Using Configural Frequency Analysis as a Person-centered Analytic Approach with Categorical Data

Abstract:
Configural frequency analysis and log-linear modeling are presented as person-centered analytic approaches for the analysis of categorical or categorized data in multi-way contingency tables. Person-centered developmental psychology, based on the holistic interactionistic perspective of the Stockholm working group around David Magnusson and Lars Bergman, is briefly revisited. According to person-centered theory, systems or individuals are seen as a whole and as inseparable units; individuals are embedded and strongly interconnected with their context; the individual and the environment influence each other, and the individual is seen as an active agent or producer of his or her own development. Four models of configural frequency analysis are presented: (1) First-order configural frequency analysis, which is basically the analysis of a main effects log-linear model; (2) prediction configural frequency analysis, which defines one or more dependent variables; (3) two-group configural frequency analysis, which proposes that there is no association between discrimination variables and group membership; and (4) functional configural frequency analysis, which allows us to blank out certain outlier cells in order to test for the quasi-independence of the
rest of the cross-table. The use of the open source R-package confreq for computational analysis is demonstrated. The advantages, as well as the limitations, of configural frequency analysis are discussed.