

**DESIGN OF A GEOGRAPHIC INFORMATION SYSTEM (GIS) USING THE
K-MEANS CLUSTERING METHOD FOR THE SPREAD OF DENGUE
HEMORRHAGIC FEVER (DHF) IN JEMBER REGENCY**

Savira Puteri Wulandari

*Health Information Management Study Program
Department of Health*

ABSTRACT

*Dengue Haemorrhagic Fever (DHF) is a disease caused by *Aedes aegypti* and *Aedes albopictus* mosquitoes. The bite of this mosquito does not only have mild effects but can endanger health and lead to death. Based on the achievement of the performance results of the DHF program in Jember Regency in 2022, in terms of three indicators, namely the morbidity rate or Incident Rate (IR), the death rate or Case Fatality Rate (CFR), and the Larvae Free Rate (ABJ) that these three indicators still have not met the target which has been established by the Jember District Health Office, therefore it is necessary to increase public awareness as a first step to prevent a spike in DHF cases in 2023. This study aims to create a digital map along with its spread which is divided into three groups, namely high (C1), medium (C2), and low (C3) using the K-Means Clustering method. This type of research is Research and Development research by designing a Prototype system and using the Quantum GIS application to create maps and MySQL as a database. The results of this study are a system in the form of a website that can display a map of the distribution of DHF based on its group, graphs, and report tables which are easily updated by the website administrator. This geographic information system is expected to be able to assist officers in promoting integrated health programs according to the severity of the area and provide education to the public to prevent and be aware of the spread of DHF in the Jember Regency.*

Keywords: *DBD, Geographic Information System, K - Means Clustering, Website*