Bocconi

Department of Decision Sciences

Statistics Seminar

On the Accommodation of Differential Item Functioning in Latent Class Regression

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12:30pm Room 3-E4-SR03 Via Rontgen 1 Milano

Abstract

Latent class models provide an appealing framework for studying constructs that are represented by multiple variables or difficult to measure, such as health practices and psychiatric syndromes, and addressing difficulties for their measurement. Differential item functioning (DIF) is a difficulty that occurs when the relationship between a latent construct and the observable surrogates through which it is inferred varies by characteristics of the subject of measurement. A first part of the talk addresses the question of "when DIF matters": that is, presents analytical and numerical studies to identify distribution features determining differences between estimands representing association between predictor variables and latent outcomes when employing models that do, and do not, address DIF, in cases where DIF exists. In a second part of the talk a new strategy for developing latent class-based "indices" for subsequent use as outcomes in regression models allowing for DIF is proposed and evaluated. Throughout Illustration is made using epidemiological and clinical datasets on aging and HIV. The talk aims to deepen insight into the models and analyses at issue and improve practice when using these.

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