The Sixth Winemiller Symposium

Winemiller 2006 Conference on Methodological Developments of Statistics in the Social Sciences
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Sponsored by the Social Science Statistics Center and University of Missouri, Department of Statistics
Hosted by University of Missouri
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Introduction

Statistics in social sciences is an exciting and dynamic area of research. Traditionally driven by applications in psychology, sociology, education, economics, and quantitative methods in these areas are under demand for constant development and refinement. Recently, this demand has become more imminent as the sheer amount of information that can be extracted from data sets has seen an exponential increase; either data from publicly available repositories (e.g., federal agencies or research institutions) or data collected by individual researchers.

The history of quantitative methods in social science is quite varied and colorful. Psychometrics originated around 1904 with early work by Charles Spearman and his attempts to quantify intelligence. Other notable work was conducted by Thurstone in the 1940s and Guttman in the 1950s, laying a clear foundation for and identifying the need for complex multivariate techniques (e.g., principal component analysis, multi-level modelling, canonical correlation, etc.). In a temporal sense, econometrics closely followed the development of psychometrics, spearheaded by Norwegian economist Ragnar Frisch. The dominant research paradigm in econometrics is “structural estimation”, seeing its rise in the 1940s and 1950s. Furthermore, much of the present day work (e.g., simultaneous equations, instrumental variable regression, conditional heteroscedasticity models, etc.) stems from the same philosophical foundations. While using several of the techniques developed in psychometrics and econometrics, sociology uniquely developed the field of sociometry (early 1920s)–a way of measuring the degree of ‘relatedness’ among people. Likewise, while seeing a great deal of overlap with psychology, education developed educational assessment techniques (classic test theory, item response theory, etc.) in the mid-20th century. Since the 1970s, major developments in structural equation modeling and multilevel modeling have occurred in response to the increased complexity of data arising from the social sciences.

Although many of the developments in the quantitative social sciences can be directly attributed to statisticians (as is apparent from our list of eminent invited speakers), much of the statistical community is unaware of the unique problems encountered when modeling data collected in social science research. The goal of the present conference is to unite (and perhaps expose) top statistical researchers within the social sciences to the general statistical community as a whole, creating an environment that facilitates interdisciplinary research among anticipated attendees (i.e., professors and graduate students from across the nation).

Please explore our website to learn about the conference, and please see the links section for information about other organizations involved in methodological research in social sciences, as well as information about our Department of Statistics, our University of Missouri, and the city of

Columbia where we reside.