

LSGI Talk Series: Emerging Topic in Geospatial and Urban Science

Urban Morphology and Traffic Congestion

Date: 18 Nov 2021 (Thu)

Time: 16:00 - 17:00

Venue: Online @ zoom

Language: English

Bio:

Dr. Mingshu Wang is a Senior Lecturer (Associate Professor) of Geospatial Data Science at the University of Glasgow (UK). He earned his BS from Nanjing University (China), MSc, and Ph.D. from the University of Georgia (USA). Previously, he was a tenure-track Assistant Professor at the Faculty of Geo-information Science and Earth Observation (ITC), University of Twente (NL). His research focuses on developing and applying GIScience methods and big data analytics to understand urban systems and development. He has received grants from the World Bank, Dutch Research Council (NWO), Chinese Academy of Sciences, and Microsoft Azure. Currently, he is an Editor of Asian Geographer and an Associate Editor of ISPRS International Journal of Geo-Information (IJGI).

Abstract:

Traffic congestion is an ever-increasing issue across urban environments. One potential mitigation strategy is to improve our understanding of how the geographical patterns of urban land use influence congestion. Unfortunately, there is no consensus regarding if more sprawling or dense urban morphologies help mitigate congestion issues. To potentially clarify the conflicting findings of previous studies, we used a detailed spatial metric-based approach and panel regression to quantify the relationships between urban development patterns and congestion in 98 US urban areas from 2001 to 2011. We found that the abundance and spatial configuration of urban land uses were correlated with traffic congestion. Specifically, high degrees of polycentricity for both high-intensity and low-intensity urban land uses were associated with more congestion, while contiguous residential development was correlated with less congestion. Important distinctions were also observed between different congestion measures, as urban morphology exhibited a more substantial influence on overall congestion than rush-hour congestion. Our findings can potentially inform future land use planning by clarifying which urban morphologies alleviate traffic congestion issues.

All are welcome.

To register, please [click here](#) for the details.

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