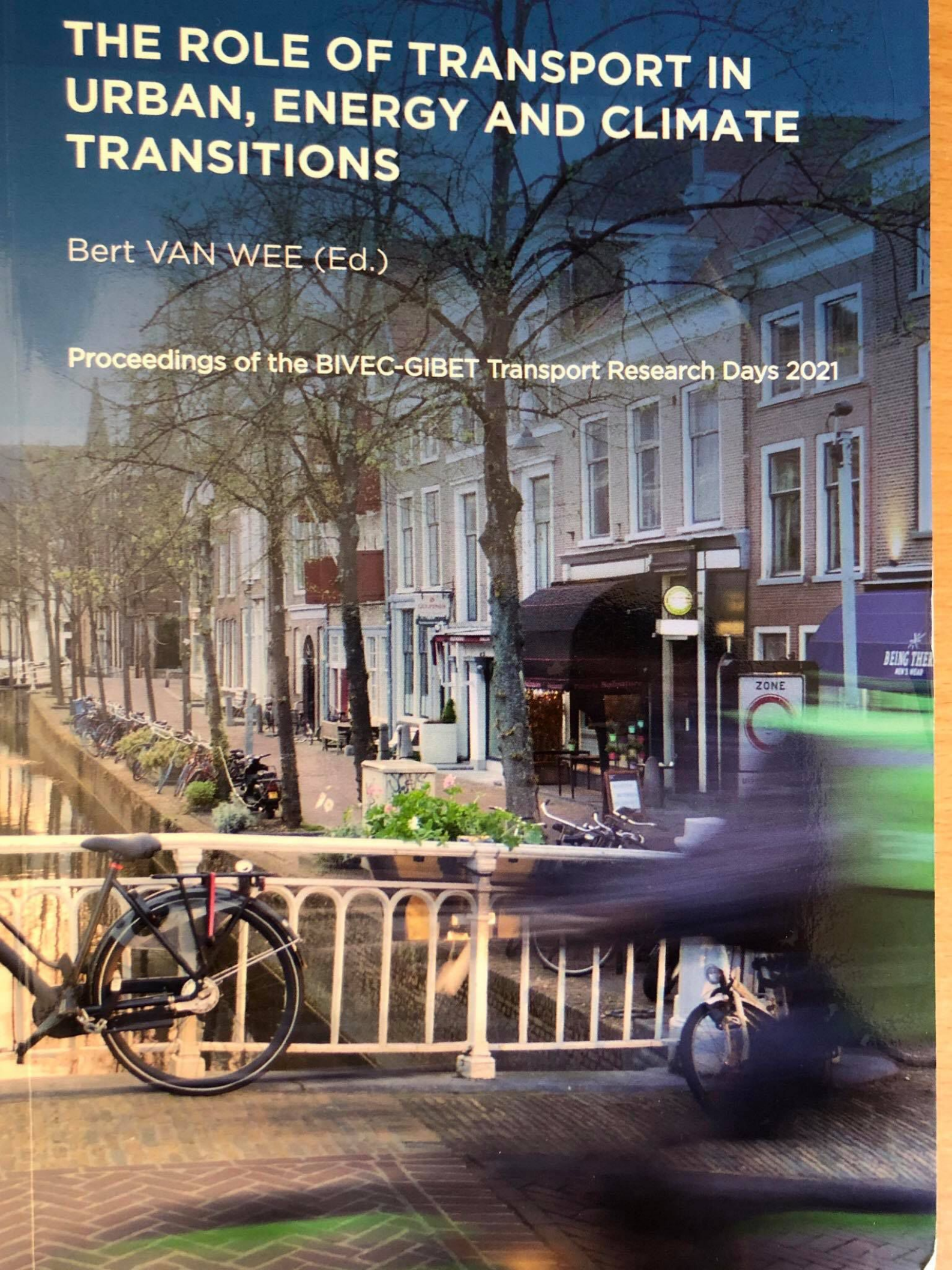


# THE ROLE OF TRANSPORT IN URBAN, ENERGY AND CLIMATE TRANSITIONS

Bert VAN WEE (Ed.)

Proceedings of the BIVEC-GIBET Transport Research Days 2021



## **ABOUT THE BOOK**

This book presents the proceedings of the 9th BIVEC-GIBET Transport Research Days (27-28 May 2021) organized online by TRAIL Research School and Delft University of Technology, the Netherlands. The Transport Research Days (TRD) are organized biannually and offer young and established scholars from the three Benelux Countries an opportunity to present their research findings to an informed audience of transport, mobility, and logistics researchers.

## **ABOUT THE EDITOR**

Bert van Wee is Full Professor of Transport Policy at Delft University of Technology, and Scientific Director of TRAIL Research School.

Photo: Steven Yoo

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# Preface

Dear colleagues, Chers collègues,

A very warm welcome to all of you who attend the 2021 Transport Research Days (TRD) of BIVEC-GIBET, the Benelux Interuniversity Association of Transport Researchers, taking place on the 27th and 28th of May in Delft, the Netherlands. The TRD are organized biannually and offer young and established scholars from the three Benelux Countries an opportunity to present their research findings to an informed audience of transport, mobility, and logistics researchers. This is the 9<sup>th</sup> time that the TRD have been organized. Previous editions were held in Hasselt (2005), Rotterdam (2007), Brussels (2009), Namur (2011), Luxembourg (2013), Eindhoven (2015), Liège (2017) and Ghent (2019).

This year the TRD were organized by Delft University of Technology, the Transport and Logistics Group of the Faculty of Technology, Policy and Management, and TRAIL Research School. Despite (or maybe also: thanks to?) the fact that this year we organized the conference online because of the COVID-19 pandemic, we received 52 papers and extended abstracts. We are confident that we have put together a very interesting program that will bring forward transport, mobility and logistics research in the Benelux-countries quite significantly. This was made possible thanks to the active input of many of you who submitted high quality papers. We want to thank all participants, all session chairs, and the people who helped organizing the TRD, especially Esther van Baarle (TRAIL). We also thank Veronique Van Acker and Mario Cools who supported us on behalf of BIVEC. And we thank the Transport Institute of TU Delft for their financial support.

In this conference proceedings book you will find the full papers and some extended abstracts that were submitted by the participants. Please note that all copyrights belong to the authors.

We hope you enjoy the 2021 Transport Research Days!

Prof. Bert van Wee

Delft University of Technology and TRAIL



# BIVEC/GIBET

Promoting high quality research and education in the field of transport, within its region, is the main goal of the Benelux Interuniversity Association of Transport Economists - BIVEC-GIBET for short. Founded in 1978, the Association has evolved from a small group of transport economists into a solid and broad-based network of a diversity of transport experts. It presently unites both academic staff and professional people qualified in fields such as transport economics, logistics, regional economics, transport geography, transport engineering, transport policy, and transport law. BIVEC-GIBET already has 40 years of experience, and the organization is still going strong!

What are BIVEC-GIBET's main aims?

- **Transport Research Days.** A two-day conference where current research is being presented by junior and senior researchers in sessions preceded by senior researchers.
- **Joint BIVEC-BENELUX Policy day.** A one-day workshop on a topic that has a high policy relevance where in the morning the academics get the floor, and in the afternoon the policymakers. Topics such as cross-border mobility, traffic safety, road pricing have been addressed.
- **Piet Rietveld PhD Award.** This dissertation prize recognizes the best doctoral dissertation in the area of transport, mobility and/or logistics research (broadly defined) that was publicly defended and accepted for eligibility for a PhD degree at a Benelux University institution. The award entails a certificate, a three-year membership of BIVEC, and 2500 EUR.
- **One day research seminars,** organized by BIVEC members (e.g. on Chinese logistics, Eco Zones, ...)
- **BIVEC-GIBET Transport Chair.** This Chair is awarded to an individual who has important scientific and/or social merits related to transport and mobility within Europe. The first recipient (in 2012) was professor David Banister (University of Oxford). The second recipient (in 2014) was professor Jonas Eliasson (Royal Institute of Technology, KTH). The third recipient (in 2016) was professor Alan C. McKinnon (Kuehne Logistics University, Hamburg), and the fourth recipient is professor Jos Delbeke (Florence European University Institute & KU Leuven). The current recipient is professor Maria Attard (University of Malta).

*Interested and/or convinced to become a member? No problem, just go to our website: <http://www.bivec-gibet.eu> and fill in the application form. An annual individual membership costs 50 EUR and gives you free or strongly reduced registration fees to all our activities.*

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## ***Understanding the Factors Influencing Public Transport Mode Choice Behavior of Vietnamese Motorcyclists***

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**Abstract:** *Many previous studies evaluated modal choices of car and public transport users. In contrast, there are very few studies on modal choice in motorcycle dominant countries like Vietnam. Thus, this paper reviews studies on travel mode choice to identify factors influencing mode choice in Vietnam. Most of the frameworks in previous studies divide boundaries between different levels such as the utility function, social-ecological system, socio-demographics, and psychology. These frameworks also list objective factors (gender, age, ethnicity, etc.) and subjective factors (attitudes, subjective norms, perceived behavioural control, etc.) within each level but rarely provide the interactions among them. Therefore, this study discusses the challenges in the travel mode choice and attempts to introduce a model linking objective factors and subjective factors in understanding the modal choices of the Vietnamese population.*

**Keywords:** *Travel mode choice, modal shift, motorcyclist, TPB, EFA*

### **1. Introduction**

Most people are interested in performing private trips to participate in activities instead of using public transport or emerging shared mobility services. Compared to other transport alternatives, this travel mode is generally perceived as more convenient, comfortable and promotes accessibility for supporting busy lifestyles. This travel mode is more attractive for individuals and is perceived as symbolic or reflects a person's identity (Steg, 2005; Redman et al., 2013). Those without private mobility become more disadvantaged and even socially isolated because the infrastructure of public buildings and workplaces are relocated to suit private mobility users (Steg, 2003). Previous studies have identified many factors influencing commuters' mode choice for different travel modes due to the differences in living conditions and land use from country to country (Washbrook et al., 2006; Kim & Ulfarsson, 2008; Eriksson et al., 2010; Stanton et al., 2013). However, these studies have mainly focused on car users, while just a few studies have attempted to understand factors influencing motorcycle users. This can lead to a lack of understanding of the transport situation of some regions, especially in Asia, which was significantly different from the Western world with typical features of a higher proportion of motorbike users (United Nations, 2018). Among the leading 20 countries with a high number of motorcycles per 1000 population, 7 of them

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