

SELECT3: A BASIC program for determining the consequences of using a selection procedure

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SELECT3 is a BASIC program that allows the user to examine the results of using a particular selection procedure. A pair of programs (SELECT1 and SELECT2, Mullen, 1984) previously were developed to illustrate basic bivariate selection principles. SELECT3 complements these two programs: it calculates the mean criterion score obtained by selected job applicants as a function of the selection ratio (or predictor cutoff) and the selection procedure's validity coefficient. This program reproduces the results obtained through the use of the Naylor-Shine table (Naylor & Shine, 1965). In addition, SELECT3 calculates a conservative estimate of the dollars saved per year per applicant hired. This approach to examining the consequences of using a selection procedure provides a means of translating the utility of a selection procedure into a dollars-and-cents metric (cf. Brogden & Taylor, 1950; Cronbach & Glesser, 1965; Schmidt, Hunter, McKenzie, & Muldrow, 1979). The techniques implemented by this program could be useful to academicians teaching industrial/organizational psychology courses, as well as to practitioners in applied settings.

Input. After being prompted to enter names for the predictor and the criterion, the user is asked whether he/she knows the mean and standard deviation (SD) for the criterion; if so, the user is prompted to enter these statistics. Similar prompts then occur for the mean and SD of the predictor. While these values are not essential for the operation of this program, the inclusion of these means and SDs results in a more detailed output.

Next, the user is prompted to enter the average yearly salary for entry-level applicants, and then to enter the validity coefficient for prediction. Finally, the user must enter either the selection ratio (i.e., the number of job openings divided by the number of applicants), or the predictor cutoff score (in Z score units). After one of these two numbers is input, the program will derive the other. Most of these input variables are generated by SELECT1

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and SELECT2 (Mullen, 1984) in the analysis of the utility of a selection procedure.

Output. The program displays the following: the validity coefficient; the predictor cutoff score (in Z score units, and in raw score units if the predictor mean and SD were input earlier); the selection ratio; the mean criterion score of selected applicants (in Z score units, and in raw score units if the criterion mean and SD were input earlier); and a conservative estimate of the dollars saved per year per applicant hired. This final term is defined as the product of the validity coefficient, the predictor cutoff (in Z score units), and the SD of the criterion expressed in dollars (assuming that applicants in the top 1% can perform twice as well as those in the bottom 1%; see Brogden & Taylor, 1950; Cronbach & Glesser, 1965; Schmidt et al., 1979).

Limitations. SELECT3 reproduces the values obtained from Naylor and Shine (1965), generally to within .005. The program accepts only positive validity coefficients (negative validity coefficients should be reversed in sign before the program is run, and final results then should be interpolated accordingly). The estimate of the number of dollars saved per year per employee can be made more or less conservative by changing the parameters used in line 00770 of the program (see Schmidt et al., 1979).

Language. The program is written in an extremely generic dialect of BASIC that should run on most BASIC systems with little or no modification. The program consists of 98 lines and takes up approximately 4000 bytes of memory space.

Availability. Listing of the program can be obtained free of charge by writing to the author.

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