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Cooperative **M**obility for
Competitive **M**egaregions

The Extensions and Applications of Megaregional Transportation Planning Model (CM2-70)

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05/01/2022 - 04/30/2023
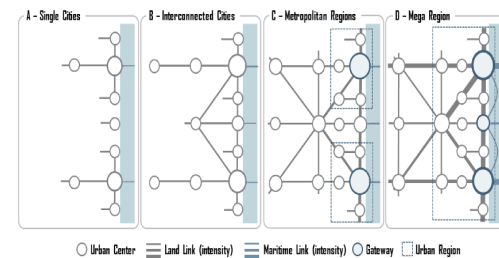
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THE EXTENSIONS AND APPLICATIONS
OF MEGAREGIONAL TRANSPORTATION PLANNING MODEL

Megaregions have become important engines for national economic growth and played a significant role in emerging economies all over the world. The 40 megaregions identified by Florida et al. (2008) accounted for 66 percent of the global economic activities. The economic competitiveness of megaregions in national and international markets has become a major concern due to the increasing connections between the urban areas in globalization (Pan and Chun 2021, Florida et al. 2008). However, there are few models designated for economic and environmental analysis in megaregions. To fill the gaps in literature on megaregion economic and environmental analysis, this research intends to further extend the MTPM by adding functions for economic impact analysis as well as its application for understanding environmental impacts predicted by the output of MTPM.

As a Lowry-type spatial planning model, the extended MTPM aims to conduct input-output analysis for megaregions and report results in MAZ with considerable spatial detail by combining the functions of economic impact analysis, spatial allocation, and transportation modeling. The analytical framework of the extended model consists of multiple components, including input-output analysis module, transportation network modeling module, and spatial interaction analysis module, etc. The input-output analysis module reports the direct, indirect, and induced effects of events. The direct effects are allocated to the directly impacted areas, the indirect effects are allocated to the areas according to the base-year proportions of employment, and the induced effects yielded by household expenditure changes.

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Potential Mega Region Transportation Model