

## META\_SAS: A METHOD FOR DETECTING MODERATORS AFTER A META-ANALYSIS

ABRAHAM SAGIE & MENI KOSLOWSKY

SCHOOL OF BUSINESS ADMINISTRATION AND DEPARTMENT OF PSYCHOLOGY  
BAR-ILAN UNIVERSITY  
RAMAT-GAN, ISRAEL

The use of meta-analysis to integrate and summarize findings has increased substantially in the past few years. META\_SAS is a meta-analysis program that corrects for artifacts and tests for the existence of moderators. It uses some of the new approaches to this problem that have been suggested recently. The program yields information on five different measures for detecting moderators: (1) SH-75% rule for uncorrected  $r$ ; (2) SH-75% rule for corrected  $r$ ; (3) the  $Q$  statistic; (4) credibility intervals around the corrected  $r$ ; and (5) the  $U$  statistic. The first three measures are described in detail by Hunter and Schmidt (1990), the fourth is discussed by Whitener (1990), and the last is suggested by Spector and Levine (1987).

The main artifacts corrected by META\_SAS are sampling error, predictor reliability, criterion reliability, and range restriction.

The program was developed in a VM environment and uses the Macro facility within the SAS (Statistical Analysis System, 1982) software package. It can run on any system that supports SAS. The investigator first enters the data in the form of correlations into an input file. Afterwards relevant parameters such as reliability, range restriction, and sample size are inserted into META\_SAS. The output includes uncorrected and corrected mean and variance of  $r$  as well as the above tests for the existence of moderators.

The program can be obtained from the authors as a listing or on a 5.25 inch floppy disk at a cost of \$50. Orders can be sent to Abraham Sagie, School of Business Administration, Bar-Ilan University, Ramat-Gan 52900, Israel.

### References

- Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis: Correcting error and bias in research findings*. Newbury Park, CA: Sage.
- Spector, P. E., & Levine, E. L. (1987). Meta-Analysis for integrating study outcomes: A Monte Carlo study of its susceptibility to Type I and Type II errors. *Journal of Applied Psychology*, 72, 3–9.
- Statistical Analysis System (1982). Cary, NC: SAS Institute.
- Whitener, E. M. (1990). Confusion of confidence intervals and credibility intervals in meta-analysis. *Journal of Applied Psychology*, 75, 315–321.

## LOGIC PUZZLES

Balloons Software, a new educational software company, has developed a disk of logic puzzles that might be helpful in understanding more about human cognitive processing. The interesting feature about these logic puzzles is that the easier puzzles can be played by kindergarten students, while the more difficult puzzles can challenge college level students. A gentle gradient of difficulty exists between the easiest and most difficult puzzles.

Balloons Software would be interested in donating free copies of this software to any researchers who might use this software in their studies. The software runs on any 64k Apple II computer. For further information contact:

Phil Shapiro  
Balloons Software  
5201 Chevy Chase Parkway, NW  
Washington, DC 20015  
(202) 244-2223  
Internet: pshapiro@pro-novapple.cts.com