THE DEPARTMENT OF EDUCATIONAL PSYCHOLOGY'S RESEARCH METHODS, MEASUREMENT, & EVALUATION (RMME) PROGRAMS AND THE DEPARTMENT OF STATISTICS AT THE UNIVERSITY OF CONNECTICUT PRESENT:

ASSESSMENT OF FIT OF ITEM RESPONSE THEORY MODELS: FULL-INFORMATION AND LIMITED-INFORMATION METHODS, ITEM AND PERSON FIT ANALYSIS, AND BEYOND

SANDIP SINHARAY, (ETA) RESEARCH INSTITUTE

Item response theory (IRT) is one of the central methodological pillars supporting many large and high-profile assessment programs globally. IRT analysis is essentially a type of discrete multivariate analysis and is performed using IRT models that are latent variable models for discrete data. However, IRT models involve multiple assumptions like conditional independence, monotonicity etc. and the results obtained from IRT models may not be accurate if one or more of the assumptions are not met, that is, if there is IRT model misfit. This presentation will include a comprehensive review of the literature on the assessment of fit of IRT models. The presenter will discuss various approaches and concepts regarding IRT model fit including full-information and limited-information methods, residual analysis, item and person-fit analysis, Bayesian methods, analysis for differential item functioning, and assessment of practical significance of misfit. A real data example will be used to illustrate some of the approaches. One goal of the presentation is to stimulate discussions involving the audience members regarding IRT model-fit assessment.

Dr. Sandip Sinharay is a distinguished presidential appointee at the Educational Testing Service (ETS) in Princeton, New Jersey. He is the current editor of Psychometrika and a past editor of the Journal of Educational Measurement and Journal of Educational and Behavioral Statistics. He has received seven awards from the National Council on Measurement in Education. These awards include the Outstanding Service Award, Bradley Hanson Award, Annual Award for Outstanding Technical or Scientific Contribution to the Field of Educational Measurement, and Jason Millman Promising Measurement Scholar Award. Dr. Sinharay received the ETS Scientist award in 2008 and the ETS Presidential award twice. He has co-authored a book on subscores, coedited two published volumes including the Handbook of Statistics, Volume 26, on psychometrics (that he co-edited with Prof. C. R. Rao), and authored or coauthored more than 150 articles in peer-reviewed journals and edited books. His research, which has often been funded by National Science Foundation and Institute of Education Sciences, focuses on item response theory, assessment of model fit, reporting of subscores, statistical methods for detecting test fraud, Bayesian methods, and application of advanced statistical methods to education.

Colloquium Access Information:

Friday, 10/11/2024, 11:15am ET

In Person: AUST 110

Virtual:

https://tinyurl.com/rmme-Sinharay

Meeting # 2631 084 2277

Password: RMMESTAT

Join by video system:

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