Editorial

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Welcome to the first editorial for *Proceedings of the Institution of Civil Engineers – Transport* in 2020.

Before going to the main editorial, I would like to share few highlights from 2019. It has been a great year for the journal. The impact factor has doubled, and the number of papers submitted has grown significantly. Unfortunately, due to publishing limitations, we had to make difficult choices and have only accepted high-quality papers that sustain the highest standards of the journal while serving researchers and professional engineers across the globe and extending our reach internationally. The increasing popularity of our journal has led to six editions being published per year, no less than 64 pages each.

Transport is a journal for the whole transportation community. We publish peer-reviewed papers for engineers, researchers, policymakers, and everyone interested in transportation-related issues. We believe that the broad coverage of topics is the main strength of our journal. This February 2020 edition is no exception, presenting two papers on pavement engineering and four on transport-modelling-related topics. I offer a brief overview of all six papers under two section headings.

Pavement engineering

Our first paper is on the ‘Evaluation of flexible pavement construction cost according to the design method’ by Tsiknas *et al.* (2020). Tsiknas and co-authors proposed a cost-optimal design method for flexible pavements based on specific design parameters, in compliance with Greek and European technical regulations and standards for roadworks. They reviewed three design methods, namely the Asphalt Institute (AI) method, the British design method and the method of Egnatia Odos (EO). They found that for a specific design parameter, the AI method offers the lowest-cost design solution for flexible pavements, whilst the British design method provides a reduced-cost solution for heavy or very heavy traffic loads and poor-quality subgrade soil. If the design case is a road with heavy traffic load and good-quality subgrade soil, the EO method produced the lowest cost for flexible pavement. This comparative analysis will be extremely valuable for pavement engineers responsible for designing roads in various geographical and climatic conditions.

Prevention and management of road surface damage are extremely important for the economy as well as for safe and reliable traffic movement. The correct interpretation of the cause or causes of defects and deterioration of road pavements is

important for the selection of the most appropriate maintenance or repair strategies and the design of new pavements. The second paper addresses this specific topic. The title of the paper is ‘Common surface defects in asphalt road pavements and unexpected causes’, written by Rolt *et al.* (2020). The paper describes and analyses three case studies, where three different mechanisms have caused the deterioration of both asphalt concrete and double chip sealed surfacing. The paper concludes by recommending the appropriate maintenance measures for the cause of each defect and appropriate designs to minimise the likelihood of their occurrence. This practical paper will be very useful for engineers and researchers responsible for the operation and maintenance of pavement.

Transport modelling

Roundabouts are an integral part of highways, providing a safe and efficient way of managing traffic flows. The capacity of roundabouts shrinks due to various factors including rainfall. Our third paper addresses this specific issue. The title of the paper written by Johnnie Ben-Edigbe and Stephen Olukayode Ibijola is ‘Anomalous capacity shrinkage at multi-lane roundabouts due to rainfall’ (Ben-Edigbe and Ibijola, 2020). In this paper, the authors developed a linear regression model to investigate the impact of light, moderate and heavy rain on traffic flow parameters such as anomalous entry, circulating and reserve capacity at multi-lane roundabouts. Readers will find this paper very stimulating and useful for the design and maintenance of highway roundabouts.

The fourth paper, titled ‘Headway distribution for manually operated tollbooths in India in mixed traffic conditions’, is by Navandar *et al.* (2020). In this paper, the authors present a vehicle-specific headway distribution model for toll plazas from a compressive data set of mixed traffic. The headway in a tollbooth is defined as the exit time of two consecutive vehicles from the same tollbooth measured from the front bumper to the front bumper. The results of this study can be used for developing toll plaza microscopic simulation models, which could be used for assessing and improving the performance and efficiency of tollbooths. There are limited studies available on headway characteristics at toll plazas. In this respect, this paper will be very useful for transport researchers and engineers.

Transport planning is an important process for determining transportation investment. The value of time (VoT), a quantitative parameter to contextualise cost, user comfort and time,

can be used at several stages of transport planning to generate accurate investment results. The fifth paper presents the concept of VoT in public transport planning; authored by Gorkem Gulhan and Mustafa Ozuysal, it is titled 'A novel decision-making support model based on the value of time for public transport planning' (Gulhan and Ozuysal, 2020). The authors developed an analytical model having categorised transit surveys on needs, complaints and expectations of transit users by comparing estimates of VoT. The developed model can be utilised by transport planners, policymakers and decision-makers to determine investable zones during urban transit planning.

The final paper is by Bin Yu *et al.* (2020) on 'Optimising subordinate net points layout of express enterprise with SCE-UA algorithm'. In this paper, the authors used the shuffled complex evolution (SCE) method, an optimisation model, to reduce the cost of the express industry in Dalian city, China while satisfying customer expectation. The rapid expansion of the express industry in China, an integral element of e-commerce, is increasingly penetrating the economic and social fields. The booming express market results in increasingly fierce competition between express enterprises. The distribution of net points (known as distribution centres) of an express enterprise plays a key role in the operation of that enterprise. The authors concluded that the proposed model can provide practical methods and ideas to express enterprises in terms of planning and distributing subordinate net points in the future. This paper is a good example of how theoretical modelling can help address practical problems.

We hope our readers find these papers useful and rewarding to read and apply in their field. Comments on this issue or on other issues or comments related to the journal in general will be received with great interest. We will also welcome papers

related to recent development in highway design, including revision of design standards, the challenges and new opportunities that bring these changes and case studies related to road-widening projects.

Finally, we are extremely grateful to our editorial board members and esteemed reviewers for their service to the journal. As the number of papers submitted has increased significantly, we are in a position to expand our editorial board. We will gladly consider any interest received from academics and practitioners. Please e-mail your CV to our editorial office and we will take care of the rest.

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