Treating Heterogeneity in PLS Path Modeling Using Latent Class Moderating Effects

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PLS path estimation of structural equation models has become very popular over the last decade. One line of research is investigating (unobserved) heterogeneity, i.e., possibly unknown subgroups of the population with different associations between latent and manifest variables. The recently published methods treating heterogenity, both observed (e.g., Pathmox: Sanchez & Aluja 2007) and unobserved (e.g., FIMIX-PLS: Ringle et. al 2010; REBUS-PLS: Esposito Vinzi et. al 2008) fit local models for each latent group. As a consequence the local sample sizes become smaller, especially when the resulting grouping is unbalanced.

This talk presents a guideline on how to deal with unobserved heterogeinity using the full data by a combination of exploratory model diagnostics and partial model re-estimation. The central idea is to find sets of path coefficients with large variability. The overdispersion is modeled by a convex combination of several coefficient values, i.e., a finite mixture model for this subset of path coefficents. The grouping indicators are determined by model based clustering on the respective inner submodels. The procedure is illustrated by a data example on customer satisfaction study surveyed by a psychosomatic daycare center.