Seminário
Grupo de Probabilidades e Estatística

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How to navigate between several multivariate statistical techniques to reach the right port in Health Metrics: Application of the mixture item response theory model to the Self-Administered Food Security Survey Module for Children

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Abstract

Multivariate statistical techniques are central core of health metrics. A data scientist needs to navigate between principal components analysis, factor analysis, confirmatory analysis and latent variables models to achieve the right port. Needs to understand terms like reliability, dimensionality, internal consistency, construct, test-retest and measurement invariance.

The Self-Administered Food Security Survey Module for Children was developed to assess food insecurity of individual children and has not been used in Portugal. We aimed to apply the mixture item response theory model to the Self-Administered Food Security Survey Module for Children, to assess its reliability and validity, and to estimate the cut-offs of the food security status for Portuguese children. Latent Class Analysis, Latent Trait Analysis and Mixture Latent Trait Analysis were tested to assess the reliability, validity and invariance of the questionnaire.