

Extending the A Priori Procedure (APP) to Analysis of Variance Models under Normality.

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Abstract: The a priori procedure was designed as a pre-data procedure whereby researchers could find the sample sizes necessary to ensure that sample statistics to be obtained are within particular distances of corresponding population parameters with known probabilities. Researchers specify desired precisions (distances of sample statistics from corresponding population parameters) and desired confidences (probabilities of being within desired distances), and this procedure provides necessary sample sizes to meet precision and confidence specifications. Although the a priori procedure has been devised for a variety of experimental paradigms, these have all been simple. The present article constitutes its extension to analysis of variance models. A fortunate side effect of the equations to be proposed is an improvement in efficiency even for a paradigm that fits a previously published article.

Keywords: the a priori procedure; required sample size; contrasts; analysis of variance model; confidence; precision