Lipsitz, Stuart R.; **Williamson, John**; **Klar, Neil**; **Ibrahim, Joseph**; **Parzen, Michael**
A simple method for estimating a regression model for κ between a pair of raters. (English)
Zbl 1002.62523
J. R. Stat. Soc., Ser. A, Stat. Soc. 164, No. 3, 449-465 (2001).

Summary: Agreement studies commonly occur in medical research, for example, in the review of X-rays by radiologists, blood tests by a panel of pathologists and the evaluation of psychopathology by a panel of raters. In these studies, often two observers rate the same subject for some characteristic with a discrete number of levels. The κ-coefficient is a popular measure of agreement between the two raters. The κ-coefficient may depend on covariates, i.e. characteristics of the raters and/or the subjects being rated. Our research was motivated by two agreement problems. The first is a study of agreement between a pastor and a co-ordinator of Christian education on whether they feel that the congregation puts enough emphasis on encouraging members to work for social justice (yes versus no). We wish to model the κ-coefficient as a function of covariates such as political orientation (liberal versus conservative) of the pastor and co-ordinator. The second example is a spousal education study, in which we wish to model the κ-coefficient as a function of covariates such as the highest degree of the father of the wife and the father of the husband. We propose a simple method to estimate the regression model for the κ-coefficient, which consists of two logistic (or multinomial logistic) regressions and one linear regression for binary data. The estimates can be easily obtained in any generalized linear model software program.

MSC:

62P10	Applications of statistics to biology and medical sciences; meta analysis
62J99	Linear inference, regression

Cited in **2** Documents

Full Text: DOI