



Psychometric Validity of Personality Measures in Denmark: NEO-FFI and TIPI

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Abstract

Reliable and valid instruments for assessing personality traits are essential for research and clinical practice. The NEO Five-Factor Inventory-3 (NEO-FFI-3) is a widely used 60-item measure of the Five-Factor Model (FFM). Although FFM-based instruments are widely used internationally, the NEO-FFI-3 has not yet been validated in Danish. Furthermore, shorter alternatives, such as the Ten-Item Personality Inventory (TIPI), have recently become available in Danish, and evidence of their psychometric properties remains limited.

This study evaluates the psychometric properties of the Danish version of NEO- FFI-3 (NEO-FFI-3-D) and examines the convergent validity and agreement of the Danish translation of the TIPI (TIPI-D) relative to the NEO-FFI-3-D.

A total of 56,272 participants from the Danish Blood Donor Study completed the NEO-FFI-3-D; 26,193 also completed the TIPI-D. Structural validity was examined using exploratory factor analysis (EFA), and internal consistency using Cronbach's alpha. Convergent and discriminant validity of the TIPI-D were assessed via correlations with NEO-FFI-3-D domains. Agreement was evaluated using Bland-Altman analyses. EFA supported a five-factor structure of the NEO-FFI-3-D consistent with the theoretical model. Internal consistency was acceptable ($\alpha = 0.71-0.89$). Correlations between corresponding domains ($r = 0.42-0.76$) indicated acceptable convergent validity for most domains, with weaker convergence for some. Bland-Altman analyses showed small mean differences (-0.63 to 0.61) but wide limits of agreement (-2.45 to 2.14), indicating similar average scores but substantial individual-level variability. Apparent trends across score levels were attributable to differences in scale variance rather than true proportional bias. The NEO-FFI-3-D is a reliable and valid measure of personality traits. The TIPI-D is a pragmatic, brief alternative, but should be used with caution when precise individual-level assessment is required.

Keywords: Five-Factor Model, personality assessment, psychometric validation, NEO-FFI, TIPI