ably as a type of source book for illustrating kinds of research problems and their attempted solutions by many of our outstanding social scientists.

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COMPARATIVE POPULATION AND URBAN RESEARCH VIA MULTIPLE REGRESSION AND COVARIANCE ANALYSIS[1]

As the title of this monograph may suggest, the two-fold purpose of this study is methodological and substantive, i.e., it discusses (1) the use of the multiple regression and covariance analysis as an approach to population and urban research and (2) the investigation of several hypotheses concerning urban and suburban growth.

Chapter 1 is devoted entirely to an explanation and rationale of the methodology. The "comparative" approach to urban research, as used here, is one which utilizes standard metropolitan areas as units of equal weight. This is contrasted with the more traditional "aggregative" approach in which totals for groups of areas are used. While "aggregative" methods are useful for description, they have only limited value for arriving at multiple-variable explanations of group phenomena. The multiple-regression approach permits the researcher to ascertain how completely he is able to explain the variability of a dependent variable by a given series of independent variables.

Basically, the substantive purpose of the book is to account for the variation or differences among the 125 Standard Metropolitan Areas in the United States with a population of 100,000 or more in 1950, with respect to: (1) total rate of metropolitan growth (Chap. 2); (2) degree of metropolitan suburbanization (Chap. 3); (3) rate of metropolitan suburbanization (Chap. 4); and (4) rate of central city growth.

Definitive results are precluded by the lack of adequate in-

[1] Bogue, Donald J. and Harris, Dorothy L.: Comparative Population and Urban Research Via Multiple Regression and Covariance Analysis. Oxford, Ohio, Scripps Foundation for Research in Population Problems and Chicago, Population Research and Training Center, 1954, 75 pp. $0.90.

dices of the variables of interest in the study. The dependent variables leave much to be desired.

In the first discussion the available data approach most closely the desired conceptual clarity. It was found that the six ecological variables often used in the past to explain metropolitan growth account for only 27 per cent of the variability of metropolitan growth in per cent population increase 1940–1950 of the 125 S.M.A.'s. The addition of the variables, growth rate of these S.M.A.'s 1930–1940, and regional effect, increased the accountable variability to 69 per cent. These last two variables, however, are non-ecological and non-theoretical. The conclusion offered from this analysis is "At the present time no set of ecological variables has been explicitly formulated that could effectively explain metropolitan growth between 1940 and 1950."

In the succeeding illustrations the problem of choosing measurable dependent variables that satisfy conceptual clarity appears to be acute and the findings are not as definitive as the first illustration. The ecological and non-ecological variables account for only 39 per cent of the variability of the degree of suburbanization represented by the per cent of the S.M.A. population residing in the ring in 1950, and 45 per cent of the variability of the per cent of the ring population residing in rural areas in 1950.

In almost all the illustrations the independent variables which contribute most to an explanation of the variability of the dependent variable are non-ecological and non-theoretical. These are such things as the regional effect, per cent growth and growth rates of the same S.M.A.'s during 1930–1940, and generally, the same dependent variable for the preceding decade.

The need for further investigation of these variables and the formulation and introduction of, heretofore, unknown variables to explain the variability of urban and suburban growth is evident. With all the information presently available, Bogue and Harris fail more often than not to account for more than half of the variation among the 125 S.M.A.'s.

Although not highly important, it is not clear whether the hypotheses were selected to demonstrate the methodology or the methodology was selected to test the hypotheses.

Despite possible disappointments in the present instance, the approach is promising and may have wider application in other fields of the social sciences as well as urban research.

This didactic monograph offers a challenge to demographers and urban sociologists to seek new variables and hypotheses that may further explain differential urbanization and suburbanization, and to all social scientists it presents a demonstration of a potential tool for research.

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