

An Exploratory Analysis of Brisbane's Commuter Travel Patterns Using Smart Card Data

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Abstract : Over the past two decades, Location Based Service (LBS) data have been increasingly applied to urban and transportation studies due to their comprehensiveness and consistency. However, compared to other LBS data including mobile phone data, GPS and social networking platforms, smart card data collected from public transport users have arguably yet to be fully exploited in urban systems analysis. By using five weekdays of passenger travel transaction data taken from go card - Southeast Queensland's transit smart card - this paper analyses the spatiotemporal distribution of passenger movement with regard to the land use patterns in Brisbane. Work and residential places for public transport commuters were identified after extracting journeys-to-work patterns. Our results show that the locations of the workplaces identified from the go card data and residential suburbs are largely consistent with those that were marked in the land use map. However, the intensity for some residential locations in terms of population or commuter densities do not match well between the map and those derived from the go card data. This indicates that the misalignment between residential areas and workplaces to a certain extent, shedding light on how enhancements to service management and infrastructure expansion might be undertaken.

Keywords : big data, smart card data, travel pattern, land use

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