

Malaysian Journal of Mathematical Sciences

Journal homepage: https://einspem.upm.edu.my/journal



Grouping District and Cities for Environmental Sanitation Indicators of SDGs Achievement in East Java

Permatasari, E. O* and Zain, I.

Department of Statistics, Institut Teknologi Sepuluh Nopember, Indonesia

E-mail: erma.oktania@gmail.com *Corresponding author

> Received: 26 April 2019 Accepted: 2 June 2021

Abstract

Environmental sanitation is the health status of an environment that includes housing, sewerage, and clean water supply. Guaranteeing the availability and management of sustainable water and sanitation are the global goals of Presidential Regulation Number 59 of 2017 signed by President Joko Widodo on July 4, 2017, to fulfill the government's commitment in achieving the achievement of Sustainable Development Goals (SDGs). East Java Province, as one of the provinces that do Presidential Regulation Number 59 of 2017, make efforts to improve the condition of environmental health and basic sanitation by implementing Total Sanitation Based Community (STBM). STBM is an activity that focuses on integrated preventive and promotive efforts to trigger and maintain the sustainability of changes in the behavior of clean and healthy living communities. Despite efforts to improve environmental health and basic sanitation conditions have been done, but there are still gaps in some district and cities in East Java Province. Suppose for a healthy house, the coverage for Trenggalek District that fulfill for healthy house is 93.97%, while for Sumenep District is 6.69%. The percentage of district and cities that have access to proper sanitation, with the best sanitation access is Madiun City of 100% and the lowest is Situbondo District of 13%. Based on the problem, this research was done for grouping district and cities in East Java Province based on environmental sanitation indicators, so it is expected to provide information about the groups of districts and cities that have good access and the less good of environmental sanitation. This information can also be a reference for East Java Provincial Health Office in making policies or improvement efforts for regions belonging to district and cities that have poor environmental sanitation access. The grouping was done using robust clustering using links (ROCK) method. The results show that the optimum grouping was two groups.

Keywords: sanitation; district; cities; grouping; East Java province.