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Improving citizens' quality of life and societal transitions: Highlights of the 49th European transport conference

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This Topical Collection of European Transport Research Review includes a selection of papers presented at the 49th European Transport Conference (ETC), organized on-line by the Association for European Transport (AET), from September 9th to September 15th, 2021. The ETC is a major annual event where European transport practitioners and researchers come together to keep abreast of policy issues, research findings and best practices across a broad spectrum of transport topics: from advanced modelling for passenger and freight transport to appraisal methods; from sustainable planning to public transport and rail case studies. Uniquely in Europe, the Conference provides a forum for those engaged in research, policy and business in transport, bridging the gap that often arises between theory and practice.

For the second year in a row, ETC was held online due to health protection measures and travel restrictions imposed by the COVID-19 pandemic. Although this was not an ideal situation for taking full advantage of the discussion and networking opportunities ETC offers, the conference still attracted around 500 delegates to debate emerging topics in transport and mobility. Considering this context, the immediate [1] and longstanding impacts [2] of COVID-19 on the transport sector were naturally hot topics at ETC 2021. However, as the vaccination was ramping up in Europe and across the globe, and with the end of the pandemic on the horizon, it was also time to refocus transport research on its core goals: improving citizens' quality of life and supporting societal transitions through the provision of environmentallyfriendly and resilient mobility options. This Topical Collection brings together a number of contributions to address this endeavour at different spatial scales.

Two studies analysed accessibility issues at the neighbourhood scale, focusing on social impacts and exclusion. Glock and Gerlach [3] presented some findings that counteract some preconceived ideas associated with the implementation of the 15 min city concept. Focusing on the case study of the Pankow district, in Berlin, the authors observed that neighbourhoods with poor accessibility are not necessarily associated with disadvantaged socioeconomic statuses. However, good accessibility, especially by public transport, usually involves a trade-off with noise and air pollution. Goralzik et al. [4] analysed how do people with disabilities perceive emerging shared mobility services through the results of a pan-European survey involving more than 500 respondents from 21 countries. Predictably, disabled people have more positive views about accessing to car- or van-based services than to services provided on two-wheel vehicles. However, participants stressed that none of the current offers ensure equal access for people with disabilities, considering that barriers are not limited to the physical access to vehicles, but also concern the accessibility and use of booking apps.

Other studies focused on the different steps of transport network modelling at the city scale. Starting with

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trip generation and distribution, Cerqueira et al. [5] used smart-card validations to develop a mathematical model and user interface to infer dynamic origindestination matrices. The main advantage of this tool is to consider trip and transfer status by detecting individual trips undertaken along with different bus and metro operators. Moving on to mode choice, Wiman et al. [6] developed a small-size system dynamics model that, despite structural and parametric uncertainty, allowed to compare alternative policies aimed at reducing car dependency in Helsinki with respect to emission impacts. Moreover, the authors were able to identify high-leverage uncertainties as targets of policy actions, and show how different assumptions of causal structures may lead to drastically different outcomes for the same intervention. Tiam-Lee and Henriques [7] estimated route choice in urban rail transit systems. In this study, peaks of smartcard validations at stations' exit gates were used to infer train arrivals, while the alignment between each passenger's validations at the entry and exit gates and train locations determined the likelihood of eligible routes. The authors found that most passengers opted for the route with the least transfers, but a significant number of passengers also prioritized the shorter distance. Additionally, Aparício et al. [8] assessed the robustness of Lisbon's current multimodal transport network, composed of eight different modes, by simulating different failure scenarios. The authors proposed a normalized measure to compare the robustness of each mode's network and analysed cascading events. The results showed that failures in stations have usually higher impacts than failures in network links.

Many of the contributions presented at ETC 2021 aimed to keep up with current societal transitions that go beyond the urban context. This was the case of Krauth and Haalboom [9], who argued that, in the context of climate change mitigation policies, more transport will take place by rail. The authors developed an optimization model to assess the impacts of increasing single wagonload transport between nine major freight consolidation hubs across Germany, analysing different scenarios associated with different capacity and routing constraints. The results highlighted the importance of an efficient operation to prevent that decreasing marginal costs, obtained through higher volumes, are offset by increasing congestion costs, so that economies of scale can be achieved. On the side of technological innovations, Bilal and Giglio [10] analysed the evolution of the macroscopic fundamental diagram caused by the introduction of autonomous vehicles (AVs) and their coexistence with manually-driven vehicles. This study advocates that AV features can adaptively manage traffic parameters such as speed and headway to increase road capacity. Using the city of Genoa as a case study, the authors were able to estimate an increase in road capacity up to 59% for an AV penetration rate that can go up to 35% in the next fifteen years.

As guest editors, we are pleased to see such a variety of articles contributing to the most prominent issues and transitions in the transport sector. In this way, the present paper collection is a suitable successor to the previous ETC 2020 Topical Collection [11], which has identified and debated several gaps that need to be bridged to achieve sustainability in transport in its various dimensions.

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