

## Spatial Analysis of Billboard Distribution

### *Abstract*

Regional autonomy is the surrender of authority from the center to the regions to regulate and manage the interests of the local community according to their own initiatives based on the aspirations of the people, as stated in Law No. 32 of 2004 concerning Regional Government. With the existence of regional autonomy, the regional government is expected to be better to explore the potential of local revenue sources in financing all regional development activities through increasing Original Local Government Revenue (OLGR). One component of OLGL that has a contribution in Pekalongan Regency is Regional Tax. Regional tax, one of which is advertisement tax, is one component of the OLGL that contributes to regional development. Clustering algorithm, one of which is k-means clustering can be applied to advertisement tax data so that it can be known that ad grouping is based on distance from the market, distance to traffic light and vehicle volume. From each of these groupings can also be seen each of the characteristics so that it is known which groups have the largest amount of tax and the number of tax donations. From this research, a web-based system has been successfully developed that is able to process the spatial analysis of the distribution of billboards with the clustering method in Pekalongan Regency. From the results of clustering analysis, it can be seen that the Subdistrict passed by the coastline has a correlation with the high amount of advertisement tax in Pekalongan Regency, this can be seen in the results of clustering using the k-means algorithm, where advertisements are in clusters that have average quantities the highest taxes are all in the sub-district that is crossed by north coast way. The closeness to the market and traffic light has a correlation with the high amount of billboard bill advertising tax in Pekalongan Regency, wherein the clusters that have the highest volume of vehicles the average size of the billboard tax is high.

**Keywords:** clustering, spatial analysis, k-means, advertisement tax, OLGR

