COMPUTER IMPLEMENTATION OF MULTIPLE COMPARISONS WITH THE BEST AND SELECTION PROCEDURES

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RESEARCH SUMMARY

The lack of computer software for Ranking and
Selection has often been cited as a reason for
it not having caught on in practice (Hayes 1982).
Actually, this lack of software was a manifes-
tation of some deeper perceived difficulties
with practical usage, we believe. It was per-
ceived that Bechhofer's (1954) Indifference
Zone selection type inference was unavailable
for single-stage experiments. The Multiple
Comparisons with the Best (MCB) result of Hsu
(1981) showed that not only is it available for
single-stage experiments, it can be given
simultaneously with Gupta's (1965) Subset
Selection inference without decreasing the
minimum confidence level of either. It has also
been perceived that the unequal sample size case
requires more complex methodologies than the
equal sample size case. It is pointed out in
Hsu (1983) that, so long as the analysis is
performed on the computer, there needs to be no
difference in methodology between the two cases.
Based on these recent developments, a computer
package has been written for Multiple Comparisons
with the Best. Given the data (equal sample
size or not) and the desired confidence level
$P*$ $(= 1 - \alpha)$, the first page output includes
Subset Selection inference and Indifference
Zone selection inference (extended to single-
stage experiments), while the second page output
gives the confidence intervals inference of
Hsu (1981, 1982). All the inferences are
guaranteed to be correct simultaneously with a
probability of at least $P*$. The result of
analysis of some water filter data using an
earlier version of the package has been reported
in Lorenz, Hsu, and Tuovinen (1982).

ACKNOWLEDGEMENT

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