A Validation of the Non-Parametric Continuous Norming Procedure

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This study analyzed and validated the statistical aspect of the non-parametric continuous norming technique, which is a method used in creating scores in psychometric tests. Using the Work Profile Questionnaire - Emotional Intelligence (WPQei) with Filipino sample respondents, the study was able to demonstrate how the norming technique can be used to create age-group-based scores (age norms). Based on the results, the models from the technique can produce useable scores in practice with acceptable adjusted R-squared values; however, some challenges emerged with regard to the process of choosing the smoothing parameter, consistency of the significant variables and coefficient signs of the model, and the calculation of the score tables. Bootstrapping is recommended in improving the robustness of the technique.

Keywords: norming, WPQei, age-group-based score tables, bootstrap

1. Introduction

Psychometric or psychological tests are used in diverse settings and are made to measure intelligence, aptitude, or personality traits. While psychometric tests play a vital role in the decision-making process of many test users, the results can likewise be life-changing to the recipients. Hence, the development and use of these tests should be given serious attention.

There are many procedures involved in test development, but the study intends to focus mainly on the establishment of test norms, or simply known as norming. Norms are the test performance of a standardization or normative sample, which is assumed to be representative of a target population (Anastasi & Urbina, 2009). Given the norms, an individual's score can be compared with a reference group's score distribution; thus, the relative standing of an individual can be assessed. Ideally, the test-taker and the normative sample should have similar characteristics in order for the interpretation to be sound. In the Philippines, although there are local tests, international tests are more dominant. As expected, normative samples primarily consist of American and European middle class, leading to a lack of representation for other ethnicities (Groth-Marnat, 2003). The issue of inappropriate normative sample is one component of the test bias problem