

Rummel R J. *Applied factor analysis*.

Evanston, IL: Northwestern University Press, 1970. 617 p.

[Department of Political Science, University of Hawaii, Honolulu, HI]

This text was written to help others apply factor analysis throughout the sciences with the conviction that factor analysis is a calculus of the social sciences. The book developed from research undertaken to do a 236-variable cross-national analysis. [The *SCI*® and the *SSCI*® indicate that this book has been cited in over 880 publications.]

R.J. Rummel

Department of Political Science  
University of Hawaii  
Honolulu, HI 96822

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In 1962, as a doctoral candidate in political science at Northwestern University, I became a research assistant on Harold Guetzkow's Dimensionality of Nations (DON) Project, which intended to replicate R.B. Cattell's cross-national factor analyses.<sup>1,2</sup> Since I was new to factor analysis, I took a course on it and read widely in the relevant literature. Moreover, I met regularly with Guetzkow and project consultant Jack Sawyer to discuss the replication's design, eventually a 236-variable, 82-nation factor analysis.

When I had collected sufficient data on cross-national foreign and domestic conflict, I did an empirical test of the design. This became my dissertation. It was published in 1963<sup>3</sup> and is now my second most-cited publication after *Applied Factor Analysis*.

In 1963 I received my PhD, started teaching at Indiana University in Bloomington, Indiana, and took the DON Project there as principal investigator. While waiting for factor-analysis programs to be written for Indiana's 36K computer, I had time to write. Having collected boxes of

notes on factor analysis, as well as having unique experience in its application to sociopolitical data (my dissertation was the first event-data analysis and cross-national factor analysis of conflict published) and a perception of factor analysis as a prime theoretical and empirical tool for understanding conflict, I committed myself to an applied factor-analysis book for James Robinson's Northwestern University Press series on methodological workbooks.

The first draft was completed in 1967 and sent to Robinson for constructive advice. But he mistakenly had it reviewed as a final draft and got back a scathing critique of it: the book was awful and would "encounter a sad fate in review sections of technical journals." Fortunately, Robinson accepted my explanation that it was a working draft.

Upon publication, the book did receive good reviews, but it has been virtually ignored in my discipline. No political science reviews of it have appeared, and the book has seldom been mentioned in methodological overviews of the field. Nonetheless, it has apparently been cited by others if not political scientists. Overall I guess, the book has been highly cited because of its clarity, comprehensive nature, and general applicability, especially compared to most factor-analysis books, which are written by and for psychologists.

Factor analysis is inappropriate to my current research, and I have not performed one for perhaps 10 years, but I still believe that it is a theoretical and empirical calculus of the social sciences. [See reference 4 for a collection of recent papers related to this field.]

1. Cattell R B. The dimensions of culture patterns by factorization of national characters.

*J. Abnormal Soc. Psychol.* 44:443-69, 1949. (Cited 45 times since 1955.)

2. Cattell R B, Breul H & Parker Hartman H. An attempt at more refined definition of the cultural dimensions of syntality in modern nations. *Amer. Sociol. Rev.* 17:408-21, 1951. (Cited 25 times since 1955.)

3. Rummel R J. Dimensions of conflict behavior within and between nations. *Gen. Systems* 8:1-50, 1963. (Cited 160 times.)

4. Jackson D J & Borgatta E F, eds. *Factor analysis and measurement in sociological research: a multi-dimensional perspective*. London: Sage Publications, 1981. 313 p.