

A model for psychiatric questionnaires with embarrassing items

Mariana Cúri¹, Julio da Motta Singer² and Dalton Francisco de Andrade³

¹ ICMC, Universidade de São Paulo, Brazil

² IME, Universidade de São Paulo, Brazil

³ INE, Universidade Federal de Santa Catarina, Brazil

In fields like Psychiatry and Psychology, one of the major research obstacle is the quantification of constructs (severity of a disease, for example). Usually, the data are collected through evaluation instruments, like questionnaires or scales. Most of these psychiatric questionnaires are composed of items designed to identify the presence of certain symptoms associated with some disease, like depression, anxiety, phobias, etc. A group of subjects may feel embarrassed by some of the items because of their relationship to questionable or even illegal social behaviour and, consequently, may respond differently from those who are not embarrassed therewith. In the same way, cultural, gender, race or age characteristics can influence the answer to some items. This is known as differential item functioning and must be identified in the analysis of data obtained from studies with such characteristics since it may bias the evaluation of the relationship between the gravity of the disease and the presence of the related symptoms. We propose an Item Response Theory model that addresses this issue and additionally accommodates situations where individuals embarrassed with some particular item could lie and thus omit the presence of the corresponding symptom. We consider maximum likelihood and bayesian methods to estimate its parameters, and illustrate the results with the analysis of data collected to evaluate teenager depression, highlighting the gender difference in the probabilities of “crying spells”.