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Evaluating Item Quality from a Person-Centered Perspective: Leveraging Latent Class Analysis for Item Selection

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Constructs are often measured using multi-item scales and item quality evaluation depends on the theoretical framework adopted. For instance, within Classical Test Theory, items are typically evaluated based on their factor loadings, whereas Item Response Theory emphasizes item difficulty and discrimination. This contribution introduces an alternative, person-centered approach to item evaluation and selection. According to this framework, the population is assumed to consist of latent subgroups of individuals who are similar to one another and distinct from those in other subgroups (Howard & Hoffman, 2018). Consequently, a good item is one that helps classify individuals into the correct latent class.

We illustrate this approach using the 22-item Schizotypal Personality Questionnaire-Brief (SPQ-B; Raine & Benishay, 1995), administered to a non-clinical sample of 496 participants. The three-factor structure (cognitive-perceptual, interpersonal, disorganized) was confirmed [$\chi^2(206) = 543.109$, p < .001; RMSEA = .057 (.052–.063), p = .019; CFI = .907; SRMR= 0.088]. A Latent Class Analysis identified four distinct subgroups: a normotypical profile (n = 147), a globally schizotypal profile at higher clinical risk (n = 92), an interpersonally impaired profile (n = 96), and a profile with cognitive-perceptual tendencies (n = 161).

Item quality was then assessed using multiple procedures, including class separation (Masyn, 2013), the Kullback-Leibler divergence method (van Buuren & Eggen, 2017), and the proportion of misclassified cases (Bartolucci et al., 2016). Results will be discussed within the person-centered framework, highlighting the added value of this approach for item evaluation and its potential for future applications.

If you're submitting a symposium talk, what's the symposium title?

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