

A series of distance models for square contingency tables

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Keywords: Contingency tables; Two-mode distance; Unique dimensions; constraints

Abstract

Distance models are often applied to square contingency tables. To deal with the asymmetric nature of such tables asymmetric MDS models have been proposed. However, most asymmetric MDS models are restricted quasi-symmetry models (De Rooij and Heiser, 2002) and quasi-symmetry models rarely fit square contingency tables. In the present paper we will present a series of distance models starting with a two-mode distance model (with coordinates in a matrix X for the categories of a row variable A and Y for the categories of the column variable B) plus unique dimensions (U^A and U^B) that in full dimensionality fits the contingency table exact. The unique dimensions pertain to the main effects; the common dimensions pertain to the interaction effects. Then different forms of equality constraints may be imposed to obtain easier representations. All conceivable models are shown in Figure 1.

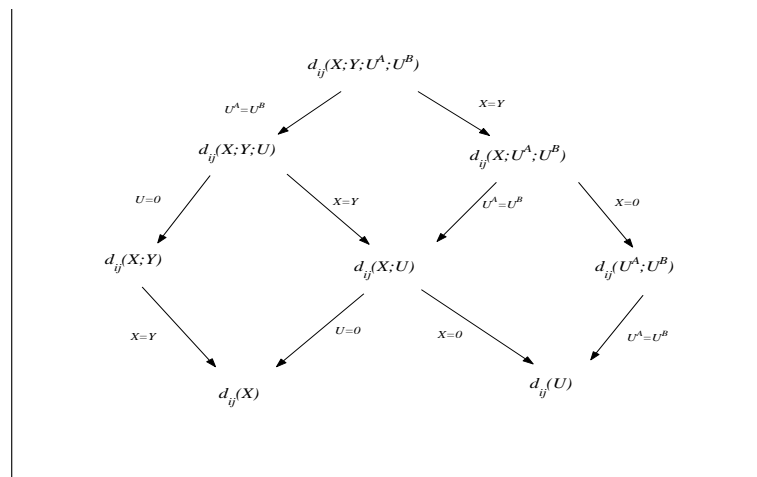


Figure 1: Relationships between different distance models through equality restrictions.

References

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