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An Empirical Study of Scoring Methods for the Conover Driving Attitude Inventory

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PRESENTATION OF PROBLEM

The measurement of driving attitudes has followed in the wake of various studies and statistical data indicating that improper attitudes are responsible for an unduly high percentage of accidents. Certain of these tests have limitations, one of which is an economical method of scoring.

Conover (Conover, 1947) used a scoring method such that the values 0, 1, 2, 3, 4, are assigned respectively to the responses designated as; most displeasing, displeasing, indifferent, pleasing, and most pleasing, for the positive items, and to avoid negative scores the values 4, 3, 2, 1, 0, are assigned respectively to the same responses; most displeasing, displeasing, indifferent, pleasing, and very pleasing, on the negative items. Summing the positive items according to the values given and the negative items by the reverse scoring system, the score for an individual is obtained.

The Conover Driving Attitude Inventory is designed to measure the attitudes of individuals toward factors shown to be important in safe driving. An individual's attitude toward specific factors, as indicated by his response to the items of the scale may be considered to constitute his attitude toward safe driving in general. In other words it is a test of one's reactions to everyday driving experiences while behind the wheel. One-hundred fifty items make up the scale, thirty-five of which are considered positive items, thirty negative, and the remaining eighty-five are considered as fillers.

METHODS AND PROCEDURE

In an attempt to find the best and most economical way of scoring the Conover scale several possible scoring methods were used. By mathematical calculation it was shown that certain of these scoring methods give identical results, but an empirical check on these calculations was deemed advisable. Eighty-three cases were used and the scoring methods checked were:

A. The method used by Conover — positive items scored 0, 1, 2, 3, 4, added to negative items scored 4, 3, 2, 1, 0.

B. Positive items scored 1, 2, 3, 4, 5, added to negative items scored 5, 4, 3, 2, 1.

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    C. Positive items scored 0, 1, 2, 3, 4, subtracting negative items scored 0, 1, 2, 3, 4.

    D. Positive items scored 1, 2, 3, 4, 5, subtracting negative items scored 1, 2, 3, 4, 5.

Methods B, C, and D correlate .98, .98, and .97 respectively with method A. Errors in machine scoring of the IBM answer sheets probably account for the difference between these correlations and unity.

Two other possibilities of scoring were correlated with method A. The relationship of positive score to total score was .90. The relationship of negative score to total score was .86. In both cases the correlation is spurious and must be considered only relatively.

CONCLUSIONS

This special study of scoring methods to be used on a driving attitude inventory was made to ascertain the most practical and direct method of obtaining a representative score. The following conclusions seem warranted:

1. By mathematical proof and empirical verification it is shown that the four methods of scoring studied are practically identical.

2. There is some evidence that the positive items are marked differently than the negative items. This observation is subject to further study in light of the possibility that there may be a tendency for markings to be adjusted to obtain the score desired.

3. In case it can be shown that positive and negative items do not give differential results it would save considerable time to construct such scales as herein discussed with all items positive.

4. This study suggests the need for scrutinizing scoring methods of a number of scales and tests of similar type of construction in the interest of economy.

Reference

Conover, Donald W. 1947. A preliminary analysis of attitudes related to driving. Proc. Iowa Acad. of Sci. 54:227-229.

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