Should transport agencies in East Asian countries be worried about growing rates of private schooling?

Matthew BURKE [a], Yiping YAN [b], and Abraham LEUNG [c]

[a,c] *Cities Research Institute, Griffith University, Brisbane, 4111, Australia*
[a] *E-mail: m.burke@griffith.edu.au*
[b] *School of Engineering and Built Environment, Griffith University, Brisbane, 4111, Australia*
[b] *E-mail: yiping.yan@griffithuni.edu.au*
[c] *Same as the first author; E-mail: abraham.leung@griffith.edu.au*

Extended Abstract: School geographies are changing in the Asia-Pacific as three key trends in education policy wash over nations in different ways. Public school catchments are increasingly 'unlocked' giving parents choice to send their children to public schools further afield. Government subsidies, some overt and others relatively hidden, are increasing the share of private school enrolments. State education departments are building less small neighbourhood elementary/primary schools and building larger schools that service larger catchments. But what are these trends doing to travel behaviour?

This presentation presents the results of pioneering research on children's travel behaviour to calculate empirical travel behaviour differences between public and private school students, at both elementary and secondary schooling levels. The aims of the presentation are to: reveal differences in rates of private schooling across the region; explore how these three trends impact on cities in terms of their urban structure and urban form; show have high rates of private schooling are impacting on travel behaviour; and, explore what might be useful policy responses for government.

Firstly, the differing rates of private schooling across the Asia-Pacific are shown, ranging from as high as 98% at elementary school level in Macao, to 30% in Australia, 23% in Indonesia, 8% in China, 5% in Cambodia, to only 2% in Vietnam and closer to 1% in Japan. Australia's high private schooling rates make it an excellent place to analyse what impacts higher rates have on catchment sizes, trip distances and, eventually travel behaviour.

Secondly, historical comparisons are made between the layout of schools and urban neighbourhoods over time. In the mid-20th in possibly the Asia-Pacific's most-planned city, Canberra, Australia, each neighbourhood was designed with an elementary school located so no child had to cross a major road. That era is gone. Late 20th and early 21st Century Australia suburbs feature a very different school geography, with a proliferation of difficult to reach schools often located on major roads and a litany of private schools with vast catchments, often in odd locations. A conceptual layout of school geographies and their likely catchment sizes and travel distances is derived from this new landscape, which suggests that these new transport/land use arrangements make walking and cycling to school too hard for many students.

Third, a novel geo-spatial matching approach is used to create what is believed to be the first set of school trips by school type (public/private; elementary/secondary) drawn from a large household travel survey dataset. *South East Queensland Travel Survey* (SEQTS) data from 2017-2019 was analysed, covering Greater Brisbane and the cities of Gold Coast and Sunshine Coast. 2,600 public school students' trips to school and 1,117 private school students' trips to school were included in the final sample. Whether they attended public or private schools, most students are driven to school (72.3% for public schools and 74.6% for

private). But the proportion of students walking or cycling to school was 2.3 times greater for public schools than for private schools (16.8% vs. 7.3%, respectively). Median trip distances were significantly greater for private school students compared to private school students, especially at the secondary school level. Multinomial logistic regression modelling suggests that private school students were less likely to walk/cycle to school than public school students, when controlling for key demographic and built environment factors. Private schools appear to disproportionately contribute to traffic congestion in the SEQ region.

The findings suggest that whilst governments are pursuing the three key school policy trends to either save money or create 'choice' in education markets, they are also creating enormous challenges for school administrators, local governments and especially provincial and local transport agencies. The transport costs of these education policies are, as yet, mostly unidentified but are delivered by education departments and borne by transport departments. The low rates of private schooling in Japan and Vietnam are likely why these nations are retaining high shares of walking and cycling to school. The Australian experience is a cautionary tale for nations like China, where non-residential private schooling is increasing in popularity. The travel behaviour impacts and congestion costs of private schools should be identified and included when weighing up the benefits and costs of national and provincial school policies.

Keywords: Private schools, transport geography, transport and land use, travel behavior