World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:11, No:10, 2017

Using Emerging Hot Spot Analysis to Analyze Overall Effectiveness of Policing Policy and Strategy in Chicago

Authors : Tyler Gill, Sophia Daniels

Abstract : The paper examines how accessing the spatial-temporal constrains of data will help inform policymakers and law enforcement officials. The authors utilize Chicago crime data from 2006-2016 to demonstrate how the Emerging Hot Spot Tool is an ideal hot spot clustering approach to analyze crime data. Traditional approaches include density maps or creating a spatial weights matrix to include the spatial-temporal constrains. This new approach utilizes a space-time implementation of the Getis-Ord Gi* statistic to visualize the data more quickly to make better decisions. The research will help complement socio-cultural research to find key patterns to help frame future policies and evaluate the implementation of prior strategies. Through this analysis, homicide trends and patterns are found more effectively and recommendations for use by non-traditional users of GIS are offered for real life implementation.

Keywords : crime mapping, emerging hot spot analysis, Getis-Ord Gi*, spatial-temporal analysis
Conference Title : ICSSG 2017 : International Conference on Spatial Statistics and Geostatistics
Conference Location : New York, United States
Conference Dates : October 05-06, 2017