

# **Geographically Weighted Zero-Inflated Poisson Regression (GWZIPR) for Excess Zero Problems and Heterogeneity of Spatial Data: Application for Number of Diphtheria Disease Cases in West Java Province in 2014**

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## **Abstract**

Poisson regression is used to find the relationship between independent and dependent variables that is distributed by poisson and have equidispersion assumption where have same value for mean and variance. In its application, Excess Zero occurs in data, this will cause overdispersion such as mean value greater than variant, then the Poisson regression can no longer handle it, so that other method is needed to correct the deficiencies. Zero-Inflated Poisson Regression (ZIP) is a method that can handle the problem globally, if the data of each observation location influenced by spatial effects that are not always homogeneous variations at each location of observation or called spatial heterogeneity caused by several things such as differences in geographic, socio-cultural conditions, to different economic policies at each location. This will be a problem if the data is still analyzed without regard to both of them simultaneously. In this study consider these two things into a Geographically Weighted Zero Inflated Poisson Regression (GWZIPR) model to handle both of these. And applied to cases of infectious diseases in West Java province 2014, and compared with other models. From the calculation results can be that the value of AIC GWZIPR smaller than other methods.

## **Keywords**

ZIP, GWZIP, Overdispersion, Spatial Data, GWR.

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## **Biographie**

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