Séminaire de Probabilités et Statistiques

Mardi 02 Mai à 14h00

Laboratoire Dieudonné

Salle de Conférences

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(Conservatoire National des Arts et Métiers de Paris)

Component-based vs Factor-based approaches to Latent Variable Path Modeling

Latent Variable Path Models (a.k.a. Structural Equation Modeling) aim at studying networks of relationships among latent (unobserved) variables, which are measured by specific sets of observed indicators. Factor-based and component-based approaches to Latent Variable Path Modeling provide nowadays well-established tools for the analysis of a system of relations between observed and unobserved variables. Their application is widespread and common in many fields, from Psychology to Marketing and Biology. The factor-based approach is largely confirmatory and it is based on the Covariance Structure Analysis (CSA) : the covariance matrix of the observed variables is modeled as a function of the model parameters, which are the coefficients relying observed and unobserved variables. Among the component-based approaches, Partial Least Squares Path Modeling (PLS-PM) is undoubtedly the most commonly and widely used. PLS-PM is a double faceted approach for investigating the relationships among several sets of variables connected by a path. PLS-PM is both a powerful and flexible data analysis tool, which generalizes most of the component-based data analysis techniques, and an alternative estimation procedure for CSA. Differently from CSA, PLS-PM is more oriented to prediction than to hypothesis testing and validation. That is why recently researchers start to refer to PLS-PM as a Predictive Path Modeling.