

Abstract

A general statement of the interval estimation problem of two proportions ratio according to data from two independent samples is considered. Each sample may be obtained in the framework of direct or inverse binomial sampling. Five asymptotic confidence intervals are constructed in accordance with different types of sampling schemes. Main probability characteristics of intervals are investigated by the Monte-Carlo method: coverage probability, median, mean and standard deviation of intervals length. The results of the simulations show that we can arrange new confidence intervals in descending order according to the size of the regions of values where their application is recommended as follows: direct-direct, direct-inverse when the number of successes in the second sample is fixed as in the first experiment, direct-inverse when the true value of variance is used, and inverse-inverse sampling schemes. Sufficiently complete review of the literature for the problem is also presented.

Key Words: Confidence Intervals, Ratio of Binomial Proportions, Inverse Binomial Sampling, Asymptotic Confidence Limits.