Measuring Mixed-Land Use and Urban Dynamics

Yang Yue, Yan Zhuang, Jinyun Xie, Anthony Yeh, and Lin Luo

Abstract

Urban dynamics is a consequence of the different types of land use. This study first adopted the Hill numbers to measure land use diversity, and then used a large scale cell tower data, as one of the measurement of urban dynamics. By analyzing the relationship between the urban dynamics and the land use diversity indices, results show that, besides entropy, richness, entropy, and concentration explained a significant amount of variance in the human dynamics. The finding has implications for mixed land use and developing compact cities.

Y. Yue¹, J. Y. Xie²,

Shenzhen Key Laboratory of Spatial Smart Sensing and Services, College of Civil Engineering¹, College of Information Engineering², Shenzhen University, Shenzhen, China, Email: yueyang@szu.edu.cn

Y. Zhuang (Corresponding author)

State key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China, Email: zhuangyan@whu.edu.cn

A. G. O. Yeh

Department of Urban Planning and Design, The University of Hong Kong, HK SAR., Email: anthony.yeh@hlu.hk

L. Luo

Shenzhen Polytechnic, Shenzhen, China, Email:lluowh@gmail.com