## ABSTRACT

**COMPARISON OF SPATIAL AUTOREGRESSIVE (SAR) AND GEOGRAPHICALLY WEIGHTED REGRESSION (GWR) BASED ON SIMULATION STUDY**

**by**

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Spatial regression is an analysis that evaluates the relationship between one variable and several other variables that have spatial effects on several locations. There are two basic spatial concepts, namely spatial dependency and spatial heterogeneity. There are supervised learning techniques for regression that model spatial dependency, one of them is Spatial Autoregressive (SAR). In contrast to SAR, Geographically Weighted Regression (GWR) is a spatial regression method commonly used in data containing spatial heterogeneity. This study will compare which method is better between SAR and GWR for modeling spatial data if the data contains both spatial aspects, namely spatial dependency and spatial heterogeneity using simulation study. The simulation results of this study, based on bias, MSE and AIC of each model, it has been obtained that the SAR method is better than the GWR method for modeling data containing these two spatial aspects (spatial dependency and heterogeneity).



**Keywords:** Spatial, Dependency, Heterogeneity, SAR, GWR.