Item Response Theory For Psychologists

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In the decade of the 1970s, item response theory became the dominant topic for study by measurement specialists. But, the genesis of item response theory (IRT) can be traced back to the mid-thirties and early forties. In fact, the term "Item Characteristic Curve," which is one of the main IRT concepts, can be attributed to Ledyard Tucker in 1946. Despite these early research efforts, interest in item response theory lay dormant until the late 1960s and took a backseat to the emerging development of strong true score theory. While true score theory developed rapidly and drew the attention of leading psychometricians, the problems and weaknesses inherent in its formulation began to raise concerns. Such problems as the lack of invariance of item parameters across examinee groups, and the inadequacy of classical test procedures to detect item bias or to provide a sound basis for measurement in "tailored testing," gave rise to a resurgence of interest in item response theory. Impetus for the development of item response theory as we now know it was provided by Frederic M. Lord through his pioneering works (Lord, 1952; 1953a, 1953b). The progress in the fifties was painstakingly slow due to the mathematical complexity of the topic and the nonexistence of computer programs.

Since publication in its first edition the Handbook of Psychological Testing has become the standard text for organisational and educational psychologists. It offers the only comprehensicve, modern and clear account of the whole of the field of psychometrics. It covers psychometric theory, the different kinds of psychological test, applied psychological testing, and the evaluation of the best published psychological tests. It is outstanding for its detailed and complete coverage of the field, its clarity (even for the non-mathematical) and its emphasis on the practical application of psychometric theory in psychology and education, as well as in vocational, occupational and clinical fields. For this second edition the Handbook has been extensively revised and updated to include the latest research and thinking in the field. Unlike other work in this area, it challenges the scientific rigour of conventional psychometrics and identifies groundbreaking new ways forward.

Grounded in current knowledge and professional practice, this book provides up-to-date coverage of psychometric theory, methods, and interpretation of results. Essential topics include measurement and statistical concepts, scaling models, test design and development, reliability, validity, factor analysis, item response theory, and generalizability theory. Also addressed are norming and test equating, topics not typically covered in traditional psychometrics texts. Examples drawn from a dataset on intelligence testing are used throughout the book, elucidating the assumptions underlying particular methods and providing SPSS (or alternative) syntax for conducting analyses. The companion website presents datasets for all examples as well as PowerPoint slides of figures and key concepts. Pedagogical features include equation boxes with explanations of statistical notation, and end-of-chapter glossaries. The Appendix offers extensions of the topical chapters with example source code from SAS, SPSS, IRTPRO, BILOG-MG, PARSCALE, TESTFACT, and DIMTEST.

The Wiley Handbook of Psychometric Testing
Psychometric Methods
Models
Statistical Tools
Mokken Scale Analysis

This new text provides a state-of the-art introduction to educational and psychological testing and measurement theory that reflects many intellectual developments of the past two decades. The book introduces psychometric theory using a latent variable modeling (LVM) framework and emphasizes interval estimation throughout, so as to better prepare readers for studying more advanced topics later in their careers. Featuring numerous examples, it presents an applied approach to conducting testing and measurement in the behavioral, social, and educational sciences. Readers will find numerous tips on how to use test theory in today's actual testing situations. To reflect the growing use of statistical software in psychometrics, the authors introduce the use of Mplus after the first few chapters. IBM SPSS, SAS, and R are also featured in several chapters. Software codes and associated outputs are reviewed throughout to enhance comprehension. Essentially all of the data used in the book are available on the website. In addition instructors will find helpful PowerPoint lecture slides and questions and problems for each chapter. The authors rely on LVM when discussing fundamental concepts such as exploratory and confirmatory factor analysis, test theory, generalizability theory, reliability and validity, interval estimation, nonlinear factor analysis, generalized linear modeling, and item response theory. The varied applications make this book a valuable tool for those in the behavioral, social, educational, and biomedical disciplines, as well as in business, economics, and marketing. A brief introduction to R is also provided. Intended as a text for advanced undergraduate and/or graduate courses in psychometrics, testing and measurement, measurement theory, psychological testing, and/or educational and/or psychological measurement taught in departments of psychology, education, human development, epidemiology, business, and marketing, it will also appeal to researchers in these disciplines. Prerequisites include an introduction to statistics with exposure to regression analysis and ANOVA. Familiarity with SPSS, SAS, STATA, or R is also beneficial. As a whole, the book provides an invaluable introduction to measurement and test theory to those with limited or no familiarity with the mathematical and statistical procedures involved in measurement and testing.
Handbook of Research Methods in Industrial and Organizational Psychology is a comprehensive and contemporary treatment of research philosophies, approaches, tools, and techniques indigenous to industrial and organizational psychology. Only available research handbook for Industrial & Organizational Psychology. Contributors are leading methodological & measurement scholars. Excellent balance of practical and theoretical insights which will be of interest to both novice and experienced organizational researchers. Great companion to the content-oriented Handbooks. Now

available in full text online via xreferplus, the award-winning reference library on the web from xrefer. For more information, visit www.xreferplus.com

Bridging an understanding of Statistics and SPSS. This unique text helps students develop a conceptual understanding of a variety of statistical tests by linking the ideas learned in a statistics class from a traditional statistics textbook with the computational steps and output from SPSS. Each chapter begins with a student-friendly explanation of the concept behind each statistical test and how the test relates to that concept. The authors then walk through the steps to compute the test in SPSS and the output, clearly linking how the SPSS procedure and output connect back to the conceptual underpinnings of the test. By drawing clear connections between the theoretical and computational aspects of statistics, this engaging text aids students' understanding of theoretical concepts by teaching them in a practical context.

First published in 1980. Routledge is an imprint of Taylor & Francis, an informa company.

Handbook of Research Methods in Personality Psychology

Frontiers of Test Validity Theory

Item Response Theory for Psychologists

Ordinal Item Response Theory

Item response theory for psychologists

This book develops an intuitive understanding of IRT principles through the use of graphical displays and analogies to familiar psychological principles. It surveys contemporary IRT models, estimation methods, and computer programs. Polytomous IRT models are given central coverage since many psychological tests use rating scales. Ideal for clinical, industrial, counseling, educational, and behavioral medicine professionals and students familiar with classical testing principles, exposure to material covered in first-year graduate statistics courses is helpful. All symbols and equations are thoroughly explained verbally and graphically.

Examines the complex psychological processes involved in answering different types of survey questions.

Constructing Measures introduces a way to understand the advantages and disadvantages of measurement instruments, how to use such instruments, and how to apply these methods to develop new instruments or adapt old ones. The book is organized around the steps taken while constructing an instrument. It opens with a summary of the constructive steps involved. Each step is then expanded on in the next four chapters. These chapters develop the "building blocks" that make up an instrument--the construct map, the design plan for the items, the outcome space,

and the statistical measurement model. The next three chapters focus on quality control. They rely heavily on the calibrated construct map and review how to check if scores are operating consistently and how to evaluate the reliability and validity evidence. The book introduces a variety of item formats, including multiple-choice, open-ended, and performance items; projects; portfolios; Likert and Guttman items; behavioral observations; and interview protocols. Each chapter includes an overview of the key concepts, related resources for further investigation and exercises and activities. Some chapters feature appendices that describe parts of the instrument development process in more detail, numerical manipulations used in the text, and/or data results. A variety of examples from the behavioral and social sciences and education including achievement and performance testing; attitude measures; health measures, and general sociological scales, demonstrate the application of the material. An accompanying downloadable resources feature control files, output, and a data set to allow readers to compute the text's exercises and create new analyses and case archives based on the book's examples so the reader can work through the entire development of an instrument. Constructing Measures is an ideal text or supplement in courses on item, test, or instrument development, measurement, item response theory, or rasch analysis taught in a variety of departments including education and psychology. The book also appeals to those who develop instruments, including industrial/organizational, educational, and school psychologists, health outcomes researchers, program evaluators, and sociological measurers. Knowledge of basic descriptive statistics and elementary regression is recommended.

This is a title in our Understanding Statistics series, which is designed to provide researchers with authoritative guides to understanding, presenting and critiquing analyses and associated inferences. Each volume in the series demonstrates how the relevant topic should be reported -- including detail surrounding what can be said, and how it should be said, as well as drawing boundaries around what cannot appropriately be claimed or inferred. This volume addresses an important issue for the design of survey instruments, which is rarely taught in graduate programs beyond those specifically for statisticians. Item Response Theory is used to describe the application of mathematical models to data from questionnaires and tests as a basis for measuring abilities, attitudes, or other variables. It is used for statistical analysis and development of assessments, often for high stakes tests such as the Graduate Record Examination. The author is known for her clear, accessible writing; like all books in this series, this

volume includes examples of both good and bad write-ups for methods sections of journal articles.
Handbook of Item Response Theory
Psychometrics
Applications of Item Response Theory to Practical Testing Problems
What Every Psychologist and Educator Should Know
Handbook of Polytomous Item Response Theory Models

Drawing on the work of internationally acclaimed experts in the field, Handbook of Item Response Theory, Volume Two: Statistical Tools presents classical and modern statistical tools used in item response theory (IRT). While IRT heavily depends on the use of statistical tools for handling its models and applications, systematic introductions and reviews that emphasize their relevance to IRT are hardly found in the statistical literature. This second volume in a three-volume set fills this void. Volume Two covers common probability distributions, the issue of models with both intentional and nuisance parameters, the use of information criteria, methods for dealing with missing data, and model identification issues. It also addresses recent developments in parameter estimation and model fit and comparison, such as Bayesian approaches, specifically Markov chain Monte Carlo (MCMC) methods.

This book examines test validity in the behavioral, social, and educational sciences by exploring three fundamental problems: measurement, causation and meaning. Psychometric and philosophical perspectives receive attention along with unresolved issues. The authors explore how measurement is conceived from both the classical and modern perspectives. The importance of understanding the underlying concepts as well as the practical challenges of test construction and use receive emphasis throughout. The book summarizes the current state of the test validity theory field. Necessary background on test theory and statistics is presented as a conceptual overview where needed. Each chapter begins with an overview of key material reviewed in previous chapters, concludes with a list of suggested readings, and features boxes with examples that connect theory to practice. These examples reflect actual situations that occurred in psychology, education, and other disciplines in the US and around the globe, bringing theory to life. Critical thinking questions related to the boxed material engage and challenge readers. A few examples include: What is the difference between intelligence and IQ? Can people disagree on issues of value but agree on issues of test validity? Is it possible to ask the same question in two different languages? The first part of the book contrasts theories of measurement as applied to the validity of behavioral science measures.The next part considers causal theories of measurement in relation to alternatives such as behavior domain sampling, and then unpacks the causal approach in terms of alternative theories of causation.The final section explores the meaning and interpretation of test scores as it applies to test validity. Each set of chapters opens with a review of the key theories and literature and concludes with a review of related open questions in test validity theory. Researchers, practitioners and policy makers interested in test validity or developing tests appreciate the book's cutting edge review of test validity. The book also serves as a supplement in graduate or advanced undergraduate courses on test validity, psychometrics, testing or measurement taught in psychology, education, sociology, social work, political science, business, criminal justice and other fields. The book does not assume a background in measurement.

"This book covers the basics of traditional educational testing, measurement, and evaluation theory and methodology, as well as

sociopolitical issues and trends influencing the future of that research and practice"--Publisher's description.

A complete discussion of fundamental and advanced topics in Item Response Theory written by pioneers in the field In Item Response Theory, accomplished psychometricians Darrell Bock and Robert Gibbons deliver a comprehensive and up-to-date exploration of the theoretical foundations and applications of Item Response Theory (IRT). Covering both unidimensional and multidimensional IRT, as well as related adaptive test administration of previously calibrated item banks, the book addresses the growing need for understanding of this topic as the use of IRT spreads to other fields. The first book on the topic that offers a complete and unified treatment of its subject, Item Response Theory prepares researchers and students to understand and apply IRT and multidimensional IRT to fields like education, mental health and marketing. Accessible to first year-graduate students with a foundation in the behavioral or social sciences, basic statistics, and generalized linear models, the book walks readers through everything from the logic of IRT to cutting edge applications of the technique. Readers will also benefit from the inclusion of: • A thorough introduction to the foundations of Item Response Theory, including its logic and origins, model-based measurement, psychological scaling, and classical test theory • An exploration of selected mathematical and statistical results, including points, point sets, and set operations, probability, sampling, and joint, conditional, and marginal probability • Discussions of unidimensional and multidimensional IRT models, including item parameter estimation with binary and polytomous data • Analysis of dimensionality, differential item functioning, and multiple group IRT Perfect for graduate students and researchers studying and working with psychometrics in psychology, quantitative psychology, educational measurement, marketing, and statistics, Item Response Theory will also benefit researchers interested in patient reported outcomes in health research.

Constructing Measures

Measurement, Causation, and Meaning

The New Rules of Measurement

Handbook of Psychological Testing

Psychological Testing in the Service of Disability Determination

The Handbook of Research Methods in Abnormal and Clinical Psychology presents a diverse range of areas critical to any researcher or student entering the field. It provides valuable information on the foundations of research methods, including validity in experimental design, ethics, and statistical methods. The contributors discuss design and instrumentation for methods that are particular to abnormal and clinical psychology, including behavioral assessment, psychophysiological assessment and observational methods. They also offer details on new advances in research methodology and analysis, such as meta-analysis, taxometric methods, item response theory, and approaches to determining clinical significance. In addition, this volume covers specialty topics within abnormal and clinical psychology from forensic psychology to behavior genetics to treatment outcome methods.

Bringing together leading investigators, this comprehensive handbook is a one-stop reference for anyone planning or conducting research on personality. It provides up-to-date analyses of the rich array of methodological tools available today, giving particular attention to real-world theoretical and logistical challenges and how to overcome them. In chapters filled with detailed, practical examples, readers are shown step by step how to formulate a suitable research design, select and use high-quality measures, and

manage the complexities of data analysis and interpretation. Coverage ranges from classic methods like self-report inventories and observational procedures to such recent innovations as neuroimaging and genetic analyses.

This volume, representing a compilation of authoritative reviews on a multitude of uses of statistics in epidemiology and medical statistics written by internationally renowned experts, is addressed to statisticians working in biomedical and epidemiological fields who use statistical and quantitative methods in their work. While the use of statistics in these fields has a long and rich history, explosive growth of science in general and clinical and epidemiological sciences in particular have gone through a see of change, spawning the development of new methods and innovative adaptations of standard methods. Since the literature is highly scattered, the Editors have undertaken this humble exercise to document a representative collection of topics of broad interest to diverse users.The volume spans a cross section of standard topics oriented toward users in the current evolving field, as well as special topics in much need which have more recent origins. This volume was prepared especially keeping the applied statisticians in mind, emphasizing applications-oriented methods and techniques, including references to appropriate software when relevant. The contributors are internationally renowned experts in their respective areas. This volume addresses emerging statistical challenges in epidemiological, biomedical, and pharmaceutical research. It features: methods for assessing Biomarkers, analysis of competing risks; clinical trials including sequential and group sequential, crossover designs, cluster randomized, and adaptive designs; and, structural equations modelling and longitudinal data analysis.

Despite the overwhelming use of tests and questionnaires, the psychometric models for constructing these instruments are often poorly understood, leading to suboptimal measurement. Measurement Models for Psychological Attributes is a comprehensive and accessible treatment of the common and the less than common measurement models for the social, behavioral, and health sciences. The monograph explains the adequate use of measurement models for test construction, points out their merits and drawbacks, and critically discusses topics that have raised and continue to raise controversy. Because introductory texts on statistics and psychometrics are sufficient to understand its content, the monograph may be used in advanced courses on applied psychometrics, and is attractive to both researchers and graduate students in psychology, education, sociology, political science, medicine and marketing, policy research, and opinion research. The monograph provides an in-depth discussion of classical test theory and factor models in Chapter 2; nonparametric and parametric item response theory in Chapter 3 and Chapter 4, respectively; latent class models and cognitive diagnosis models in Chapter 5; and discusses pairwise comparison models, proximity models, response time models, and network psychometrics in Chapter 6. The chapters start with the theory and methods of the measurement model and conclude with a real-data example illustrating the measurement model.

Handbook of Item Response Theory, Volume One
Handbook of Research Methods in Industrial and Organizational Psychology
Multidimensional Item Response Theory
Measurement Models for Psychological Attributes

A Multidisciplinary Reference on Survey, Scale and Test Development

Item response theory (IRT) is a latent variable modeling approach used to minimize bias and optimize the measurement power of educational and psychological tests and other psychometric applications. Designed for researchers, psychometric professionals, and advanced students, this book clearly presents both the "how-to" and the "why" of IRT. It describes simple and more complex IRT models and shows how they are applied with the help of widely available software packages. Chapters follow a consistent format and build sequentially, taking the reader from model development through the fit analysis and interpretation phases that one would perform in practice. The use of common empirical data sets across the chapters facilitates understanding of the various models and how they relate to one another.

A must-have resource for researchers, practitioners, and advanced students interested or involved in psychometric testing Over the past hundred years, psychometric testing has proved to be a valuable tool for measuring personality, mental ability, attitudes, and much more. The word 'psychometrics' can be translated as 'mental measurement'; however, the implication that psychometrics as a field is confined to psychology is highly misleading. Scientists and practitioners from virtually every conceivable discipline now use and analyze data collected from questionnaires, scales, and tests developed from psychometric principles, and the field is vibrant with new and useful methods and approaches. This handbook brings together contributions from leading psychometricians in a diverse array of fields around the globe. Each provides accessible and practical information about their specialist area in a three-step format covering historical and standard approaches, innovative issues and techniques, and practical guidance on how to apply the methods discussed. Throughout, real-world examples help to illustrate and clarify key aspects of the topics covered. The aim is to fill a gap for information about psychometric testing that is neither too basic nor too technical and specialized, and will enable researchers, practitioners, and graduate students to expand their knowledge and skills in the area. Provides comprehensive coverage of the field of psychometric testing, from designing a test through writing items to constructing and evaluating scales Takes a practical approach, addressing real issues faced by practitioners and researchers Provides basic and accessible mathematical and statistical foundations of all psychometric techniques discussed Provides example software code to help readers implement the analyses discussed

Drawing on the work of internationally acclaimed experts in the field, Handbook of Item Response Theory, Volume One: Models presents all major item response models. This first volume in a three-volume set covers many model developments that have occurred in item response theory (IRT) during the last 20 years. It describes models for different response formats or response processes, the need of deeper parameterization due to a multilevel or hierarchical structure of the response data, and other extensions and insights. In Volume One, all chapters have a common format with each chapter focusing on one family of models or modeling approach. An introductory section in every chapter includes some history of the model and a motivation of its relevance. Subsequent sections present the model more formally, treat the estimation of its parameters, show how to evaluate its fit to empirical data, illustrate the use of the model through an empirical example, and discuss further applications and remaining research issues.

In this instant New York Times bestseller, Angela Duckworth shows anyone striving to succeed that the secret to outstanding achievement is not talent, but a special blend of passion and persistence she calls "grit." "Inspiration for non-geniuses everywhere" (People). The daughter of a scientist who frequently noted her lack of "genius," Angela Duckworth is now a celebrated researcher and professor. It was her early eye-opening stints in teaching, business consulting, and neuroscience that led to her hypothesis about what really drives success: not genius, but a unique combination of passion and long-term perseverance. In Grit, she takes us into the field to visit cadets struggling through their first days at West Point, teachers working in some of the toughest schools, and young finalists in the National Spelling Bee. She also mines fascinating insights from history and shows what can be gleaned from modern experiments in peak performance. Finally, she shares what she's learned from interviewing dozens of high achievers—from JP Morgan CEO Jamie Dimon to New Yorker cartoon editor Bob Mankoff to Seattle Seahawks Coach Pete Carroll. "Duckworth's ideas about the cultivation of tenacity have clearly changed some lives for the better" (The New York Times Book Review). Among Grit's most valuable insights: any effort you make ultimately counts twice toward your goal; grit can be learned, regardless of IQ or circumstances; when it comes to child-rearing, neither a warm embrace nor high standards will work by themselves; how to trigger lifelong interest; the magic of the Hard Thing Rule; and so much more. Winningly personal, insightful, and even life-changing, Grit is a book about what goes through your head when you fall down, and how that—not talent or luck—makes all the difference. This is "a fascinating tour of the psychological research

success" (The Wall Street Journal).
New Perspectives on Faking in Personality Assessment
Grit
Three Volume Set
Applications to Typical Performance Assessment
The Psychology of Survey Response

"Ordinal Item Response Theory is volume 169 in the SAGE Series "Quantitative Applications in the Social Sciences" (QASS). The of Ordinal Item Response Theory is referred to throughout many other QASS titles and fills a gap between the more classical topics of undimensional scaling, test theory, principal component and factor analysis. In addition, this volume also discusses parametric item response theory and latent class analysis. This monograph is less technical than many books on the market and is best suited for an introductory course in social science measurement"--

Item response theory has become an essential component in the toolkit of every researcher in the behavioral sciences. It provides a powerful means to study individual responses to a variety of stimuli, and the methodology has been extended and developed to cover many different models of interaction. This volume presents a wide-ranging handbook to item response theory – and its applications to educational and psychological testing. It will serve as both an introduction to the subject and also as a comprehensive reference volume for practitioners and researchers. It is organized into six major sections: the nominal categories model, models for response time or multiple attempts on items, models for multiple abilities or cognitive components, nonparametric models, models for nonmonotone items, and models with special assumptions. Each chapter in the book has been written by an expert of that particular topic, and the chapters have been carefully edited to ensure that a uniform style of notation and presentation is used throughout. As a result, all researchers whose work uses item response theory will find this an indispensable companion to their work and it will be the subject's reference volume for many years to come.

First thorough treatment of multidimensional item response theory Description of methods is supported by numerous practical examples Describes procedures for multidimensional computerized adaptive testing

The modeling of item response data is governed by item response theory, also referred to as

modern test theory. The eld of inquiry of item response theory has become very large and shows the enormous progress that has been made. The mainstream literature is focused on frequentist statistical methods for – timating model parameters and evaluating model t. However, the Bayesian methodology has shown great potential, particularly for making further – provements in the statistical modeling process. The Bayesian approach has two important features that make it attractive for modeling item response data. First, it enables the possibility of incorpor– ing nondata information beyond the observed responses into the analysis. The Bayesian methodology is also very clear about how additional information can be used. Second, the Bayesian approach comes with powerful simulation-based estimation methods. These methods make it possible to handle all kinds of priors and data-generating models. One of my motives for writing this book is to give an introduction to the Bayesian methodology for modeling and analyzing item response data. A Bayesian counterpart is presented to the many popular item response theory books (e.g., Baker and Kim 2004; De Boeck and Wilson, 2004; Hambleton and Swaminathan, 1985; van der Linden and Hambleton, 1997) that are mainly or completely focused on frequentist methods. The usefulness of the Bayesian methodology is illustrated by discussing and applying a range of Bayesian item response models.

An Item Response Modeling Approach
Handbook of Item Response Theory Modeling
Handbook of Research Methods in Abnormal and Clinical Psychology
The Theory and Practice of Item Response Theory
Principles and Applications

Item response theory (IRT) has moved beyond the confines of educational measurement into assessment domains such as personality, psychopathology, and patient-reported outcomes. Classic and emerging IRT methods and applications that are revolutionizing psychological measurement, particularly for health assessments used to demonstrate treatment effectiveness, are reviewed in this new volume. World renowned contributors present the latest research and methodologies about these models along with their applications and related challenges. Examples using real data, some from NIH-PROMIS, show how to apply these models in actual research situations. Chapters review fundamental issues of IRT, modern estimation methods, testing assumptions, evaluating fit, item banking, scoring in multidimensional models, and advanced IRT methods. New multidimensional models are provided along with suggestions for deciding among the family of IRT models available. Each chapter provides an introduction, describes state-of-the art research methods, demonstrates an application, and provides a summary. The book addresses the most

critical IRT conceptual and statistical issues confronting researchers and advanced students in psychology, education, and medicine today. Although the chapters highlight health outcomes data the issues addressed are relevant to any content domain. The book addresses: IRT models applied to non-educational data especially patient reported outcomes Differences between cognitive and non-cognitive constructs and the challenges these bring to modeling. The application of multidimensional IRT models designed to capture typical performance data. Cutting-edge methods for deriving a single latent dimension from multidimensional data A new model designed for the measurement of constructs that are defined on one end of a continuum such as substance abuse Scoring individuals under different multidimensional IRT models and item banking for patient-reported health outcomes How to evaluate measurement invariance, diagnose problems with response categories, and assess growth and change. Part 1 reviews fundamental topics such as assumption testing, parameter estimation, and the assessment of model and person fit. New, emerging, and classic IRT models including modeling multidimensional data and the use of new IRT models in typical performance measurement contexts are examined in Part 2. Part 3 reviews the major applications of IRT models such as scoring, item banking for patient-reported health outcomes, evaluating measurement invariance, linking scales to a common metric, and measuring growth and change. The book concludes with a look at future IRT applications in health outcomes measurement. The book summarizes the latest advances and critiques foundational topics such a multidimensionality, assessment of fit, handling non-normality, as well as applied topics such as differential item functioning and multidimensional linking. Intended for researchers, advanced students, and practitioners in psychology, education, and medicine interested in applying IRT methods, this book also serves as a text in advanced graduate courses on IRT or measurement. Familiarity with factor analysis, latent variables, IRT, and basic measurement theory is assumed.

By using familiar concepts from classical measurement methods and basic statistics, this book introduces the basics of item response theory (IRT) and explains the application of IRT methods to problems in test construction, identification of potentially biased test items, test equating and computerized-adaptive testing. The book also includes a thorough discussion of alternative procedures for estimating IRT parameters and concludes with an exploration of new directions in IRT research and development.

Drawing on the work of 75 internationally acclaimed experts in the field, Handbook of Item Response Theory, Three-Volume Set presents all major item response models, classical and modern statistical tools used in item response theory (IRT), and major areas of applications of IRT in educational and psychological testing, medical diagnosis of patient-reported outcomes, and marketing research. It also covers CRAN packages, WinBUGS, Bilog MG, Multilog, Parscale, IRTPRO, Mplus, GLLAMM, Latent Gold, and numerous other software tools. A full update of editor Wim J. van der Linden and Ronald K. Hambleton's classic Handbook of Modern Item Response Theory, this handbook has been expanded from 28 chapters to 85

chapters in three volumes. The three volumes are thoroughly edited and cross-referenced, with uniform notation, format, and pedagogical principles across all chapters. Each chapter is self-contained and deals with the latest developments in IRT.
Item Response Theory clearly describes the most recently developed IRT models and furnishes detailed explanations of algorithms that can be used to estimate the item or ability parameters under various IRT models. Extensively revised and expanded, this edition offers three new chapters discussing parameter estimation with multiple groups, parameter estimation for a test with mixed item types, and Markov chain Monte Carlo methods. It includes discussions on issues related to statistical theory, numerical methods, and the mechanics of computer programs for parameter estimation, which help to build a clear understanding of the computational demands and challenges of IRT estimation procedures.
The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation
Introduction to Item Response Theory Models and Applications
Parameter Estimation Techniques, Second Edition
Theory and Applications
Introduction to Psychometric Theory

Contributors consider what it means to "fake" a personality assessment, why and how people try to obtain particular scores on personality tests, and what types of tests people can successfully manipulate. The authors present and discuss the usefulness of a range of traditional and cutting-edge methods for detecting and controlling the practice of faking.
The United States Social Security Administration (SSA) administers two disability programs: Social Security Disability Insurance (SSDI), for disabled individuals, and their dependent family members, who have worked and contributed to the Social Security trust funds, and Supplemental Security Income (SSSI), which is a means-tested program based on income and financial assets for adults aged 65 years or older and disabled adults and children. Both programs require that claimants have a disability and meet specific medical criteria in order to qualify for benefits. SSA establishes the presence of a medically-determined impairment in individuals with mental disorders other than intellectual disability through the use of standard diagnostic criteria, which include symptoms and signs. These impairments are established largely on reports of signs and symptoms of impairment and functional limitation. Psychological Testing in the Service of Disability Determination considers the use of psychological tests in evaluating disability claims submitted to the SSA. This report critically reviews selected psychological tests, including symptom validity tests, that could contribute to SSA disability

determinations. The report discusses the possible uses of such tests and their contribution to disability determinations. Psychological Testing in the Service of Disability Determination discusses testing norms, qualifications for administration of tests, administration of tests, and reporting results. The recommendations of this report will help SSA improve the consistency and accuracy of disability determination in certain cases.

"Item Response Theory (IRT) is, increasingly, the psychometric method used for contemporary psychological tests. The goal of this book is to explain IRT. The book is especially useful to psychologists and social scientists familiar with small-scale cognitive and personality measures, of those who want to use IRT to analyze scales used in their own research. It is also useful for graduate students and practitioners who want to understand the contemporary, psychometric foundations of the tests they administer. Familiar psychological concepts are used to help explain various IRT principles. The book develops an intuitive understanding of IRT principles through its use of graphical displays and analysis of psychological principles."--Jacket.

In this volume prominent scholars from both psychology and education describe how these new rules of measurement work and how they differ from the old rules. Several contributors have been involved in the recent construction or revision of a major test, while others are well-known for their theoretical contributions to measurement. The goal is to provide an integrated yet comprehensive reference source concerned with contemporary issues and approaches in testing and measurement.

Handbook of Modern Item Response Theory
Fundamentals of Item Response Theory
Handbook of Item Response Theory, Volume Two
Bayesian Item Response Modeling
Item Response Theory

This is a highly accessible, comprehensive introduction to item response theory (IRT) models and their use in various aspects of assessment/testing. The book employs a mixture of graphics and simulated data sets to ease the reader into the material and covers the basics required to obtain a solid grounding in IRT. Written in an easily accessible way that assumes little mathematical knowledge, Carlson presents detailed descriptions of several commonly used IRT models, including those for items scored on a two-point (dichotomous) scale such as correct/incorrect, and those scored

on multiple-point (polytomous) scales, such as degrees of correctness. One chapter describes a model in-depth and is followed by a chapter of instructions and illustrations showing how to apply the models to the reader's own work. This book is an essential text for instructors and higher level undergraduate and postgraduate students of statistics, psychometrics, and measurement theory across the behavioral and social sciences, as well as testing professionals.
The Power of Passion and Perseverance
A Conceptual Guide to Statistics Using SPSS
Classical Test Theory, Factor Analysis, Item Response Theory, and Latent Class Models
Theory Into Practice