

**Investigating the Invariance of Person Parameter Estimates
Based on Classical Test and Item Response Theories****O.O.Adedoyin**

*Department of Educational Foundations, University of Botswana, Gaborone, Botswana
E-mail: omobola_adedoyin @ yahoo.com*

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ABSTRACT This is a quantitative empirical research study validating the invariance of person parameter estimates based on the two competing measurement frameworks, the classical test theory (CTT) and the item response theory (IRT). In order to achieve this goal, 11 items that fitted the 2PL model from the 40 items of Paper 1 Botswana junior secondary mathematics examinations, were used to estimate the person ability for a sample of five thousand examinees (5000) out of a total of thirty-five thousand, five hundred and sixty-two (35562) who sat for the examination. The person parameter estimates from CTT and IRT were tested for invariance using repeated measure ANOVA at 0.05 significant level. The IRT person parameter estimates based on IRT were invariant across subsets of items, for the examinees randomly selected. In conclusion, the findings from this study show that, there is gross lack of invariance when classical test theory (CTT) is used to estimate person parameter or ability. IRT person parameter estimates exhibited the invariance property across subset of item. This study advocates for the use of IRT in test construction and measurements of achievement abilities.