

ABSTRACT

FUZZY TOPSIS METHOD FOR DETERMINING EARTHQUAKE PRONE AREA FROM EARTHQUAKE VIBRATION DATA ANALYSIS

By

Yosianus Antonio

yosianusantonio@gmail.com

Indonesia has a great potential for natural disasters with total natural disasters recorded by the national natural disaster management agency 5,437 natural disasters occurred. The most natural disasters were tectonic earthquakes recorded 50 times in 2019 but the biggest contributor to damage to homes, facilities, and second lives after the impact was the tsunami.

The cause of the many losses from earthquakes is the detection, notification, and supervision of earthquakes which are still often too late. This study aims to analyze tectonic earthquake vibration data to obtain information to conduct surveillance of areas indicated by earthquake-prone areas.

By requiring a data warehouse to collect data and Extract, Transform, Load (ETL) process uses Pentaho data integration which converts data into OLAP then tectonic earthquake vibration data is analyzed using fuzzy topsis method to determine earthquake-prone areas, from a certain period then data is displayed using Desktop Tableau which provides information to the regional service to find out earthquake-prone areas, the risk of loss and the possibility of tsunamis from the impact of tectonic earthquake-prone areas to be monitored, mitigated and notified to the public.

Keywords : *Tectonic Earthquakes, ETL, Pentaho Data Integration, OLAP, Fuzzy Topsis, Tableau Desktop*

