

The Use of Space Syntax in Urban Transportation Planning and Evaluation: Limits and Potentials

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Abstract : Transportation planning is an academic integration discipline combining research and practice with the aim of mobility and accessibility improvements at both strategic-level policy-making and operational dimensions of practical planning. Transportation planning could build the linkage between traffic and social development goals, for instance, economic benefits and environmental sustainability. The transportation planning analysis and evaluation tend to apply empirical quantitative approaches with the guidance of the fundamental principles, such as efficiency, equity, safety, and sustainability. Space syntax theory has been applied in the spatial distribution of pedestrian movement or vehicle flow analysis, however rare has been written about its application in transportation planning. The correlated relationship between the variables of space syntax analysis and authentic observations have declared that the urban configurations have a significant effect on urban dynamics, for instance, land value, building density, traffic, crime. This research aims to explore the potentials of applying Space Syntax methodology to evaluate urban transportation planning through studying the effects of urban configuration on cities transportation performance. By literature review, this paper aims to discuss the effects that urban configuration with different degrees of integration and accessibility have on three elementary components of transportation planning - transportation efficiency, transportation safety, and economic agglomeration development - via intensifying and stabilising the nature movements generated by the street network. And then the potential and limits of Space Syntax theory to study the performance of urban transportation and transportation planning would be discussed in the paper. In practical terms, this research will help future research explore the effects of urban design on transportation performance, and identify which patterns of urban street networks would allow for most efficient and safe transportation performance with higher economic benefits.

Keywords : transportation planning, space syntax, economic agglomeration, transportation efficiency, transportation safety

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