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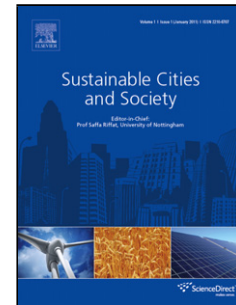
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**Title: The Selection of Compact City Policy Instruments and their Effects on Energy Consumption and Greenhouse Gas Emissions in the Transportation Sector: The Case of South Korea**

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**Abstract:** This paper uses the South Korean case to directly identify the factors that affect local governments' policy instrument choices for achieving the compact city concept and test whether these policy tools lead to low energy consumption and environmentally friendly urban areas. The results of binary logistic regressions show that local governments' socio-economic characteristics and their locations influence the implementation of compact city-related urban policy instruments. The results of hierarchical linear models suggest that there are strong positive associations between greater urbanization and both transport-related energy consumption and transportation-sector greenhouse gas emissions. These results indicate that urban planning for optimal city size, significant compact city characteristics and effective policies with sufficient financing can help reduce transport-related energy consumption and air pollution. Therefore, we need innovative urban planning policies and policy implementation processes to achieve energy efficiency and air quality improvements in the urban context.

**Key Words:** Compact city, political institutions, policy instrument choice, energy consumption, GHG emissions

## **Introduction**

In recent years, the phenomenon of urban sprawl has resulted in numerous urban problems ranging from a lack of infrastructure and increased public service costs (Carruthers & Ulfarsson,

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