

Rasch Measurement: The Dichotomous Model and its Application in Social Science Research

Lauren Granen

School of Public Health, Louisiana State University Health Science Center

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Abstract

It is important to anyone engaged in subjective (pain scale, some self report measures, educational and psychiatric) question research to understand how to rescale data in order to achieve more accurate statistical parameters. One method for this was proposed by a Danish mathematician working with educational measurement named Georg Rasch. Rasch Measurement is a broad term for a series of different models all dealing with subjective data in which the statistician calculates a relative scale for both personal ability and item difficulty. Rasch analysis is often used to test the validity of an instrument, such as question relevance and response orders. The dichotomous model is used in cases where the respondent is answering a yes/no or true/false question, instead of a multipart question. I will be outlining the mathematics behind scaling the data in a dichotomous setting and the use of scaled data to create new parameters. It is imperative for those in social science research to become familiar with these statistical models and understand the problems subjective data can lead to, as well as, how to overcome these challenges.