



## An Analysis of Spatial Correlates of Terrorism Using Risk Terrain Modeling

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### Summary

Onat investigates terror incidents in Istanbul between 2008 and 2012 through a Risk Terrain Modeling (RTM) framework. The researcher asks five questions (1) In examining past attacks in Istanbul, what types of places did terrorists target? (2) Were these incidents significantly concentrated in space? (3) What features of physical infrastructure exist in the terrorism hotspot neighborhoods? (4) Is there any non-residential feature of environment that was significantly associated with terrorism in Istanbul over the study period? (5) If yes, what is the risk that terrorist acts will be committed around those features? Onat found that acts of terror show a significant pattern around eight features in the environment with implications for prevention surrounding places at the micro-level and counterterrorism efforts.

### Methods

Data used for this study focused on terrorist incidents from the Turkish National Police (TNP) committed between January 2008 and September 2012 and infrastructure geo data in Istanbul. Turkey was chosen as the study area due to security issues and the threat of terrorism historically. Attack type was broken down into Arson, Violent Demonstration, Bombing/Explosive, Armed Assault, Armed Robbery and Invasion. An RTM analysis was used on the police jurisdiction of Istanbul that included 744 neighborhoods. A subset of infrastructure data containing business places, recreational areas, government buildings, NGO's, and others (17 total) were used for features in the environment expected to be related to incident locations. From here, the researcher analyzed the risk for terrorism using RTMDx.

### Results

There were 1,153 terrorist incidents identified among 8 different terrorist groups where 340 neighborhoods out of the 744 experienced incidents of terror. Of which, 23 neighborhoods (3%) experienced 39% of all incidents. Grocery stores and eateries were the most common feature in the neighborhoods. Out of the 17 risk factors used in RTMDx, 8 were found to be significantly related to terrorist incidents: bakeries, religious facilities, bar/club, grocery stores, franchise, office block, NGO, and eateries. Bakeries followed by religious facilities were the riskiest overall facilities, this could be based on bakeries function in society and the ideological background of religious facilities in Istanbul.

### Implications

Identifying high risk places provides a starting point for crime prevention efforts since the models indicate what features of the environment relate to terrorist incidents. This could lead to the development of defensible spaces where interventions could be targeted (place-based).