Editorial

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Transport stimulates economic growth for wealth creation and employment. It also meets social needs and reduces poverty by providing access to resources, markets, education, healthcare and jobs. Therefore, transport infrastructure planners, designers and asset managers should provide safe, reliable, sustainable and cost-effective infrastructure for the betterment of society.

Research and development are required to optimise users' cost, transport capacity, and society well-being and safety. Research is also essential to accommodate changes in condition and regulations such as the impact of Covid-19 on transport, communications and social activities and the requirement to meet net-zero carbon dioxide. The research findings, feedback and experience can be used to update standards and design practices.

This journal issue presents five technical papers comprising research on road safety improvement, network capacity assessment, material durability and users' behaviour in subway stations.

Improving road surface skid resistance is a key factor to enhance road safety and reduce accidents. Tavassoli Kallebasti *et al.* (2021) review the geometrical alignments that affect road surface friction and the impact on probability of vehicle skidding. They use vehicle multi-body simulation modelling when horizontal curves are combined with vertical sag curves for three different kinds of vehicles. They conclude that the maximum lateral friction between the road surface and vehicle occurs when the lower part of the sag vertical alignment is located in the middle of the horizontal curve.

Zhai *et al.* (2021) study fluctuation in traffic flows at isolated intersections, and propose an adaptive control based on sequential signal-stage optimisation. In order to maximise the traffic capacity of an intersection during a signal stage, a primary and secondary control mechanism is designed in which the signal-stage phase (SSP) is composed of primary and secondary compatible phases. Numerous simulation experiments demonstrated that the proposed control method can clearly reduce the average vehicle delay.

Patnaik *et al.* (2021) develop roundabout entry capacity models using genetic programming (GP), age-layered population structure genetic programming (ALPSGP) and grammatical evolution genetic programming (GEGP). They studied 27 roundabouts located in eight states in India. The results show that the GEGP model performed better than the GP and ALPSGP models. The findings of the study can be used by traffic planners and designers to estimate roundabout capacity in mixed traffic conditions in developing countries.

Durable asphalt mixtures in road construction provide better whole-life cost and enhance sustainability. Low-maintenance durable road materials reduce closure for maintenance/rehabilitation and associated traffic delay, congestion and air pollution. Veeraragavan *et al.* (2021) highlight the importance and assess moisture damage of asphalt mixes. They develop a system of identification of poor- and good-performance asphalt mixes based on artificial intelligence. A deep convolutional neural network (CNN) was applied to classify the moisture damage potential of the mixes based on images. The predictions from the resulting model were 88% accurate, which is higher than the accuracy of statistical analyses of the results of mechanical tests and black pixel analysis. Implementation of the proposed method in laboratory mix design can help engineers in screening poor mixes quickly and with high accuracy.

Increasing the capacity of subway stations is an important factor to improve users' experience and utilisation and to optimise economic returns. Chen *et al.* (2021) investigate pedestrian node-selection behaviour at automatic fare gates (AFGs) in subway stations. To optimise the capacity of equipment and facilities, a multi-nomial logit model was developed that incorporates environment, pedestrian and interaction characteristics. Application of the model is demonstrated by detailed analyses of influence factors from four aspects along with the utilisation optimisation of AFGs in Beijing West subway station.

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