STATISTICAL MODELING OF THE WATER QUALITY OF PASIG RIVER

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JORDAN B. DAMIAN

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Abstract

The study explored statistical modeling in explaining characteristics of dissolved oxygen in terms of other water quality indicators of the Pasig River. The model combines the river's physical, chemical, and biological attributes that can provide useful information in examining environmental management scenarios such as monitoring water pollution levels. The model made use of the five water quality indicator data of various monitoring and sampling stations along the stretch of the Pasig River.

The data indicates that Pasig River is still in an alarming pollution status, particularly in terms of dissolved oxygen level that is 30% off the threshold. Three separate modeling approaches were developed, compared, and used to predict the dissolved oxygen level of the river. The prediction ability of a ***linear regression model, general linear model, and linear mixed-effects model*** were analyzed. The modeling system is an innovation on the integration of otherwise separate approaches. The linear mixed-effects model exhibits good prediction performance for dissolved oxygen and such models maybe used as tools in planning and management of the river.