

A Relationship between Traffic Violation Types and Serious Traffic Accident Sites: Spatial Patterns of Serious Traffic Accident

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Abstract—This study examines whether different types of traffic violations have distinct impacts on traffic accidents in Seoul and investigates the spatial patterns of these accidents to draw practical implications for traffic safety and prevention. Using data from the Korea Road Traffic Authority, two series of analyses were conducted. The results indicate that traffic hot spot sites in Seoul exhibit significant spatial clustering, with Gangnam-gu identified as the area most prone to accidents for both signal and centerline violations. The pronounced concentration of accidents in this district suggests that traffic incidents tend to cluster in specific locations. Regression analyses further reveal that traffic signal violations are associated with a higher number of accidents and greater casualties.

Keyword—Traffic accident, Traffic violation, Accident severity, Spatial pattern, Hot spots



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