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- ★Methoden der geometrischen Datenanalyse und ihre Anwendung bei der Untersuchung des Entwicklungsprozesses. (German) [[Methods of geometric data analysis and their application in the investigation of the development process]]

Arbeiten zur Angewandten Statistik [Papers on Applied Statistics], 23.

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From the introduction (translated from the German): “Our goal is to formulate theoretically some geometric methods of data analysis and to discuss their practical application by using an example.

“The starting point is the assumption that any natural laws inherent in the data to be investigated are expressed in a certain geometric structure that enables us to describe the material. To explain this we show in the first chapter how the method of principal components and factor analysis—the two classical methods of multivariate statistics—can be derived geometrically. In the remainder of the first part we discuss nonmetric multidimensional scaling, hierarchical cluster analysis and the so-called vector model. In Part II we apply these methods to data on the developing countries, in order to provide insights on the structure of the development process and on the level of development in individual countries.”

Chapter headings: Introduction. Part I: Methods of data analysis. Chapter 1: A geometric representation of the method of principal components and factor analysis. Chapter 2: Multidimensional scaling. Chapter 3: The nonlinear vector model. Chapter 4: Hierarchic cluster analysis. Part II: A data-analytical investigation of the development process. Chapter 5: Introduction. Chapter 6: A multivariate analysis of the development process using the method of “unfolding”. Chapter 7: A division of countries into groups with similar level of development. Chapter 8: The “typical” course of development. Bibliography.