ANNOUNCEMENTS

Publication Policy Regarding Monte Carlo Studies

In recent years *Psychometrika* has published, and will continue to publish studies that employ Monte Carlo procedures. It seems appropriate, therefore, for this journal to make explicit its policies for evaluating manuscripts that describe Monte Carlo experiments. Authors are expected to pay close attention to these guidelines, and to ensure that their experiments conform to these standards.

Appropriate Use of Monte Carlo Techniques

Monte Carlo studies should be employed only if the information cannot reasonably be obtained in other ways. The following are probably the most common situations in psychometrics where the method may be appropriate:

(a) Determination of sampling distributions of test statistics, or comparisons of estimators, in situations where analytic results are difficult to obtain, e.g., when the robustness of a test statistic is investigated. It is desirable that asymptotic results or analytic approximations to Monte Carlo results be included where possible.

(b) Comparison of several algorithms available to perform the same function, or the evaluation of a single algorithm. It is very important that the objectives and limitations of such studies be carefully and explicitly considered. Monte Carlo evaluations are most useful when the algorithms examined are fairly well developed and in reasonably widespread use, because it is typically the case that most algorithms undergo major changes in their early life; consequently premature comparative evaluation is of limited utility.

Extensions of Previous Work

Minor extensions of previously published Monte Carlo studies will generally not be acceptable. Where an extension is deemed to be of sufficient importance to warrant publication this will almost always be in the form of a Note.

Design and Analysis

The experimental design and statistical treatment of results should be expert, not merely adequate: in a quantitative journal the data analysis should be exemplary. High standards in generality, validity, efficiency, and the tabular and graphical presentation of results are imposed. Succinct descriptions of the findings, accompanied by a compact but comprehensive display of the results, are to be preferred to extended discussion. The appropriate use of significance tests is encouraged, but where there is any doubt regarding their applicability authors are expected to demonstrate that the requisite conditions for such testing apply.

Trustworthiness of the Results

It is the author's responsibility to ensure that alterations made to publicly available programs have not affected the performance of such programs, e.g., by running specially constructed test cases using both the original and altered programs. In addition, authors must be prepared to provide a listing of the program which clearly indicates *every* change made to the proprietary program or perhaps to run a test case, if so requested by a referee. Although not a prerequisite for publication it is highly desirable that interested readers have access to the raw data. This may be effected in a variety of ways, the most convenient probably being deposition in microform in an archive such as the A.D.I. In any event, a referee may request the author to provide some, or all, of the raw data during the review process since problems occasionally do arise where the difficulty might be quickly resolved by such an expedient.

The accuracy of summary statistics should be indicated by reporting error bounds, estimated standard errors, or by similar devices.

Local Minima

Since many Monte Carlo experiments involve the examination of the behavior of rather complicated iterative procedures that do not guarantee convergence to the global optimum it is essential that authors deal carefully with the possible effects on the results. In particular empirically based estimates of the probability of converging to local minima in a variety of situations are desirable. Additionally, the severity of this problem, especially in practical terms, should be discussed.

Random Number Generation

Supporting references to the adequacy of random number generators employed should be cited. It should be noted that the use of system default seeds is inappropriate and unacceptable.

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Error Models

Distributional assumptions should be justified by reference to real data. The author should convince the reader that the error distribution employed makes empirical sense. It may be appropriate to state why that particular distribution, as opposed to other plausible candidates, has been used. In many situations the use of several different error models will be sensible in order to illustrate the effects of extremes.

Examples

A number of good examples are to be found in the literature: for instance, Gleason & Staelin [1975], McDonald [1976], Olson [1974], Ramsay [1977], and Yuen & Dixon [1973]. Authors are also directed to the excellent article by Hoaglin & Andrews [1975] and the comprehensive text by Chambers [1977] for further discussion and advice.

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