EDITORIAL REMARKS

This volume presents peer-reviewed compilations on handling data in which the postulate of independence in the data matrix is violated. When this postulate is violated, and the methods assuming independence are still applied, the estimated parameters are likely to be biased, and statistical decisions are very likely to be incorrect. Problems associated with dependence on data have been known for a long time and have led to the development of tailored methods for analyzing dependent data in various areas of statistical analysis. These methods include both parametric and semiparametric methods for analyzing longitudinal data and corrections for the dependence among repeated observations. Longitudinal data, or panel data, is a type of research design where the same subjects, entities, or observations are measured or observed at multiple points in time. This method allows researchers to examine changes within individual units and explore trends and patterns over an extended period. Scientists aim to derive meaningful insights from longitudinal studies through sophisticated analytical techniques despite the inherent challenges of missing data and incomplete data sets.

Analyzing longitudinal / panel data involves studying the same subjects or entities over multiple time points. This method provides a dynamic view of changes and trends. Key aspects of analysis include – Understanding Change, Causality and Relationships, Forecasting and Prediction, Health and Educational Research, Identifying Patterns, Advanced Techniques and Real-Time Analysis.

In this special volume, we have attempted to cover up most of the above key aspects. We hope researchers and graduate students in the social and behavioral sciences, education, econometrics, and medicine will find this up-to-date overview of modern statistical approaches for dealing with problems related to dependent data particularly useful. In fact, we are pretty much certain that this volume will provide the reader with hands-on experiences of consulting and collaborative statisticians and serve as a guide to important characteristics necessary for success.

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Kalyan Das

Editor, JSR Special Issue on Longitudinal Data Analysis and Related Topics