

Invariant Measurement Using Rasch Models In The Social Behavioral And Health Sciences By Engelhard Jr George 2012 Paperback

In the music classroom, instructors who hope to receive aid are required to provide data on their classroom programs. Due to the lack of reliable, valid large-scale assessments of student achievement in music, however, music educators in schools that accept funds face a considerable challenge in finding a way to measure student learning in their classrooms. From Australia to Taiwan to the Netherlands, music teachers experience similar struggles in the quest for a definitive assessment resource that can be used by both music educators and researchers. In this two-volume Handbook, contributors from across the globe come together to provide an authority on the assessment, measurement, and evaluation of student learning in music. The Handbook's first volume emphasizes international and theoretical perspectives on music education assessment in the major world regions. This volume also looks at technical aspects of measurement in music, and outlines situations where theoretical foundations can be applied to the development of tests in music. The Handbook's second volume offers a series of practical and US-focused approaches to music education assessment. Chapters address assessment in different types of US classrooms; how to assess specific skills or requirements; and how assessment can be used in tertiary and music teacher education classrooms. Together, both volumes of The Oxford Handbook of Assessment in Music Education pave the way forward for music educators and researchers in the field.

Several key developments challenge the field of educational measurement today: demands for tests at larger scales with higher stakes, an improved understanding of how people develop capabilities, and new technologies for interactive digital assessments. Sociocognitive Foundations of Educational Measurement integrates new developments in educational measurement and educational psychology in order to provide researchers, testing professionals, and students with an innovative sociocognitive perspective on assessment. This comprehensive volume begins with a broad explanation of the sociocognitive perspective and the foundations of assessment, then provides a series of focused applications to major topics such as assessment arguments, validity, fairness, interactive assessment, and a conception of "measurement" in educational assessment. Classical test theory, item response theory, categorical models, mixture models, cognitive diagnosis models, and Bayesian networks are explored from the resulting perspective. Ideal for specialists in these areas, graduate students, developers, and scholars in both educational measurement and fields that contribute to a sociocognitive perspective, this book consolidates nearly a decade of research into a fresh perspective on educational measurement.

This book constitutes the refereed proceedings of the 4th International Conference on Serious Games Development and Applications, SGDA 2013, held in Trondheim, Norway, in September 2013. The 32 papers (23 full papers, 9 short papers/posters and 2 invited keynotes) presented were carefully reviewed and selected from various submissions. The papers are organized in topical sections on games for health, games for education and training, games for other purposes, game design and theories, gaming interface, policy matters.

This book introduces current perspectives on Rasch measurement theory with an emphasis on developing Rasch-based scales. Authors George Engelhard Jr and Jue Wang introduce Rasch measurement theory step by step, with chapters on scale construction, evaluation, maintenance, and use. Points are illustrated and techniques are demonstrated through an extended example: The Food Insecurity Experience (FIE) Scale.

Fundamental Measurement in the Human Sciences, Second Edition

Serious Games Development and Applications

A Course In Rasch Measurement Theory

Applying the Rasch Model

Classical and Modern Measurement Theories for Rating Scales

Invariant Measurement

This book collects and organizes the original studies presented at PROMS 2015 conference on theories and applications of Rasch model. It provides useful examples of the Rasch model used to address practical measurement problems across a range of different disciplines including Item Response Theory (IRT), philosophy of measurement, dimensionality, the role of fit statistics and residuals, application, educational application, language testing, health-related research, business and industrial application and Rasch-based computer software. PROMS 2015 (Pacific Rim Objective Measurement Symposium) was held from August 20-24th 2015, in Fukuoka, Japan. The goal of this conference is to bring together the researchers from academia, universities, hospitals, industry, management sector as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of Rasch Model.

Chronic diseases have become predominant in Western societies and in many developing countries. They affect quality of life and daily activities and require regular medical care. This unique monograph will bring readers up to date with chronic disease research, with a focus on health-related quality of life and patient perception of the impact of the diseases and health intervention, as well as psychological adaptation to the disease. It considers the application of concepts and measures in medical and psychological clinical practice and in public health policies. Informed by theory, philosophy, history and empirical research, chapters will indicate how readers might advance their own thinking, learning, practice and research. The book is intended to be provocative and challenging to enhance discussion about theory as a key component of research and practice. Perceived Health and Adaptation in Chronic Disease will be of interest to researchers and academics alike. It boasts a wide range of contributions from leading international specialists from Australia, Canada, Denmark, France, Germany, the Netherlands, Spain, Sweden, the UK and the USA. This has also allowed the book to provide readers with a multidisciplinary approach.

Cited over 1900 times, this classic text facilitates a deep understanding of the Rasch model. The authors review the crucial properties of the model and demonstrate its use with a variety of examples from education, psychology, and health. A glossary and numerous illustrations aid the reader's understanding. Readers learn how to apply Rasch analysis so they can perform their own analyses and interpret the results. The authors present an accessible overview that does not require a mathematical background. Highlights of the new edition include: -More learning tools to strengthen readers' understanding including chapter introductions, boldfaced key terms, chapter summaries, activities, and suggested readings. -Divided chapters (4, 6, 7 & 8) into basic and extended understanding sections so readers can select the level most appropriate for their needs and to provide more in-depth investigations of key topics. -A website at www.routledge.com/9780415833424 that features free Rasch software, data sets, an Invariance worksheet, detailed instructions for key analyses, and links to related sources. -Greater emphasis on the role of Rasch measurement as a priori in the construction of scales and its use post hoc to reveal the extent to which interval scale measurement is instantiated in existing data sets. -Emphasizes the importance of interval level measurement data and demonstrates how Rasch measurement is used to examine measurement invariance. -Insights from other Rasch scholars via innovative applications (Ch. 9). -Extended discussion of invariance now reviews DIF, DPF, and anchoring (ch. 5). -Revised Rating Scale Model material now based on the analysis of the CEAO (ch.6). -Clarifies the relationships between Rasch measurement, True Score Theory, and Item Response Theory by reviewing their commonalities and differences (Ch.13). -Provides more detail on how to conduct a Rasch analysis so readers can use the techniques on their own (Appendix B). Intended as a text for graduate courses in measurement, item response theory, (advanced) research methods or quantitative analysis taught in psychology, education, human development, business, and other social and health sciences, professionals in these areas also appreciate the book's accessible introduction.

This book gathers original studies presented at the PROMS 2016 conference on Rasch theories and Rasch-based applications. It provides significant examples used to address practical measurement problems across a range of disciplines, including: Classic Testing Theory (CTT), Item Response Theory (IRT), philosophy of measurement, dimensionality, the role of fit statistics and research, business and industrial applications, health-related research and the latest Rasch-based computer software. PROMS welcomes empirical and theoretical studies and workshops, preferably with an emphasis on the Rasch model. Special attention is paid to manuscripts submitted by non-native English-speaking authors from Pacific Rim countries, regions and beyond. PROMS 2016 (Pacific Rim Objective Measurement Symposium) was held July 30-August 3, 2016 in Xi'an, China. The goal of the conference was to bring together researchers, scholars and professors from research institutes, universities, hospitals, business and management sectors, as well as professional practitioners, to exchange and share ideas, problems and solutions regarding the multifaceted aspects of the Rasch model and on the much debated yet highly topical issues of objective assessment.

The History of Educational Measurement

Quantitative Data Analysis for Language Assessment Volume I

Measurement Error in Longitudinal Data

Trends in Language Assessment Research and Practice

The View from the Middle East and the Pacific Rim

Basic Elements of Survey Research in Education

The Measurement of Health and Health Status: Concepts, Methods and Applications from a Multidisciplinary Perspective presents a unifying perspective on how to select the best measurement framework for any situation. Serving as a one-stop shop that unifies material currently available in various locations, this book illuminates the intuition behind each method, explaining how each method has special purposes, what developments are occurring, and how new combinations among methods might be relevant to specific situations. It especially emphasizes the measurement of health and health states (quality-of-life), giving significant attention to newly developed methods. The book introduces technically complex, new methods for both introductory and technically-proficient readers. Assumes that the best measure depends entirely on the situation Covers preference-based methods, classical test theory, and item response theory Features illustrations and animations drawn from diverse fields and disciplines

Under pressure and support from the federal government, states have increasingly turned to indicators based on student test scores to evaluate teachers and schools, as well as students themselves. The focus thus far has been on test scores in those subject areas where there is a sequence of consecutive tests, such as in mathematics or English/language arts with a focus on grades 4-8. Teachers in these subject areas, however, constitute less than thirty percent of the teacher workforce in a district.

Comparatively little has been written about the measurement of achievement in the other grades and subjects. This volume seeks to remedy this imbalance by focusing on the assessment of student achievement in a broad range of grade levels and subject areas, with particular attention to their use in the evaluation of teachers and schools in all. It addresses traditional end-of-course tests, as well as alternative measures such as portfolios, exhibitions, and student learning objectives. In each case, issues related to design and development, psychometric considerations, and validity challenges are covered from both a generic and a content-specific perspective. The NCME Applications of Educational Measurement and Assessment series includes edited volumes designed to inform research-based applications of educational measurement and assessment. Edited by leading experts, these books are comprehensive and practical resources on the latest developments in the field. The Open Access version of this book, available at <http://www.taylorfrancis.com>, has been made available under a Creative Commons Attribution-Non Commercial-No Derivatives 4.0 license

This book focuses on the use of the Rasch measurement model in validation studies and in analyzing the psychometric properties of a variety of test instruments, questionnaires, and scales in international contexts. It broadly examines the development and application of Rasch modeling, providing in-depth analyses of the properties of various scales used in the fields of education, and humanities and social sciences research. The book includes exemplary works on educational research and practices that highlight recent and innovative applications, as well as theoretical and practical aspects of Rasch modeling. Readers will find it helpful to understand the latest approaches to Rasch measurement in educational research, as well as practices for future studies and quantitative research. This book provides a diverse set of perspectives on Rasch models from scholars across the globe. The volume is both theoretical and applied. The first section of the book provides an overview of Rasch modeling and explains the theoretical and conceptual framework underlying the Rasch model. The remainder of the book highlights multiple applications of the Rasch model within educational assessment as well as several examples of how Rasch modeling can be used for validation studies. This volume showcases the wide variety of ways in which Rasch modeling can be applied to assessment data to provide insights into students' achievement and learning and to improve instruction. -Betsy McCooch, University of Connecticut, USA. "A well-written collection of articles. Grouped by the theoretical and applied aspects of Rasch measurement, each chapter in this edited volume makes notable contributions to knowledge and practice. Written by leading scholars in the field, these chapters were written in a clear, succinct, and assertive manner, providing readers with up-to-date information, analyses, and debates. This book should be found in the core collection of emerging researchers and established scholars in educational measurement."-Timothy Tao, Murdoch University, Australia.

This user-friendly guide illustrates how to assess measurement invariance using computer programs, statistical methods, and real data.

The Career and Contributions of Benjamin D. Wright

Food Security Policy, Evaluation and Impact Assessment

Statistical Approaches to Measurement Invariance

4th International Conference, SGDA 2013, Trondheim, Norway, September 25-27, 2013, Proceedings

Invariant Measurement with Raters and Rating Scales

An Item Response Modeling Approach

This book offers an essential, comprehensive, yet accessible reference of contemporary food security discourse and guides readers through the steps required for food security analysis. Food insecurity is a major obstacle to development and achievement of the Sustainable Development Goals. It is a complex issue that cuts across traditional sectors in government and disciplines in academia. Understanding how multiple elements cause and influence food security is essential for policymakers, practitioners and scholars. This book demonstrates how evaluation can integrate the four elements of food security (availability, access, nutrition and resilience) and offers practical tools for policy and programme impact assessment to support evidence-based planning. Aimed at researchers, postgraduates and those undertaking professional development in food studies, agricultural economics, rural development, nutrition and public health, the book is key reading for those seeking to understand evidence-based food security analysis.

This book is a valuable read for a diverse group of researchers and practitioners who analyze assessment data and construct test instruments. It focuses on the use of classical test theory (CTT) and item response theory (IRT), which are often required in the fields of psychology (e.g. for measuring psychological traits), health (e.g. for measuring the severity of disorders), and education (e.g. for measuring student performance), and makes these analytical tools accessible to a broader audience. Having taught assessment subjects to students from diverse backgrounds for a number of years, the three authors have a wealth of experience in presenting educational measurement topics, in-depth concepts and applications in an accessible format. As such, the book addresses the needs of readers who use CTT and IRT in their work but do not necessarily have an extensive mathematical background. The book also sheds light on common misconceptions in applying measurement models, and presents an integrated approach to different measurement methods, such as contrasting CTT with IRT and multidimensional IRT models with unidimensional IRT models. Wherever possible, comparisons between models are explicitly made. In addition, the book discusses concepts for test equating and differential item functioning, as well as Bayesian IRT models and plausible values using simple examples. This book can serve as a textbook for introductory courses on educational measurement, as supplementary reading for advanced courses, or as a valuable reference guide for researchers interested in analyzing student assessment data.

The purpose of this book is to present methods for developing, evaluating and maintaining rater-mediated assessment systems. Rater-mediated assessments involve ratings that are assigned by raters to persons responding to constructed-response items (e.g., written essays and teacher portfolios) and other types of performance assessments. This book addresses the following topics: (1) introduction to the principles of invariant measurement, (2) application of the principles of invariant measurement to rater-mediated assessments, (3) description of the lens model for rater judgments, (4) integration of principles of invariant measurement with the lens model of cognitive processes of raters, (5) illustration of substantive and psychometric issues related to rater-mediated assessments in terms of validity, reliability, and fairness, and (6) discussion of theoretical and practical issues related to rater-mediated assessment systems. Invariant measurement is fast becoming the dominant paradigm for assessment systems around the world, and this book provides an invaluable resource for graduate students, measurement practitioners, substantive theorists in the human sciences, and other individuals interested in invariant measurement when judgments are obtained with rating scales.

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A Research-Supported Approach

Fundamental Measurement in the Human Sciences

Fundamental Techniques

13th European Conference on Technology Enhanced Learning, EC-TEL 2018, Leeds, UK, September 3-5, 2018, Proceedings

Assessing Measurement Invariance for Applied Research

Invariant Measurement with Raters

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 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 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 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 sociological measures. Knowledge of basic descriptive statistics and elementary regression is recommended.

Written in an accessible style, this book facilitates a deep understanding of the Rasch model. Authors Bond and Fox review the crucial properties of the Rasch model and demonstrate its use with a wide range of examples including the measurement of educational achievement, human development, attitudes, and medical rehabilitation. A glossary and numerous illustrations further aid the reader's understanding. The authors demonstrate how to apply Rasch analysis and prepare research highlights of the Second Edition include: a new CD that features an introductory version of the latest Winsteps program and the data files for the book's examples, preprogrammed to run using Winsteps; a new chapter on invariance that highlights the parallels between physical and human science measurement; a new appendix on analyzing data to help those new to Rasch analysis; more explanation of the key concepts and item characteristic curves; a new empirical example with examples; and an increased focus on issues related to unidimensionality, multidimensionality, and the Rasch factor analysis of residuals. Applying the Rasch Model is intended for researchers and practitioners in psychology, especially developmental psychologists, education, health care, medical rehabilitation, business, government, and those interested in measuring attitude, ability, and/or performance. The book is an excellent text for use in courses on advanced research methods, or applied measurement.

This book applies Rasch measurement theory to the fields of education, psychology, sociology, marketing and health outcomes in order to measure various social constructs. The chief focus is on first principles of both the theory and its applications. Because software is readily available to carry out analyses of real data, numerous small examples are provided in the book. The software used in these examples, and which is helpful in working through the text, is RUMM2030 (Rasch Measurement Model). The book is intended for researchers and practitioners in psychology, education, health care, medical rehabilitation, business, government, and those interested in measuring attitude, ability, and/or performance. The book is an excellent text for use in courses on advanced research methods, or applied measurement. This book applies Rasch measurement theory to the fields of education, psychology, sociology, marketing and health outcomes in order to measure various social constructs. The chief focus is on first principles of both the theory and its applications. Because software is readily available to carry out analyses of real data, numerous small examples are provided in the book. The software used in these examples, and which is helpful in working through the text, is RUMM2030 (Rasch Measurement Model). The book is intended for researchers and practitioners in psychology, education, health care, medical rehabilitation, business, government, and those interested in measuring attitude, ability, and/or performance. The book is an excellent text for use in courses on advanced research methods, or applied measurement. This book applies Rasch measurement theory to the fields of education, psychology, sociology, marketing and health outcomes in order to measure various social constructs. The chief focus is on first principles of both the theory and its applications. Because software is readily available to carry out analyses of real data, numerous small examples are provided in the book. The software used in these examples, and which is helpful in working through the text, is RUMM2030 (Rasch Measurement Model). The book is intended for researchers and practitioners in psychology, education, health care, medical rehabilitation, business, government, and those interested in measuring attitude, ability, and/or performance. The book is an excellent text for use in courses on advanced research methods, or applied measurement.

In this tribute to Benjamin Wright, former students and colleagues recall the foundational contributions he made to the theory and practice of measurement in a career spanning over five decades. Wright is recognized as the foremost proponent of the psychometric approach of Georg Rasch, a Danish mathematician, whose ideas continue to provoke controversy. Wright's colleagues and students, and students of their students, are leaders in educational research and practice across education and psychology, where his work in measurement began, into health care and the social sciences at large. The editors and contributors—all leading measurement scholars—trace the development of themes in Wright's work, identifying the roots of today's formative assessment methods, the integration of quantitative and qualitative data, and the contrast between scientific and statistical methods. These previously unpublished papers reflect on Wright's lifelong passion for Wright's insight, energy, and gregarious nature led him to produce multiple innovations in computing, estimation methods, model development, fit assessment, and reliability theory, stimulating practical applications in dozens of fields, serving on over 120 dissertation committees, and founding several professional societies. The volume includes three reprinted articles by Wright that provide insights into his early engagement with Rasch's ideas. Psychological and Social Measurement: Theoretical Foundations and Applications for Researchers and Practitioners in Psychology, Education, Health Care, and Business: A Review of Rasch Analysis: A New Perspective on the Expanding Conversation Across the Sciences about Measurement and the Communication of Meaningful, Transparent Information.

The Oxford Handbook of Assessment Policy and Practice in Music Education

Fundamental Measurement in the Human Sciences, Third Edition

Rasch and the Future

Educational Measurement for Applied Researchers

Pacific Rim Objective Measurement Symposium (PROMS) 2014 Conference Proceedings

Invariant Measurement in the Social Sciences

Invariant MeasurementUsing Rasch Models in the Social, Behavioral, and Health SciencesRoutledge Academic

Quantitative Data Analysis for Language Assessment Volume I: Fundamental Techniques is a resource book that presents the most fundamental techniques of quantitative data analysis in the field of language assessment. Each chapter provides an accessible explanation of the selected technique, a review of language assessment studies that have used the technique, and finally, an example of an authentic study that uses the technique. Readers also get a taste of how to apply each technique through the help of supplementary online resources that include sample data sets and guided instructions. Language assessment students, test designers, and researchers should find this a unique reference as it consolidates theory and application of quantitative data analysis in language assessment. This introductory text describes the principles of invariant measurement, how invariant measurement can be achieved with Rasch models, and how to use invariant measurement to solve measurement problems in the social, behavioral, and health sciences. Rasch models are used throughout but a comparison of Rasch models to other item response theory (IRT) models is also provided. Written with students in mind, the manuscript was class tested to help maximize accessibility. Chapters open with an introduction and close with a summary and discussion. Numerous examples and exercises demonstrate the main issues addressed in each chapter. Key terms are defined when first introduced and in an end-of-text glossary. All of the book's analyses were conducted with the Facets program. The data sets used in the book, sample syntax files for running the Facets program, Excel files for creating item and person response functions, links to related websites, and other material are available at www.GeorgeEngelhard.com. Highlights include: A strong philosophical and methodological approach to measurement in the human sciences Demonstrations of how measurement problems can be addressed using invariant measurement Practical illustrations of how to create and evaluate scales using invariant measurement A history of measurement based on test-score and scaling traditions Previously unpublished work in analyzing rating data, the detection and measurement of rater errors, and the evaluation of rater accuracy A review of estimation methods, model-data fit, indices used to evaluate the quality of rater-mediated assessments, rater error and bias, and rater accuracy. Intended as a supplementary text for graduate or advanced undergraduate courses on measurement or test theory, item response theory, scaling theory, psychometrics, advanced measurement techniques, research methods, or evaluation research taught in education, psychology, and the social and health sciences, the book also appeals to practitioners and researchers in these fields who develop or use scales and instruments. Only a basic mathematical level is required including a basic course in statistic.

This book provides a thorough background of the Model Cornerstone Assessments (MCAs) and the confidence measures administered to guide implementation by teachers, administrators, and the educational community.

84th Annual Meeting of the Psychometric Society, Santiago, Chile, 2019

Sociocognitive Foundations of Educational Measurement

Concepts, Methods and Applications from a Multidisciplinary Perspective

Rasch Models for Solving Measurement Problems

Quantitative Psychology

Using Rasch Models in the Social, Behavioral, and Health Sciences

JSL invites the submission of manuscripts that contribute to the exchange of ideas and scholarship about schools and leadership. All theoretical and methodological approaches are welcome. We do not advocate or practice a bias toward any mode of inquiry (e.g., qualitative vs. quantitative; empirical vs. conceptual; discipline-based vs. interdisciplinary) and instead operate from the assumption that all careful and methodologically sound research has the potential to contribute to our understanding of school leadership. We strongly encourage authors to consider both the local and global implications of their work. The journal's goal is to clearly communicate with a diverse audience including both school-based and university-based educators. The journal embraces a broad conception of school leadership and welcomes manuscripts that reflect the diversity of ways in which this term is understood. The journal is interested not only in manuscripts that focus on administrative leadership in schools and school districts, but also in manuscripts that inquire about teacher, student, parent, and community leadership.

Recognised as the most influential publication in the field, ARM facilitates deep understanding of the Rasch model and its practical applications. The authors review the crucial properties of the model and demonstrate its use with examples across the human sciences. Readers will be able to understand and critically evaluate Rasch measurement research, perform their own Rasch analyses and interpret their results. The glossary and illustrations support that understanding, and the accessible approach means that it is ideal for readers without a mathematical background. Highlights of the new edition include: More learning tools to strengthen readers' understanding including chapter introductions, boldfaced key terms, chapter summaries, activities and suggested readings. Greater emphasis on the use of R packages; readers can download the R code from the Routledge website. Explores the distinction between numerical values, quantity and units, to understand the measurement and the role of the Rasch logit scale (Chapter 4). A new four-option data set from the IASQ (Instrumental Attitude towards Self-assessment Questionnaire) for the Rating Scale Model (RSM) analysis exemplar (Chapter 6). Clarifies the relationship between Rasch measurement, path analysis and SEM, with a host of new examples of Rasch measurement applied across health sciences, education and psychology (Chapter 10). Intended as a text for graduate courses in measurement, item response theory, (advanced) research methods or quantitative analysis taught in psychology, education, human development, business, and other social and health sciences. Professionals in these areas will also appreciate the book's accessible introduction.

An Introduction to the Rasch Model with Examples in R offers a clear, comprehensive introduction to the Rasch model along with practical examples in the free, open-source software R. It is accessible for readers without a background in psychometrics or statistics, while also providing detailed explanations of the relevant mathematical and statistical concepts for readers who want to gain a deeper understanding. Its worked examples in R demonstrate how to apply the methods to real-world examples and how to interpret the resulting output. In addition to motivating and presenting the Rasch model, the book covers different methods for parameter estimation and for assessing fit and differential item functioning (DIF). While focusing on the Rasch model, it also addresses a variety of other dichotomous and polytomous Rasch and item response theory (IRT) models, such as two-parameter logistic (2PL) and Partial Credit models, and extensions, including mixture Rasch models and computerized adaptive testing (CAT). Theory is presented in a self-contained way. All necessary mathematical and statistical background is contained in the chapters and appendices.

The book also provides detailed, step-by-step instructions for getting started with R and using the eRM, mirt, TAM and rstan packages for fitting Rasch models. This book introduces current perspectives on Rasch measurement theory with an emphasis on developing Rasch-based scales. Rasch measurement theory represents a paradigm shift in measurement theory away from classical test theory and creates a framework for scaling that can yield invariant measurement. Rasch Models for Solving Measurement Problems: Invariant Measurement in the Social Sciences is a broadly accessible text. Authors George Engelhard Jr and Jue Wang introduce Rasch measurement theory step by step, with chapters on scale construction, evaluation, maintenance, and use. Points are illustrated and techniques are demonstrated through an extended example: The Food Insecurity Experience (FIE) Scale. The Rasch analyses in the book are run using the Facets computer program. Facets syntax, and R code for the ERMA program created by the authors to obtain parameter estimates and to examine model-data fit, together with sample data sets are all available on a website for the book.

Applications in Quantitative Educational Research

*Perceived Health and Adaptation in Chronic Disease
Pacific Rim Objective Measurement Symposium (PROMS) 2016 Conference Proceedings
Meeting the Challenges to Measurement in an Era of Accountability
Theory into Practice*

Rasch Measurement Theory Analysis in R

This book constitutes the proceedings of the 13th European Conference on Technology Enhanced Learning, EC-TEL 2018, held in Leeds, UK, in September 2018. The 42 full and short papers, 7 demo papers, and 23 poster papers presented in this volume were carefully reviewed and selected from 142 submissions. This year, the European Conference on Technology-Enhanced Learning (EC-TEL) will engage researchers, practitioners, educational developers, entrepreneurs and policy makers in a joint discussion on how to put science, technology and practice at the service of learning to embrace these challenges on the topic: Lifelong technology enhanced learning: Dealing with the complexity of 21st century challenges. /div Chapter "" is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

Despite prodigious developments in the field of language assessment in the Middle East and the Pacific Rim, research and practice in these areas have been underrepresented in mainstream literature. This volume takes a fresh look at language assessment in these regions, and provides a unique overview of contemporary language assessment research. In compiling this book, the editors have tapped into the knowledge of language and educational assessment experts whose diversity of perspectives and experience has enriched the focus and scope of language and educational assessment in general, and the present volume in particular. The six trends' addressed in the 26 chapters that comprise this title consider such contemporary topics as data mining, in-class assessment, and washback. The contributors explore new approaches and techniques in language assessment including advances resulting from multidisciplinary collaboration with researchers in computer science, genetics, and neuroscience. The current trends and promising new directions identified in this volume and the research reported here suggest that researchers across the Middle East and the Pacific Rim are playing—and will continue to play—an important role in advancing the quality, utility, and fairness of language testing and assessment practices.

In this first book of the series Survey Methods in Educational Research, we have brought together leading authors and scholars in the field to discuss key introductory concepts in the creation, implementation, evaluation and dissemination of survey instruments and their resultant findings. While there are other textbooks that might introduce these concepts adequately well, the authors here have focused on the pragmatic issues that inevitably arise in the development and administration process of survey instruments. Drawing from their rich experiences, the authors present these potential speed bumps or road blocks a survey researcher in education or the social sciences might encounter. Referencing their own work and practice, the authors provide valuable suggestions for dealing with these issues "your advisor never told you about." And all of the recommendations are aligned with standard protocols and current research on best practices in the field of research methodology. This book is broken into four broad units on creating survey items and instruments, administering surveys, analyzing the data from surveys, and stories of successful administrations modeling the entire research cycle. Each chapter focuses on a different concept in the survey research process, and the authors share their approaches to addressing the issues. These topics include survey item construction, scale development, cognitive interviewing, measuring change with self-report data, translation issues with surveys administered in multiple languages, working with school and program administrators when implementing surveys, a review of current software used in survey research, the use of weights, response styles, assessing validity of results, and effectively communicating your results and findings ... and much more. The intended audience of the volume will be practitioners, administrators, teachers as researchers, graduate students, social science and education researchers not experienced in survey research, and students learning program evaluation. In brief, if you are considering doing survey research, this book is meant for you.

This book reviews the statistical procedures used to detect measurement bias. Measurement bias is examined from a general latent variable perspective so as to accommodate different forms of testing in a variety of contexts including cognitive or clinical variables, attitudes, personality dimensions, or emotional states. Measurement models that underlie psychometric practice are described, including their strengths and limitations. Practical strategies and examples for dealing with bias detection are provided throughout.

Lifelong Technology-Enhanced Learning

JSL Vol 26-N5

Constructing Measures

Psychological and Social Measurement

Measuring in the Educational, Social and Health Sciences

Rasch Models for Rater-Mediated Assessments

Rasch Measurement Theory Analysis in R provides researchers and practitioners with a step-by-step guide for conducting Rasch measurement theory analyses using R. It includes theoretical introductions to major Rasch measurement principles and techniques, demonstrations of analyses using several R packages that contain Rasch measurement functions, and sample interpretations of results.

Features: Accessible to users with relatively little experience with R programming Reproducible data analysis examples that can be modified to accommodate users' own data Accompanying e-book website with links to additional resources and R code updates as needed Features dichotomous and polytomous (rating scale) Rasch models that can be applied to data from a wide range of disciplines

This book is designed for graduate students, researchers, and practitioners across the social, health, and behavioral sciences who have a basic familiarity with Rasch measurement theory and with R. Readers will learn how to use existing R packages to conduct a variety of analyses related to Rasch measurement theory, including evaluating data for adherence to measurement requirements, applying the dichotomous, Rating Scale, Partial Credit, and Many-Facet Rasch models, examining data for evidence of differential item functioning, and considering potential interpretations of results from such analyses.

Rasch Measurement Theory Analysis in R provides researchers and practitioners with a step-by-step guide for conducting Rasch measurement theory analyses using R. It includes theoretical introductions to major Rasch measurement principles and techniques, demonstrations of analyses using several R packages that contain Rasch measurement functions, and sample interpretations of results.

Features: Accessible to users with relatively little experience with R programming Reproducible data analysis examples that can be modified to accommodate users' own data Accompanying e-book website with links to additional resources and R code updates as needed Features dichotomous and polytomous (rating scale) Rasch models that can be applied to data from a wide range of disciplines

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Measurement Error in Longitudinal Data tackles the important issue of how to understand and estimate change in the context of imperfect data.

This proceedings volume highlights the latest research and developments in psychometrics and statistics. It represents selected and peer reviewed presentations given at the 84th Annual International Meeting of the Psychometric Society (IMPS), organized by Pontificia Universidad Católica de Chile and held in Santiago, Chile during July 15th to 19th, 2019. The IMPS is one of the largest international meetings on quantitative measurement in education, psychology and the social sciences. It draws approximately 500 participants from around the world, featuring paper and poster presentations, symposiums, workshops, keynotes, and invited presentations. Leading experts and promising young researchers have written the included chapters. The chapters address a large variety of topics including but not limited to item response theory, multistage adaptive testing, and cognitive diagnostic models. This volume is the 8th in a series of recent volumes to cover research presented at the IMPS.

Pacific Rim Objective Measurement Symposium (PROMS) 2015 Conference Proceedings

The Measurement of Health and Health Status

Key Advancements in Theory, Policy, and Practice

Addressing the Problems Your Advisor Never Told You About

Rasch Measurement

The History of Educational Measurement collects essays on the most important topics in educational testing, measurement, and psychometrics. Authored by the field's top scholars, this book offers unique historical viewpoints, from origins to modern applications, of formal testing programs and mental measurement theories. Topics as varied as large-scale testing, validity, item-response theory, federal involvement, and notable assessment controversies complete a survey of the field's greatest challenges and most important achievements. Graduate students, researchers, industry professionals, and other stakeholders will find this volume relevant for years to come.

This book collects and organizes the original studies presented at PROMS 2014 conference on theories and applications of Rasch model. It provides useful examples of the Rasch model used to address practical measurement problems across a range of different disciplines including: Item Response Theory (IRT), philosophy of measurement, dimensionality, the role of fit statistics and residuals, application, educational application, language testing, health related research, business and industrial application and Rasch-based computer software. PROMS 2014 (Pacific Rim Objective Measurement Symposium) was held August 2 - 6, 2014 in Guangzhou, China. The goal of this conference is to bring together the researchers from academia, universities, hospitals, industry, management sector as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of Rasch Model.

An Introduction to the Rasch Model with Examples in R

Applying Model Cornerstone Assessments in K-12 Music