Abstract

Goodman and Kruskal's lambda (λ) is a measure of association between two nominal variables in a two-way cross-classification table. The traditional asymptotic test (TAT) of independence for λ is not satisfactory because it works only when sample size is large. In this paper, a bootstrap method is proposed for testing the independence hypothesis using the λ coefficient. Simulation studies are conducted to investigate the performance of the proposed method, and results are compared with that from TAT. Simulation results indicate that when sample size is small, the bootstrap-based test (BBT) was superior to TAT. Specifically, BBT has a better control of Type I error when the null hypothesis is true. Moreover, BBT is more powerful than TAT because it has higher chance to reject incorrect null hypotheses.