sustainable travel behaviours, there's an added benefit of promoting physical activity, contributing to individual health and well-being. On the surface, this approach seems straightforward, so what's the challenge when it comes to using AI in this context?



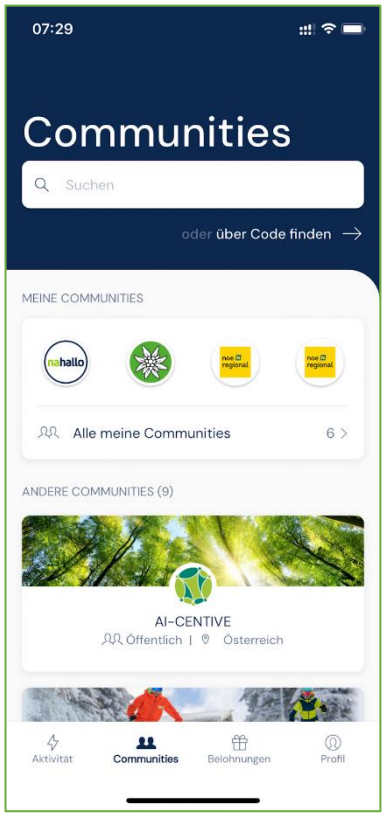
The AI-Centive project integrates data from various sources across different domains. It focuses on several distinct areas. Firstly, the project utilises weather forecasts to assess how changes in weather conditions influence travel behaviour. While this has been explored in previous studies, AI-Centive employs a big data approach by leveraging the ummadum mobile application as a data source. Secondly, the project incorporates public opinion data, which is analysed using WebLyzard technology dashboard. This tool utilises linguistic algorithms to translate public sentiment expressed on various mass media platforms into variables for the model.

Thirdly, the constant data flow originates from the ummadum app to MODUL Technology GmbH, which develops the AI model to predict the distances travelled by individuals, differentiating between modes used.



Furthermore, challenges are set up to encourage users to track their activities for a month and reward those who have travelled the most sustainably. Users also earn regular points for CO2 savings. All of this data is then integrated with socio-economic information on ummadum users to analyse the impacts of these incentives on the mobility behaviour of the Austrian population.

The BOKU team, particularly the members of the Institute for Transport Studies and DAVeMoS, plays a pivotal role in various aspects of the project. The current focus of our team is on the qualitative analysis of ummadum-based incentives, which serves as the project's baseline. This involves several stages, which are closely coordinated with the ummadum team. We have initiated a behavioural survey to gauge current attitudes toward incentive schemes and mode choice preferences. Additionally, our team has crafted a logic map, which delineates the connectivity of all steps, from initial data collection to AI model development, and the resulting outputs and impacts of different AI-based incentives.



The next steps for the DAVeMoS research group and the Institute for Transport Studies are to comprehensively evaluate the consequences of incentivising travel behaviour among Austrian residents. This includes understanding how to reduce CO2 emissions through the digitalisation of travel-related services. Through close collaboration between software developers and transportation engineers, we aim to develop cutting-edge services that encourage more sustainable travel choices. By increasing awareness of the benefits of "green modes" of transportation, we aim to enhance the overall quality of life within the communities.

Oleksandr Rossolov

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3. FFG funded ZeroFlex project: Flexible mobility point as a building block for climate neutrality

The DAVeMoS team is a project partner in the ZeroFlex project. The objective of the ZeroFlex project is to standardise the topic of mobility stations and make them more affordable, both at the level of the individual mobility station and at the level of a system innovation as an integrative overall offer across all stations. The modular design of the ZeroFlex stations, including the cooperation system between all operators, enables optimal adaptation to the respective regional needs and potential, thus also significantly improving accessibility to the multimodal transport system.

ZeroFlex comprises:

(1) the technical and organisational development of the stations and the overall system (ZeroFlex).

(2) a comprehensive field test conducted under real-world conditions, including monitoring and evaluation (City of Klagenfurt and Salzburg Airport).

(3) the modelling of an optimised system as the sum of all ZeroFlex stations with regard to spatial-structural and mobility behaviour-related aspects.

(4) the conception of a highly flexible business model (as a leasing model) and

(5) the modelling of the climate impact (CO_2 balance) and the realistically possible contribution to climate protection. the realistically possible contribution to climate neutrality.

Further information can be found at https://zeroflex.at/

The Institute's staff is responsible for developing a monitoring and evaluation plan for the demonstration phase and for analysing and evaluating the data collected as part of this plan. The findings will also be incorporated into a work package dealing with the topic of upscaling. The project has a duration of 36 months and commenced in March 2023.

Roman Klementschitz

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4. VR study on bike lane design

In Autumn 2023, DAVeMoS hosted a master student visit from Tokyo University Japan, Kaori Nakamura, who was developing her master thesis in collaboration with the DAVeMoS team.

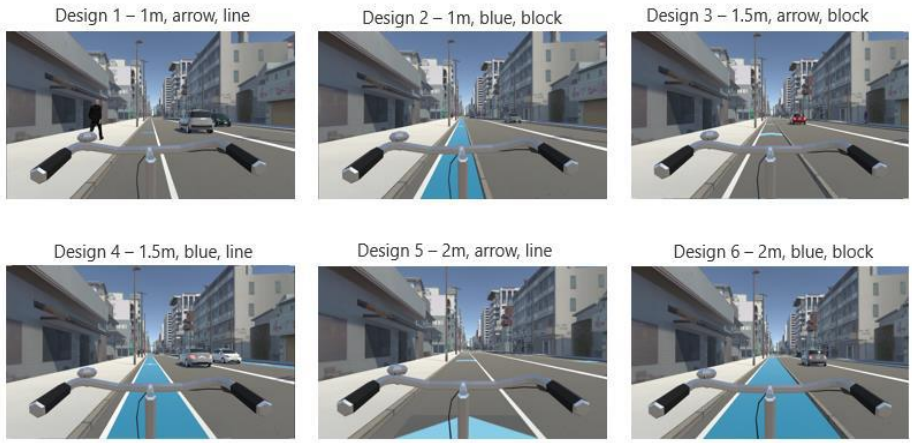
During her stay with us, as part of her master's thesis, Kaori Nakamura conducted an experimental study to assess urban bike lane designs using virtual reality (VR). The experiment, conducted from 6 to 19 December 2023 at BOKU in Vienna, employed VR and physiological measurements to assess how different design elements affect the cognitive load, stress, and safety perceptions of cyclists.

The study examined six different urban bike lane layouts that mirror common scenarios in Japanese cities, with 24 participants aged between 20 and 60 taking part. The participants were assessed through riding tasks to measure their subjective feelings and physical responses.

One of the key findings is the importance of path width. Participants showed a clear difference in the impact on subjective comfort between 1m and 1.5m/2m. Road markings also play an important role, with the differential impact on subjective comfort partly due to the fact that the bike paths are painted in different colours.

Kaori plans to apply sophisticated modelling techniques, such as the Diffusion-Decision Model, to integrate physiological data in the next stage of her research. This will allow for a better understanding of the decision-making processes of cyclists, which could greatly contribute to designing more inclusive and safe urban bike lanes suited for the increasing popularity of micro-mobility options.

Shun Su



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5. The 3rd DAVeMoS Day

At the beginning of 2024, we were presented with an excellent opportunity to enhance research exchanges and collaborations between our team, stakeholders, and researchers. This occurred at the 3rd DAVeMoS Day on 25 January 2024. At the event, our team participated in engaging presentations and discussions covering a range of topics related to ongoing DAVeMoS activities. These included:

1. Demand responsive transport for ensuring the last mile – the case study of Leogang, Salzburg
2. Shared Mobility beyond Urban Limits – Insights on Usage in two Rural Cities in Lower Austria
3. Exploring the potential of demand responsive transport in Vienna accounting for users' heterogeneity and satisfaction with public transport services
4. Defining the design of mobility hubs via The Smarthubs user and system analysis
5. The determinants of PT-based hiking trip attractiveness and their use within digital trip planning solutions
6. Exploring physiological measurements of micro-mobility users in a multi-modal virtual reality setup
7. Reorganisation of daily activities and locations in the digital age
8. Plan from the future: A Backcasting Approach on Micromobility and Decarbonisation
9. Connecting the Dots: Agent-based Simulation for Individual and System Level Impact Analysis

Approximately 35 people attended the event, with some opting for the in-person experience while others joined virtually from various locations. In addition to DAVeMoS Day, the Funders' Board Meeting provided an opportunity to discuss the current state of DAVeMoS's research, future research directions, and potential new research areas. We are excited to see where our collaborations will lead and look forward to seeing you at the next DAVeMoS Day.

Shahnaz Nabila Fuady

6. Visitor and new research team members

MAXIMILIAN PANCZYK is a master's student in Sustainable Development at the Swedish University of Agricultural Sciences and Uppsala University, Sweden. He is currently writing his master's thesis at BOKU about the impact of the built environment on behaviours and cognitive loads in cyclists to improve road infrastructure for bicycle traffic in Vienna.

FRANZ-XAVIER RUPPRECHT is a master's student in Environmental Engineering at the Vienna University of Technology. He is currently writing his master's thesis at BOKU in the field of Transportation Modelling using MATSim, with a specific focus on the generation of synthetic populations.

7. DREAMS Project: Kick-off for our new European project in Paris

On 5 February 2024, our new project, DREAMS (Driving Equitable and Accessible 15 Minute Neighbourhood Transformations), was launched at the L' Institute Paris Region in France. This was followed by an engaging consortium meeting, at which our partners from Austria, Belgium, France, Germany, Hungary, and the Netherlands discussed the objectives and next steps of this new project.

The DREAMS project will explore ways of creating accessible, sustainable, and inclusive 15-minute City (15mC) neighborhoods in the urban outskirts of European cities and regions. To this end, an extensive research program will be conducted in six Living Labs (Budapest, Brussels, Munich, Paris, Utrecht, and Vienna). The focus points of these Living Labs are the mobility hubs, flexible activity hubs, demand-responsive services, car-sharing and car-pooling, and shared micromobility.

The DREAMS project has multiple objectives. One of them is to redefine the 15mC concept, analyse and compare the 15mC lifestyles in various low- to mid-density suburban and urban outskirts within the six Living Lab locations. Another objective is the development and testing of new business models and governance frameworks for innovative shared mobility services and flexible activity hubs. Additionally, a stakeholders' decision support tool will be created and applied to illustrate the impact of the built environment, mobility services, and flexible activity hubs (such as pop-up stores) on influencing travellers' behaviour. An open software version of this support tool will be also available for stakeholders and policy-makers by the end of the DREAMS project. Furthermore, the impacts of these services on accessibility, mobility, and society will be examined in detail to ensure their effectiveness. The ultimate goal of the DREAMS project is to generate policy recommendations and support tools that facilitate accessible, sustainable, and inclusive urban mobility in 15mC neighborhoods on the urban outskirts of cities.

On the Austrian side, we will collaborate with colleagues from TU Wien (MOVE), Mobyome, and StadtLand, supported by Morgenjungs and MO.POINT, to examine the impact of local pop-up stores, demand-responsive transport, and flexible mobility stations on encouraging individuals who live in urban outskirts to work, live, and play within their 15-minute distance from their residents' areas.

We are eagerly awaiting this promising collaboration, which will lay the groundwork for more sustainable cities and assist stakeholders, practitioners, and policy-makers in achieving their environmental objectives.

Georgia Charalampidou

8. SmartHubs Symposium in Brussels

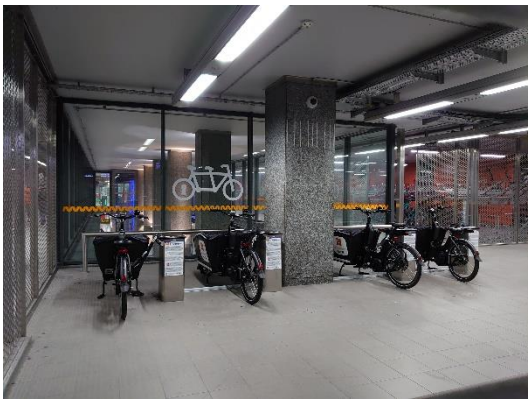
The fourth Smarthubs Symposium was held in Brussels on 16 October 2023 in collaboration with Brussels Mobility, Mobilise (VUB) & Mpact. The event was attended by 41 participants from government, public, private and non-profit organisations.

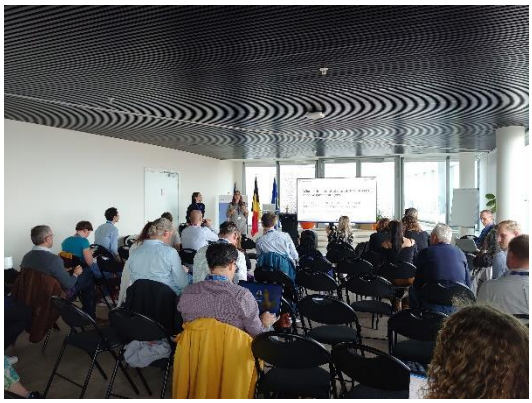
In the morning, participants visited mobility hubs in the city centre of Brussels, from the Bourse Square to De Brouckere and the Iris Tower. A stakeholder workshop was held on the topic of (smart) mobility hubs and their transformative potential for urban mobility.

In addition to a presentation of the Smarthubs project by Prof. Karst Geurs (University of Twente) and contributions on the new strategy for mobility hubs in the Brussels region by Timothé Buen Aban (Brussels Mobility) and on strategies To support people with special needs in the use of mobility stations, Lluis Martinez (Mobilise, VUB), Roxani Gkavra (BOKU) and Anna Grigolon (University of Twente) presented the potential of mobility stations. The findings are based on the evaluation of a survey of users and non-users conducted in four European regions as part of the Smarthubs project (Brussels, Rotterdam/The Hague, Munich, Vienna/Lower Austria).

The event concluded with a panel discussion in which challenges and solutions in connection with the integration of mobility hubs in public spaces were discussed.

Oliver Roider





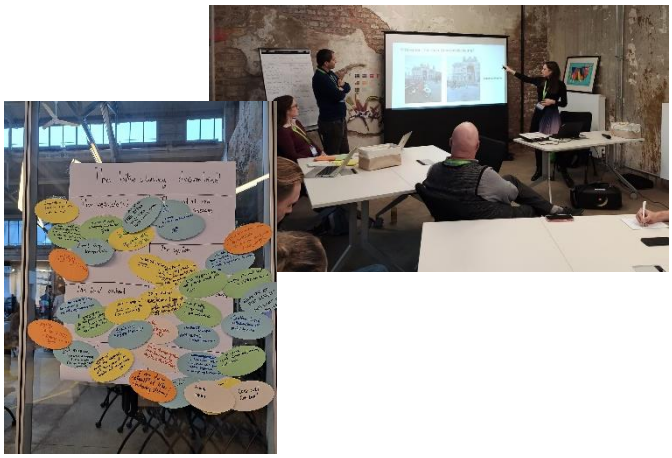
9. DAVeMoS at Conferences

DAVeMoS at CRBAM2023

From 25th to 27th October 2023, the city of Wuppertal, Germany, played host to the 7th Annual Meeting of the Cycling Research Board. The event, themed "The hill we ride", was hosted by the University of Wuppertal. All conference sessions were conducted in an interactive format, encouraging interaction and intense discussions among cycling-focused researchers from various disciplines.

Roxani Gkavra, a Davemos PhD student, co-hosted a workshop on the Acceptance of New Cycling Technologies. After presenting her work conducted in cooperation with Prof. Yusak Susilo and Dr. Oleksandr Rossolov on the competition between bike and e-scooter sharing, she guided the participants in envisioning, discussing, and planning their "Bike sharing Dreamland". During the workshop, attendees discussed a number of key characteristics of an ideal sharing system, including vehicle characteristics and spatial and temporal coverage. Further details on the conference can be found in the book of abstracts, which is available online via this link.

Roxani Gkavra



DAVeMoS at NECTAR Cluster 6 Accessibility workshop

The NECTAR (Network on European Communications and Transport Activities Research) Cluster 6 held a two-day workshop at the University of Antwerp (12th-13th October 2023). The 21 studies invited for participation addressed the recent developments on the study of digitalisation and accessibility in the post-pandemic context.

Roxani Gkavra presented a synthesis of our Davemos work on the role of digital skills on mode choice behaviour in her presentation, "Is there a pitfall of app-based mobility offers?" The presentation focused on the equity impacts of the transition to app-based shared and on-demand mobility services.

Roxani Gkavra

DAVeMoS at the 103rd US Transportation Research Board Annual Meeting

The DAVeMoS team participated in the 103rd US Transportation Research Board (TRB) Annual Meeting this year, which is acknowledged as the largest global gathering of transportation professionals and researchers with a focus on innovative solutions for all modes of transportation. This year, DAVeMoS brought a larger team that gave five different presentations at the conference.

One of the committees focused on the impact of micromobility. Roxani Gkavra, a DAVeMoS PhD student, presented her research on the users of shared micromobility based on data collected in three European cities. The research revealed that individuals who use shared micromobility still depend on other modes for daily travel, with a strong current and future preference for bike-sharing.

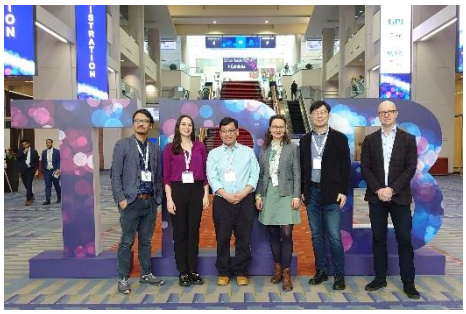
Similarly, DAVeMoS PhD student Julia Schilder is investigating shared mobility in Austria's rural towns. She has summarised her initial findings on the factors influencing usage, user satisfaction and non-user reasoning based on a panel data collection. Her research will enhance understanding of the adoption of shared mobility in reference to Rogers' Theory of Diffusion of Innovation and support with findings on the closure of the gap between awareness and (regular) usage.

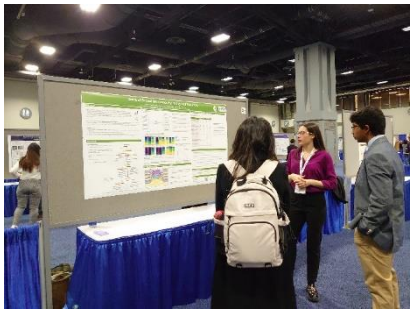
One of the most discussed topics at the conference was the effect of the advancement of Information and Communication Technology (ICT) on individuals' daily behaviour. One of the emerging ICT services is e-shopping, and Dr. Oleksandr Rossolov, a research fellow at DAVeMoS, presented the results of his study conducted in the USA within his Fulbright Scholarship. The results indicate that the provision of free return services for online purchases is one of the key drivers for generating return goods flows.

Furthermore, Muhamad Rizki, a DAVeMoS PhD student, presented a poster on the impact of smartphone app usage on activity participation using the one-week app diary in Indonesian cities. The research highlighted that app activities that generate new activities were reported three times more than those reducing travel needs, and these impacts vary across time and context.

Another key topic at the conference is the use of advanced data collection methods to explore the relationship between travel behaviour and health, as well as other well-being indicators. Shun Su, a DAVeMoS PhD student, presented a study investigating the correlation between children's active travel modes and their physiological responses, focusing on heart rate variations to assess the impact on health. The research findings emphasise the importance of integrating active travel into children's daily routines and support the development of strategies that promote such activities, demonstrating their significant role in shaping physiological outcomes.

Muhamad Rizki





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DAVeMoS at the International Workshop on Green, Smart, and Mobile Urban Communities

On 6 November 2024, Prof. Susilo delivered an opening keynote at the International Workshop on Green, Smart, and Mobile Urban Communities: Promotion of Inclusive, Equitable and Integrated Social Policies for Human Well-being in Cities (GAME), held at the University of Bari Aldo Moro, Italy. This event forms part of the Horizon Europe SEEDS initiative.

During his visit, Professor Susilo also delivered a guest lecture on equity analysis in public transport planning to students in the economics department at the University of Bari Aldo Moro.

Yusak Susilo

10. FSV Planning Seminar on 23rd and 24th May 2024

In 2024, DAVeMoS is once again cooperating with the Road - Rail - Transport Research Association (FSV) and organising an expert's seminar. This time, the seminar is dedicated to the topic of tourism and mobility.

The objective is to identify strategies for decoupling the growing demand for tourism from the growing demand for motorised private transport in tourism. Restrictive measures for motorised private transport may deter holiday guests. If so, how can this be counteracted? How can stakeholders work together effectively?

To answer those questions, we will examine the current situation, the objectives and strategies of the various stakeholders, and present examples of implementation that contribute to achieving these objectives.

Have we piqued your interest? Further information and registration options can be found at https://boku.ac.at/rali/verkehr/tagungen-veranst/23-24-mai-2024-fsv-seminar-tourismusmobilitaet-im-lichte-der-verkehrswende

Roman Klementschitz

11. IATBR 2024 Conference preparation

The DAVeMos team has been working hard over the past six months to prepare for the 17th International Conference in Travel Behaviour Research (2024 IATBR Conference). The theme of this year's conference is

"Transformative Travel Behaviour Research - Looking beyond Back-to-Normal"
(https://iatbr2024.univie.ac.at/home/).

This conference is the largest scientific/specialist conference among international travel behaviour researchers. The attendees are interdisciplinary travel behaviour researchers from a variety of backgrounds, including transport and urban planners, transport modellers, computer scientists, psychologists, urban geographers, sociologists, and of course transport engineers. The focus of the research topic is the theoretical advancement of behavioural analyses and modelling.

This year, we requested that attendees submit an extended abstract of up to 3,000 words (approximately 10-15 pages of work) to ensure the quality and maturity of the presented works.

Despite a very high level of entry, we received more than 600 extended abstracts from 47 countries, which each underwent a peer review by 2-5 reviewers.

The conference is scheduled to be opened by our Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology.

Yusak Susilo

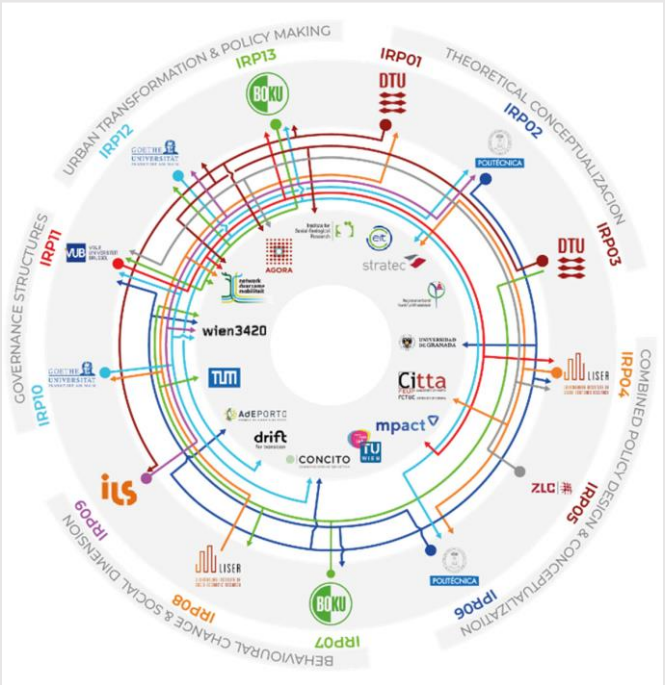
12. Incoming Project: TRANSFORM

DAVeMoS is pleased to announce the launch of a new EU-funded project in autumn 2024. This project, a Marie Skłodowska-Curie Actions Doctoral Network, will create a holistic, interdisciplinary, intersectoral, and gender-sensitive Doctoral Network across multiple universities and industries in Europe. The Network will focus on transformative practices that activate and consolidate transitions within ever-evolving urban mobility cultures.

The project involves 14 universities and 11 authorities, research institutes and companies, including the EIT Urban Mobility doctoral programme. The 13 PhD students will work simultaneously and collaboratively to address the challenges in initiating and establishing long-term transformative sustainable behaviours in transport systems.

Further information on this new doctoral network will be provided in due course.

Yusak Susilo



17th INTERNATIONAL CONFERENCE ON TRAVEL BEHAVIOR RESEARCH (IATBR)

Date :
14-18 July 2024

Vienna, Austria
University of Vienna, Main Building
Universitätsring 1, 1010 Vienna

"Transformative Travel Behaviour Research - Looking beyond Back-to-Normal"

WELCOME AND OPENING PLENARY

Leonore Gewessler
Austrian Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology

Gerd Sammer
University of Natural Resources and Life Sciences, Vienna

KEYNOTE SPEAKERS

Caspar Chorus
Delft University of Technology

Sonja Haustein
Technical University of Denmark

Mei-Po Kwan
The Chinese University of Hong Kong

Martin Raubal
Swiss Federal Institute of Technology (ETH) Zurich

Chandra Bhat
University of Texas at Austin

Despite the COVID-19 pandemic having become endemic, 'back to normality' is not something that everybody can expect. The increase of digitalisation in our daily lives, the uncertainty about supply chain and economic conditions, and the introduction of new habits and values during the pandemic time have challenged the notion of "typical travel patterns" and raised questions on the assumptions underlying our transport models. In parallel, the impacts of climate change in recent years are becoming more and more apparent and knowledge on how we can identify the triggers that lead to a profound, transformative behaviour change beyond what we can see with our traditional approaches is critical to achieve our carbon net-zero target.

Whilst the uncertainties of user behaviours and transport supplies make travel demand modelling more difficult than ever, the interdisciplinary knowledge and advancement of methodologies and technologies enable us to explore new approaches in order to understand and forecast human decisions better. This knowledge would be critical in promoting a sustainable behavioural change, with the right disruptive methods and interventions, and in creating accessible and inclusive climate-neutral cities.

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Further info:
https://iatbr2024.univie.ac.at

Organized by

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BOKU IVe Institut für Verkehrswesen
University of Natural Resources and Life Sciences
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IATBR 2024 WORKSHOPS

Workshop 1

Trends in time, travel, transit, and telework: the future reimagined


Ram Pendyala **Steve Polzin**

Arizona State University

Workshop 2

EU living labs for co-designing innovative transport and logistics solutions to address climate change


Amalia Polydoropoulou **Maria Karatsoli**

University of Aegean

Workshop 3

From imagination to implementation: the evolution of user preference research for automated vehicles in real-world operations



Viktoriya Kolarova **Andrea Hauslbauer** **Dimitris Milakis**

German Aerospace Center (DLR)


Yoram Shiftan
Technion - Israel Institute of Technology

Amanda Stathopoulos
Northwestern University


Barbara Lenz
Humboldt University

Elisabetta Cherchi
Newcastle University

Workshop 4

Travel behavior research: are we in crisis?


Joan Walker **Carlos Guirado**

University of California, Berkeley

Workshop 5

Introducing spatial availability for singly-constrained accessibility analysis: theory and open source tools

Antonio Paez

McMaster University

Workshop 6

Travel behavior research agenda with panel data


Maarten Kroesen
Delft University of Technology

Milad Mehdizadeh
Norwegian University of Science and Technology

Workshop 7

Understanding choice modellers' workflows: hands-on experience using a serious game



Gabriel Nova **Sander van Cranenburgh** **Stephane Hess**

Delft University of Technology

University of Leeds

Workshop 8

Insights on User Potentials and Needs for Policy Design to Motivate Switch to Climate-Neutral Mobility – Lessons from Austria and Beyond

Stefan Seer

Austrian Institute of Technology

Planned Side Events

The World Conference on Transport Research Society (WCTRS) reception and SSC meeting
by Giovanni Circella (University of Ghent), Günter Emberger & Takeru Shibayama (TU Wien)

Inauguration of the European Association for Activity-Based Modelling (EAABM)
by Alexander Erath (University of Applied Sciences and Arts Northwestern Switzerland)

EXCURSIONS

- **Cycling tour**
- **Visit to SeeStadt**
- **Visit to Nordbahnviertel**
- **Visit to Freudenau port & thinkport Vienna living lab**
- **Tour of Vienna Public Housing System**
- **Visit to Viennese City Climate Strategy Office**
- **Visit to U2xU5 subway construction site**
- **and many more**

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13. List of DAVeMoS activities (10/23 – 03/24)

In Management:

1. We are pleased to announce that our visiting student, Kaori Nakamura, has returned to the University of Tokyo to continue her studies with her students.
2. We are also welcoming Maximilian Panczyk and Franz-Xaver Ruprrecht to our team. Max is a master's student from the Swedish University of Agricultural Sciences and Uppsala University, Sweden. He is currently writing his master's thesis with us about the impact of the built environment on behaviours and cognitive loads in cyclists to improve road infrastructure for bicycle traffic in Vienna. Franz is a master's student from TU Wien and is currently writing his thesis on synthetic population.

In Research:

1. In the last six months, the DAVeMoS has published four web-of-science publications, six conference articles, delivered a keynote at the University of Bari and given two guest lectures at the University of Bari and Bandung Institute of Technology.
2. During this period, DAVeMoS has utilised its VR environment to investigate cycling behaviours based on Japanese context and deployed our instrumented bike on the streets of Vienna.
3. DAVeMoS has completed a large survey of micromobility usage in the province of Lower Austria.
4. DAVeMos has delivered one SmartHubs deliverable and participated in one SmartHubs symposium.
5. DAVeMoS has successfully organised the inaugural DAVeMoS Day, which was well attended both in person and online.

In Education:

1. DAVeMoS has hosted two master students from Japan and Sweden for periods of three to six months to work on their master's theses with us.
2. We have a new master's student, Fabio Hopfgartner, who will be working on AI-based stereovideo analysis for enhancing traffic information. Fabio will also be working on his master's thesis in collaboration with ASFINAG.

14. List of DAVeMoS publications (10/23 – 03/24)

Peer-reviewed journal articles:

1. Rizki, M., Joewono, T.B., Susilo, Y.O. (2024) The Influence of App Function Evolution on Transport SuperApp (TSA) Use Behaviour Over Time. *Transportation*, doi: 10.1007/s11116-024-10485-6.
2. Rizki, M., Joewono, T.B., Susilo, Y.O. (2024) Exploring levels of adoption of multi-function apps: Transtheoretical model of change of Transport-SuperApps users. *Communications in Transportation Research*, 4,100125, doi: /10.1016/j.commtr.2024.100125.
3. Julio, R., Susilo, Y.O., Monzon A., (2024) Identifying key elements for user satisfaction of bike-sharing systems: A combination of direct and indirect evaluations. *Transportation*, 51, 407-438 doi: 10.1007/s11116-022-10335-3.
4. Auliani, S., Puspasari, M.A., Mahachandra, M., Susilo, Y.O., Iridiastadi, H. (2024) Fatigue among Indonesian Freight-Train Drivers: A study utilizing eye blink duration and changes in facial expressions. *Transportation Research Interdisciplinary Perspectives*, 24, 101056, doi: /10.1016/j.trip.2024.101056.

Conference presentations:

1. Roider, O. Gkavra, R., Susilo, Y.O. (2024) Barriers and preferences to mobility hubs: An analysis of users and non-users. MobilTUM 2024: Future of Mobilty and Urban Space, Munich, Germany.
2. Gkavra, R., Susilo, Y.O., Roider, O., Grigolon, A., Geurs, K. (2024) Users of Shared Micromobility: Today and Tomorrow. 103rd US Transportation Research Board Annual Meeting, Washington D.C., USA.
3. Schilder, J.C., Stark, J., Susilo, Y.O. (2024) Introducing Shared Mobility in Austria's Rural Cities: Determinants of Usage, User Satisfaction, and Non-User Reasoning. 103rd US Transportation Research Board Annual Meeting, Washington D.C., USA.
4. Su, S., Stark, J., Hössinger, R., Susilo, Y.O. (2024) Analysis of Physiological Responses of Children to Active Travel. 103rd US Transportation Research Board Annual Meeting, Washington D.C., USA.
5. Rizki, M., Joewono, T.B., Susilo, Y.O. (2024) Investigating the Impact of Smartphone App Use on Activity-Travel Participations: Evidence from 1-Week App Use Diary in Indonesian Cities. 103rd US Transportation Research Board Annual Meeting, Washington D.C., USA.
6. Rossolov, O., Holguin-Veras, J., Susilo, Y.O. (2024) Post-Purchase Trips Heterogeneity: Exploring the Impact of Free and Paid Return Deliveries on Shopping and Transport Mode Choices in the United States. 103rd US Transportation Research Board Annual Meeting, Washington D.C., USA.