



**Sixth Bayesian, Fiducial, and Frequentist (BFF6)
Conference on Model Uncertainty
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SPEAKER TITLES/ABSTRACT

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“Objective Bayesian Analysis for a 2 x 2 Contingency Table”

In categorical data analysis, the odds ratio is an important approach to quantify the strength of association between two variables in a contingency table. Here, we present a novel Bayesian approach to analyze an unrestricted 2x2 table along with several constructed nuisance parameters using objective Bayesian methods. The prior for the odds ratio has many desirable properties such as propriety, symmetry and finite moments on log scale, and others. Simulation results indicate that the proposed approach to this problem is far superior to the straightforward and widely used frequentist approaches that dominate this area as well as other objective candidates. Real data examples also typically yield more sensible results, especially for small sample sizes or for tables that contain zeros.