

**GRE.**

*Research*

Development of a SIBTEST Bundle Methodology for Improving Test  
Equity With Applications for GRE Test Development

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## Abstract

The purpose of this study was to develop a differential-item-functioning (DIF)/impact methodology capable of accurately isolating underlying, conceptually-based causes of DIF (differing item performances across examinee groups that are matched on ability) and impact (differing item performances across examinee groups that are not matched on ability) using data from the quantitative section of two administrations of the Graduate Record Examinations (GRE®) General Test. Analyses indicate that “SIBTESET bundle methodology” that was developed in the study for GRE quantitative forms is effective, and, as such, is exportable to various Educational Testing Service (ETS®) settings. This methodology should help improve test equity of future GRE quantitative forms, as well as test development and standardized tests in general. The developed methodology elevates statistically based DIF analyses from the mere screening of already manufactured items to the modification of test specifications and subsequent test construction processes.

Key words: Differential item functioning, DIF, differential bundle functioning, DBF, impact, test equity, test development, GRE General Test, SIBTEST, SIBTEST bundle method, multidimensionality-based DIF paradigm.