PROGRAM ABSTRACTS/ALGORITHMS

Computer programs for the semantic differential: Further modifications

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An earlier notice (Lawson & Metivier, 1980b) informed of the availability of and provided a description, with rationale, of several semantic differential programs (Lawson, 1979; Lawson & Metivier, 1980a). The original nine programs have recently been condensed into three programs, which have been further refined and augmented. There are also four new programs.

Input. The initial program reads data in the form of scale responses by concept (nine subscales for each concept) for each respondent. Concepts may be presented to respondents in randomized order and polarity, thus avoiding position effects.

Output. The programs yield: (1) means, standard deviations, and standard errors for each subscale on each concept; (2) evaluation, potency, and activity (EPA) means, standard deviations, and standard errors; (3) Osgood D (distance) values for all concepts; (4) the correlation of distance measures obtained with EPA scores with D values; and (5) tests of significance of D values with key reference concepts, such as good, bad, strong, weak, active, and passive (the user may choose any reference concepts).

The additional programming provides: (1) a converted standard score for each concept on a scale from 0 to 100 along the selected dimensions, and (2) tests of significance for D values on each concept between two samples using the Wilcoxon test for matched samples, or the Mann-Whitney for independent samples, whichever is appropriate.

There are four new programs. The first prints semantic differential scale packets ready for use by respondents. Each concept to be rated has nine subscales. There are six sets of scales on a standard-sized computer sheet. The polarity of the scales is alternated, and the order of the concepts can be randomized so that no two respondents have the same order. The second program does a three-dimensional plot of how the concepts position

themselves. This plot is based upon the EPA scores and, on the average, correlates about .95 with results from the more precise Osgood D method. The plot provides a good approximation of how a three-dimensional model built from either method would appear. The third program computes t tests beween the means of two samples (e.g., men vs. women) on E (evaluation), P (potency), and A (activity) scores. The fourth program calculates correlations between scores on each concept with two samples, as men versus women or test-retest.

Capacity. All but one of the programs are written in standard FORTRAN 77 for use on a Burroughs 6800. The remaining program, also written for use on a Burroughs 6800, is a FORTRAN IV program with a COBOL sort routine bound into it. With another computer, adjustments might be needed, such as the COBOL routine being replaced by a FORTRAN sort routine. The programs handle up to 109 concepts on nine subscales. The number of cases is limited by the size of the arrays used in the programs. The State University College, Fredonia, NY, programs can handle up to 50 cases. However, when two groups are compared, as men versus women, 50 cases in each group can be compared.

Availability. A listing of the programs and of the directions for running them has been deposited in the ERIC system (Lawson, Metivier, & Metivier, in press). For further information about the programs, contact: Barbara L. Metivier, Computing Services, State University College, Fredonia, NY 14063.

REFERENCES

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