ABSTRACT

ADE TRISETYO. Spatial Outlier Detection On Bogor City Regional Election Data Based On Polling Center. Under the direction of HARI AGUNG ADRIANTO.

Spatial outlier is a local instability (in values of non-spatial attributes) or a spatially referenced object whose non-spatial attributes are significantly different from the object surrounding it, even though the attributes may not significantly different from the entire population. Detecting spatial outlier is very useful in the application of geographic information system as well as in the spatial data base. This research focuses on the spatial outlier on Bogor City Regional Election Data in the 2008 election. Before starting the spatial outlier detection, the spatial outlier model was done visually by using an equal interval and natural breaks methods. This research uses the iterative ratio and iterative z-value algorithm. Both algorithms uses an iterative process. With this iterative process done by both algorithm, the falsity of a spatial outlier detection can be minimized. One example algorithm that potentially make a false detection is Moran scatterplot. For each iteration, there will be one detected spatial outlier. To determine a spatial outlier, a comparison function is used. On iterative ratio algorithm, a comparison function used is ratio function. On iterative z-value algorithm, a comparison function used is the gap function which is later normalized. A polling center’s data is said to be a spatial outlier if its value out of a comparison function exceeds the threshold. Threshold used in this research is 3, it means that number of spatial outlier detected is 2% - 5% from total data. Based on the research done, the result being detected as the spatial outlier use in iterative ratio and iterative z-value algorithm owns the difference in the detection amount. Iterative ratio and iterative z-value algorithm can also reduce a false detection which is done by Moran scatterplot.

Keywords : spatial outlier, iterative z-value algorithm, iterative ratio algorithm.