

1116-VP-1972 **Budhinath Padhy***, University of Hartford, Hillyer College, Department of Mathematics and Science, 200 Bloomfield Avenue, West Hartford, CT 06117, and **Gemechis Djira**, South Dakota State University, Department of Mathematics and Statistics, Brookings, SD 57007. *A Comparative Study of Structural Equation Models vs. Alternative Models for Multivariate Longitudinal Data.*

In the past few years, there has been a surge of research interest in modeling longitudinal data in a variety of fields including medicine, marketing research, psychology, social and behavioral sciences. As such, number of studies in multivariate longitudinal data is also growing. In this talk, among others, attention is placed on structural equation models (SEM) and linear mixed effect models (LME) because they are popular, flexible, and widely applicable. These models assume that measurements from a single subject share a set of latent or random effects which are used to generate an association structure between repeated measurements. The fact that latent structures generate associations implies that SEM and LME are very convenient for the joint or multivariate analysis of longitudinal data. The main research objective is to describe these multivariate longitudinal data analysis techniques that are easily accessible to a wider audience and then to compare and contrast the evolution of associations and the association of evolutions of the responses of these methodologies by giving a motivating example. (Received September 21, 2015)