

Evaluating the Impact the Weekday has on Near-Repeat Victimization: A Spatio-Temporal Analysis of Robberies in the City of Vienna, Austria.

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The near-repeat phenomenon refers to the repeat victimization of a place or person which experiences more than one criminal offence at the same or nearby locations within a short period of time. The near-repeat victimization has been repeatedly confirmed in recent research for different crime types such as burglaries or gun shootings. In this article the near-repeat phenomenon is analyzed for each day of the week separately. That is, the near-repeat pattern is evaluated for all consecutive Mondays, Tuesdays, Wednesdays, etc. included in the dataset. These consecutive weekdays represent the fictive set of consecutive dates to allow for spatial and temporal analysis of crime patterns. To test for the presence of near-repeat patterns the Near Repeat Calculator and the Space-Time Getis-Ord G_i^* statistic are comparatively used. The justification for this comparison is based on the assumption that both statistics measure the same near-repeat phenomenon, namely crimes that are both close in space and in time.

The study area for this analysis is Austria, where research on near-repeat victimization has never been done before. In Austria, all reported crimes are being stored in the so-called Security Monitor ("Sicherheitsmonitor", or SIMO for short) since 2004. SIMO is a large database administered by the Criminal Intelligence Service. This research analyzes robberies in public places from 2009 to 2013 in Vienna, Austria, extracted from the SIMO. The overall research goal investigates whether near-repeat patterns of robberies exist by weekdays, and whether these weekday near-repeat patterns differ from each other. A secondary research aim is a comparison between the results from the Near Repeat Calculator and the Space-Time Getis-Ord G_i^* statistic, possibly supporting the assumption that both methods measure the same phenomenon. The results of this research will be shared and discussed with law enforcement agencies in Austria to optimize strategic planning of police resources in combating robbery crimes.

Keywords: near-repeat, Space-Time Getis-Ord G_i^* statistic, crime prediction, robbery, Vienna