

EVALUATING THE USE OF EXPLORATORY FACTOR ANALYSIS IN TAIWAN: 1993-1999

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Exploratory factor analysis has been widely used by social science researchers for scale development and validity studies. When conducting a factor analysis, the researcher must decide the number of variables to be analyzed, the sample size, the number of factors to retain, the method to estimate initial factor loadings, and the rotation method to be employed. Only when a researcher considers these issues carefully and makes good decisions, can stable and reliable results be obtained. Moreover, the result of applications of factor analysis is also affected by the characteristics of the data. This study reviewed the recent applications of exploratory factor analysis to evaluate the common practice of this frequently used statistical method in Taiwan. Five representative journals ranging from psychology, education, to management between 1993 and 1999 had been reviewed. For every analysis, not only the factor analytic procedures were reviewed, but

also the response categories of the scales and the distributions of variables. The results indicated that most studies used item-level variables for factor analysis. Five-point rating scale format was frequently employed. Most studies did not specify the procedures used for deciding number of factors. Among the studies that specified the method to decide number of factors, number of eigenvalues greater than one was the method used most often. Principal component method was popular for estimating initial factor loadings. One third of the studies adopted orthogonal rotations, while another one third adopted oblique rotations. Comments on the frequently used approaches were given. Suggestions for improving the use of factor analysis were also presented.

Keywords: Exploratory factor analysis, Item-level factor analysis, Response categories, Data distribution