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**Multiple mediation analysis for interval-valued data.** (English) Zbl 1437.62194  
Stat. Pap. 61, No. 1, 347-369 (2020).

Summary: Mediation analysis is an important statistical approach to evaluate the relationships among observed variables. The most commonly used models for mediation analysis handle single-valued variables. However, there are several circumstances (e.g., dimensionality reduction of large datasets, clinical patient courses, repeated measures, masked data, uncertain data) in which the collected information can be represented more naturally by means of intervals. In these cases, standard mediation analyses can be ill-suited. Although interval-valued variables can be transformed into standard single-valued variables, such procedures may mask some relevant information provided by intervals. In this article, we present a novel and simple model (IMeDA) to perform mediation analysis on interval-valued variables which is based on both the symbolic regression approach and the regression based mediation framework. We also generalize Stolzenberg's decomposition of effects to cope with interval-valued data. We further introduce a specific variance based decomposition procedure to descriptively evaluate the sizes of such effects. Finally, to better highlight the IMeDA features we apply our model to a real case study from behavioral contexts.

**MSC:**

**62H12** Estimation in multivariate analysis

**62P10** Applications of statistics to biology and medical sciences; meta analysis

**Keywords:**

interval data; mediation analysis; path analysis; multivariate multiple regression; work-related burnout

**Software:**

SODAS; DYFRAT; bmem ; lavaan

**Full Text:** [DOI](#)

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