

Covariate Adjustment in Weighted Kappa Coefficient

Sevilay Karahan¹, Eda Karaismailoglu, Dincer Goksuluk

¹sevilaykarahan@gmail.com, Department of Biostatistics, Hacettepe University

Kappa coefficient is a widely used measure for assessing the agreement in epidemiologic researches. When the number of categories is more than two, Kappa coefficient estimates the absolute agreement conservatively. Weighted kappa coefficient is preferable when one wishes to show agreement more liberally. In addition to the effect of number of categories covariates such as age, gender etc. may affect the magnitude of Kappa coefficient. There are some approaches to adjust the effect of covariates on Kappa coefficient such as generalized estimating equation (GEE) and conditional logistic regression. In this study, adjusting the effect of weighted kappa coefficient will be discussed and evaluated on a real-life example. Finally, simulation study will be done to evaluate the effect of covariates on the weighted kappa statistic for various levels of covariates.

Keywords: Agreement, Kappa, weighted kappa, covariate adjustment.