Preface

Meta-analysis (MA) is a prominent statistical tool in many research disciplines. It is a statistical method to combine the data of several independent studies, in order to draw overall conclusions based on the pooled data. Structural equation modeling (SEM) is a technique that tests the relations between a set of variables in one model, for example in a path model or a factor model. In a SEM analysis, all hypothesized relations between the variables are tested simultaneously. The overall fit of the model can be evaluated using several fit indices. SEM does not need raw data, but fits structural equation models to covariance (or correlation) matrices directly.

The combination of meta-analysis and structural equation modeling for the purpose of testing hypothesized models is called meta-analytic structural equation modeling (MASEM). MASEM is a new and promising field of research. With MASEM, a single model can be tested to explain the relationships between a set of variables in several studies. By using MASEM, we can profit from all available information from all available studies, even if few or none of the studies report about all relationships that feature in the full model of interest.

I use the term MASEM for the process of fitting a structural equation model on the combined data from several studies. SEM can also be used to perform ordinary meta-analysis (SEM-based meta-analysis), but this falls outside the scope of this book.

This book gives an overview of the most prominent methods to perform MASEM, with a focus on the two-stage SEM approach. The fixed and the random approach to MASEM are illustrated with two applications to real data. All steps that have to be taken to perform the analyses are discussed. The data and syntax files can be found online (http://suzannejak.nl/masem), so that readers can replicate all analyses.

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Jak, S.

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