ACCOUNTING FOR SPATIAL VARIATIONS USING SPATIAL AUTOCORRELATION AND FUZZY CLASSIFIERS ALGORITHM

by

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It is extensively anticipated that future GIS will have augmented analytical capacities taking it ahead of being proficient display and database management mechanisms. The study confers the integration of spatial autocorrelation with fuzzy clustering techniques as a new approach to assess the potentially powerful capabilities of spatial analysis within GIS.

The approach is based on the fact that unlike the spatial autocorrelation techniques that compute the correlation between attribute values and location, the fuzzy clustering algorithms compute the concentration of a spatially distributed attribute variable. The dataset used for the experiment is the child lead poisoning incidences in US both at county and state levels for the year 2004 obtained from the Centers for Disease Control and Prevention (CDC).

The findings of the study demonstrate that the combination of the inexact knowledge by means of fuzzy clustering algorithms and the exact knowledge results from the measures of spatial autocorrelation provides an effective way to account for spatial variations, especially notable with regards to the public health data analysis.
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