Workshop 1. R Applied To Personality Research

Speakers:

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Objectives:

Psychological research often comprises the study of multiple variables, both observable and latent, with the aim of either understanding their relationships in pursuit of theory development, or predicting an outcome for applied purposes. A number of statistical software packages have been developed to facilitate these analyses. A problematic issue is that most of these software packages have at least one of the following drawbacks: they include a narrow range of statistical procedures which limits what researchers can do, or they are commercially distributed products and thus can be expensive. One of the most remarkable exceptions is R (R Core Team, 2019), a free, open-source software focused on statistical computing, that is becoming increasingly popular in psychology. Thus, the main objective of this workshop is that the participants learn how to conduct some of the most used analyses in psychometrics research, with a particular focus on personality, using RStudio (an integrated development environment for R; RStudio Team, 2018). The course will consist of three sections: (1) Classic psychometrics, involving a brief introduction to classical test theory and multiple linear regression; (2) Latent variable modeling, consisting of factor analysis and structural equation modeling techniques (e.g., Abad, Sorrel, Garcia, & Aluja, 2018); and (3) Growing areas of interest, which will discuss modern approaches such as item response theory, computerized adaptive testing, and briefly introduce some alternatives for the study of personality, such as cognitive diagnosis modeling (e.g., de la Torre, van der Ark, & Rossi, 2018; Nieto et al., 2017). The course is intended for applied researchers who are somehow already familiar with the analyses and want to learn how to conduct them in R. Every statistical procedure will be explained with the use of real data examples from personality inventories. By the end of the course, participants are expected to know how to apply each of the aforementioned analyses to their own research works using R.

Requirements:

- Basic knowledge of classical test theory and factor analysis.
- Basic data manipulation in R: entering, importing, and exporting data.
- Experience conducting test validation research is advisable.

Short Workshop Program:

1. Brief Introduction to R and RStudio.
2. Classic Psychometrics: Classical test theory and multiple linear regression.
3. Latent Variable Modeling: Factor analysis and structural equation modeling.
4. Growing Areas of Interest: Item response theory, computerized adaptive testing, and cognitive diagnosis modeling.

Key references:

Abad, F. J., Sorrel, M. A., García, L. F., & Aluja, A. (2018). Modeling general, specific, and method variance in personality measures: Results for ZKA-PQ and NEO-PI-R. *Assessment*, *25*(8), 959-977. doi:10.1177/1073191116667547

de la Torre, J., van der Ark, L. A., & Rossi, G. (2018). Analysis of clinical data from a cognitive diagnosis modeling framework. Measurement and Evaluation in Counseling and *Development*, *51*(4), 281-296.

Nieto, M. D., Abad, F. J., Hernández-Camacho, A., Garrido, L. E., Barrada, J. R., Aguado, D., & Olea, J. (2017). Calibrating a new item pool to adaptively assess the Big Five. *Psicothema*, *29*(3), 390-395. doi:10.7334/psicothema2016.391

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R Core Team (2019). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/

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