Investigating Dissimilarity in Spatial Area Data Using Bayesian Inference: The Case of Voter Participation in the Philippine National and Local Elections of 2016

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Abstract

A commonly studied characteristic of area data is the assessment of similarity (or absence thereof) among neighboring areal units. However, most methodologies do not measure uncertainties which are likely outcomes of sampling variation and do not consider spatial autocorrelation. This paper explores the ability of Bayesian modeling to address the said situations. It attempts to apply this modeling technique to the voting participation statistics in the Philippine National and Local Elections of 2016.

Keywords: conditional autoregressive (CAR), proximity matrix, dissimilarity, voter turnout