

The APP for Estimating the Mean in Both Log-normal and Gamma Populations and Robustness for Assumption Violations

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Abstract

Although the literature on the a priori procedure, designed to help researchers determine the sample sizes they should use in their substantive research, is expanding rapidly, there are two important limitations. First, there is a need to expand to new popular distributions, log-normal and gamma distributions, and the present work provides those expansions. Second, there is a need to test the consequences of wrong distributional assumptions; for example, assuming a log-normal distribution when the population follows a gamma distribution, or the reverse. The present work addresses the limitations with respect to estimating population means, and it includes computer simulations, links to free and user-friendly programs that researchers can utilize for their own research, and two examples involving real data sets for illustrations of our main results.