MEASUREMENT IN MARKETING
EDITORIAL ADVISORY BOARD

Rick P. Bagozzi
University of Michigan, USA

Russell Belk
York University, Canada

Ruth Bolton
Arizona State University, USA

George Day
University of Pennsylvania, USA

Dhruv Grewal
Babson College, USA

Michael Houston
University of Minnesota, USA

Shelby Hunt
Texas Tech University, USA

Dawn Iacobucci
Vanderbilt University, USA

Barbara Kahn
University of Pennsylvania, USA

Wagner Kamakura
Rice University, USA

V. Kumar
St John’s University, USA

Angela Y. Lee
Northwestern University, USA

Donald Lehmman
Columbia University, USA

Debbie MacInnis
University of Southern California, USA

Kent B. Monroe
University of Illinois, USA

Nelson Ndubisi
King Fahd University of Petroleum & Minerals, Saudi Arabia

A. Parasuraman
University of Miami, USA

William Perreault
University of North Carolina, USA

Robert A. Peterson
University of Texas, USA

Jagmohan S. Raju
University of Pennsylvania, USA

Aric Rindfleisch
University of Illinois, USA

Jagdish N. Sheth
Emory University, USA

Itamar Simonson
Stanford University, USA

David Stewart
Loyola Marymount University, USA

Rajan Varadarajan
Texas A&M University, USA

Stephen L. Vargo
University of Hawaii, USA

Michel Wedel
University of Maryland, USA

Manjit Yadav
Texas A&M University, USA
CONTENTS

About the Editor-in-Chief ix
About the Contributors xi
Introduction xv

Measurement in Marketing: Introduction by the Volume Editors 1
Hans Baumgartner and Bert Weijters

Philosophical Foundations of Concepts and Their Representation and Use in Explanatory Frameworks 5
Richard P. Bagozzi

Accounting for Uncertainty in the Measurement of Unobservable Marketing Phenomena 53
Edward E. Rigdon and Marko Sarstedt

Measurement Error and Research Design: Some Practical Issues in Conducting Research 75
Madhu Viswanathan

Hester Van Herk and Sjoukje P. K. Goldman

How to Identify Careless Responders in Surveys 121
Hans Baumgartner and Bert Weijters

An Application of M-MORE: A Multivariate Multiple Objective Random Effects Approach to Marketing Scale Dimensionality and Item Selection 143
Adam Finn and Ujwal Kayande
On the Selection and Use of Implicit Measures in Marketing Research: A Utilitarian Taxonomy
Hendrik Slabbinck and Adriaan Spruyt

Index
ABOUT THE EDITOR-IN-CHIEF

Dr Naresh K. Malhotra was selected as a Marketing Legend in 2010 and his refereed journal articles were published in nine volumes by Sage with tributes by other leading scholars in the field. He is listed in Marquis Who’s Who in America, and in Who’s Who in the World. In 2017, he received the Albert Nelson Marquis Lifetime Achievement Award from Marquis Who’s Who. In 2020, Dr Malhotra was listed in the published list of the World’s Top 2% Most-cited Researchers across all disciplines, according to research conducted by the Meta-Research Innovation Center at Stanford University. He has several top (number one) research rankings that have been published in the literature.
This page intentionally left blank
ABOUT THE CONTRIBUTORS

Richard Bagozzi is the Dwight F. Benton Professor of Behavioral Science in Management at the Ross School of Business, the University of Michigan. He holds honoris causae from University of Lausanne, Switzerland, Antwerp University, Belgian, and Norwegian School of Economics. He was a Senior Fulbright Hays Scholar in Germany, and was awarded the Medal of Science from the University of Bologna, Italy. Professor Bagozzi has been recognized by Thomson Reuters for ranking among the top 1% most cited researchers.

Hans Baumgartner is the Smeal Chair Professor of Marketing in the Smeal College of Business at the Pennsylvania State University, University Park, PA. His research interests are in consumer psychology and research methodology, particularly structural equation modeling and measurement analysis. His work on measurement has appeared in the Journal of Marketing Research, Journal of Consumer Research, Marketing Science, International Journal of Research in Marketing, Journal of Consumer Psychology, Journal of the Academy of Marketing Science, Psychological Methods, Organizational Research Methods, and Sociological Methods and Research. He is the author (together with Bert Weijters) of the monograph Measurement in Marketing.


Sjoukje Goldman is a Lecturer of Marketing and Statistics at the Amsterdam University of Applied Sciences in Amsterdam and a PhD candidate at Vrije Universiteit Amsterdam. Her main research interests are in consumer behavior and firm strategies in cross-border e-commerce, making cross-cultural comparisons between e-retailing firms originating from developed and developing e-commerce markets, as well as in consumers’ shopping online across national borders. She has published on these subjects in the International Small Business Journal.

Professor Ujwal Kayande is the Director of the Centre for Business Analytics, Associate Dean (Business Analytics), and Professor of Marketing at Melbourne Business School. He is also the RHB Bank Visiting Chair Professor in Analytics.
Edward E. Rigdon is Professor of Marketing at Georgia State University in Atlanta, Georgia (USA). Dr. Rigdon cofounded semnet, an email discussion list devoted to structural equation modeling (SEM). His research on structural equation modeling methods and on accounting for uncertainty in social science research has been published in the *Journal of Marketing Research*, *Journal of Consumer Research*, *MIS Quarterly*, *Information Systems Research*, *Psychometrika*, *Multivariate Behavioral Research*, *Nature Human Behaviour*, and elsewhere.

Marko Sarstedt is a Full Professor of Marketing at the Ludwig Maximilian University of Munich (Germany) and an Adjunct Research Professor at Babeș-Bolyai University in Cluj-Napoca (Romania). His main research interest is the advancement of research methods to further the understanding of consumer behavior. His research has been published in *Nature Human Behaviour*, *Journal of Marketing Research*, *Journal of the Academy of Marketing Science*, *Multivariate Behavioral Research*, *Organizational Research Methods*, *MIS Quarterly*, and *Psychometrika*, among others.

Hendrik Slabbinck is Associate Professor of Marketing at Ghent University and founding member of the Behavioral Economics for Life (BE4LIFE) research center. Hendrik is a multidisciplinary researcher with publications in various domains such as consumer behavior and entrepreneurship. A golden thread that connects his research is his focus on the development and application of implicit measures.

Adriaan Spruyt is Assistant Professor of Sustainable Consumption at the Faculty of Economics and Business Administration of Ghent University (Belgium). He is also a member of the Behavioral Economics for Life (BE4LIFE) research center and founded ImplicitMeasures.com, a spin-off company of Ghent University specialized in the development, validation, and (online) implementation of implicit measures. His research program centers upon the study of implicit processes and their relationship to (consumer) behavior.

Hester van Herk is Full Professor of Cross-cultural Marketing Research at Vrije Universiteit Amsterdam. Her main research interests are in the antecedents and consequences of human values on consumer behavior in developed and emerging markets and in research methodology providing insight into differences and similarities between survey responses from consumers in different nations and cultural groups. She has published on these subjects in journals such as the *Journal of Marketing Research, Marketing Science, International Journal of Research in Marketing, and Information Systems Research* and been awarded with the Lehmann Award and EMAC-IJRM Best Paper Award, among others. He currently serves on the Editorial Review Boards at the *International Journal of Research in Marketing* and the *Journal of Service Research*. 
ABOUT THE CONTRIBUTORS

Madhu Viswanathan (BTech, Mechanical Engineering, IIT, Madras, 1985; PhD, Marketing, University of Minnesota, 1990) is Professor of Marketing, College of Business Administration, Loyola Marymount University (2019–), and Professor Emeritus, University of Illinois, Urbana-Champaign (1990–2019). His research programs are on measurement and subsistence marketplaces. He has authored several books including Measurement Error and Research Design (Sage, 2005), Enabling Consumer and Entrepreneurial Literacy in Subsistence Marketplaces (Springer, 2008), Subsistence Marketplaces (2013), and Bottom-Up Enterprise (2016). He pioneered the area of subsistence marketplaces, taking a bottom-up approach to poverty and marketplaces (www.business.illinois.edu/subsistence), through symbiotic academic-social enterprise. He founded and directs the Marketplace Literacy Project (www.marketplaceliteracy.org), pioneering consumer, entrepreneurial, and sustainability literacy education that has reached more than 100,000 women across four continents. He has taught courses on research methods, subsistence, and sustainability to thousands of students in-person and on-line. He has created innovative curricular content for educators and learners relating to bottom-up immersion, design, innovation, and enterprise (https://cba.lmu.edu/smi/). He teaches Business For Good for all incoming undergraduate students. He is Founding Editor-In Chief, Subsistence Marketplaces – a journal and web portal (2021–). He has served on the Livelihoods Advisory Board of UNHCR. He served as Faculty Advisor for the online iMBA, University of Illinois (2015–2016), leading the team that launched the program, designing and implementing key curricular policies and innovations. He has served as Chair, Consumer Behavior Special Interest Group, American Marketing Association; Secretary-Treasurer, Society for Consumer Psychology; Associate Editor, Journal of Public Policy and Marketing; and Director of Graduate Studies, Business Administration, University of Illinois. His work has been recognized with numerous awards.

Bert Weijters is an Associate Professor of Market Research in the Department of Work, Organization, and Society at the Faculty of Psychology and Pedagogical Science, Ghent University, Belgium. His main research interests are in methodological research (with a focus on survey methods and measurement modeling) and consumer psychology (with a focus on environmentally sustainable consumption behavior). His work has been published in journals such as Psychological Methods, Organizational Research Methods, Journal of Business Ethics, Journal of Consumer Research, Journal of Marketing Research, International Journal of Research in Marketing, Journal of the Academy of Marketing Science, and Applied Psychological Measurement.
INTRODUCTION

OVERVIEW

*Review of Marketing Research*, now in its 19th volume, is a publication covering the important areas of marketing research with a more comprehensive state-of-the-art orientation. The chapters in this publication review the literature in a particular area, offer a critical commentary, develop an innovative framework, and discuss future developments, as well as present specific empirical studies. The first 18 volumes have featured some of the top researchers and scholars in our discipline who have reviewed an array of important topics. The response to the first 18 volumes has been truly gratifying and we look forward to the impact of the 19th volume with great anticipation.

PUBLICATION MISSION

The purpose of this series is to provide current, comprehensive, state-of-the-art articles in review of marketing research. Wide-ranging paradigmatic or theoretical, or substantive agendas are appropriate for this publication. This includes a wide range of theoretical perspectives, paradigms, data (qualitative, survey, experimental, ethnographic, secondary, etc.), and topics related to the study and explanation of marketing-related phenomenon. We reflect an eclectic mixture of theory, data, and research methods that is indicative of a publication driven by important theoretical and substantive problems. We seek studies that make important theoretical, substantive, empirical, methodological, measurement, and modeling contributions. Any topic that fits under the broad area of “marketing research” is relevant. In short, our mission is to publish the best reviews in the discipline.

Thus, this publication bridges the gap left by current marketing research publications. Current marketing research publications such as the *Journal of Marketing Research* (USA), *International Journal of Market Research* (UK), and *International Journal of Research in Marketing* (Europe) publish academic articles with a major constraint on the length. In contrast, *Review of Marketing Research* can publish much longer articles that are not only theoretically rigorous but also more expository, with a focus on implementing new marketing research concepts and procedures.

Articles in *Review of Marketing Research* should address the following issues:

- Critically review the existing literature
- Summarize what we know about the subject – key findings
- Present the main theories and frameworks
- Review and give an exposition of key methodologies
- Identify the gaps in literature
- Present empirical studies (for empirical papers only)
- Discuss emerging trends and issues
- Focus on international developments
- Suggest directions for future theory development and testing
- Recommend guidelines for implementing new procedures and concepts

## A FOCUS ON SPECIAL ISSUES

Since volume 8 published in 2011, *Review of Marketing Research* has a focus on special issues realizing that this is one of the best ways to impact marketing scholarship in a specific area. The volume editors of all of the special issues have been top scholars. These special issues have focused on the following topics.

<table>
<thead>
<tr>
<th>Volume, Year</th>
<th>Topic</th>
<th>Volume Editors</th>
</tr>
</thead>
<tbody>
<tr>
<td>8, 2011</td>
<td>Marketing Legends</td>
<td>Naresh K. Malhotra</td>
</tr>
<tr>
<td>9, 2012</td>
<td>Toward a Better Understanding of the Role of Value in Markets and Marketing</td>
<td>Stephen L. Vargo and Robert F. Lusch</td>
</tr>
<tr>
<td>10, 2013</td>
<td>Regular Volume</td>
<td>Naresh K. Malhotra</td>
</tr>
<tr>
<td>11, 2014</td>
<td>Shopper Marketing and the Role of In-Store Marketing</td>
<td>Dhruv Grewal, Anne L. Roggeveen, and Jens Nordfält</td>
</tr>
<tr>
<td>12, 2015</td>
<td>Brand Meaning Management</td>
<td>Deborah J. Macinnis and C. Whan Park</td>
</tr>
<tr>
<td>13, 2016</td>
<td>Marketing in and for a Sustainable Society</td>
<td>Naresh K. Malhotra</td>
</tr>
<tr>
<td>14, 2017</td>
<td>Qualitative Consumer Research</td>
<td>Russell W. Belk</td>
</tr>
<tr>
<td>15, 2018</td>
<td>Innovation and Strategy</td>
<td>Rajan Varadarajan and Satish Jayachandran</td>
</tr>
<tr>
<td>16, 2019</td>
<td>Marketing in a Digital World</td>
<td>Aric Rindfleisch and Alan J. Malter</td>
</tr>
<tr>
<td>17, 2020</td>
<td>Continuing to Broaden the Marketing Concept: Making the World a Better Place</td>
<td>Dawn Iacobucci</td>
</tr>
<tr>
<td>18, 2021</td>
<td>Marketing Accountability for Marketing and Non-marketing Outcomes</td>
<td>V. Kumar and David W. Stewart</td>
</tr>
<tr>
<td>19, 2022</td>
<td>Measurement in Marketing</td>
<td>Hans Baumgartner and Bert Weijters</td>
</tr>
</tbody>
</table>
This special issue focuses on measurement in marketing. In the recent years, significant advances have been made in measurement, particularly in terms of theoretically conceptualizing the constructs, collecting data to empirically examine the measures, and formulating appropriate measurement models to establish their psychometric properties. The chapters in this volume represent an eclectic mix of measurement issues and methodological approaches to address them.

Bagozzi (2022) develops the philosophical foundation for hylomorphic structures and show how they are rooted in dispositions and dispositional causality; he also examines the various mind–body trade-offs. In contrast to simple concepts, complex concepts, when expressed in hylomorphic structures, achieve unique ontological status and serve particular explanatory capabilities. Bagozzi offers the first exposition of the underlying philosophical foundations of hylomorphic frameworks in marketing and consumer research and shows that hylomorphic structure can be used to represent independent, dependent, mediating, and moderating variables. As marketing scholars come to appreciate the usefulness of complex concepts, we should see more applications in the years ahead.

Measurement in marketing and the social sciences commonly assumes that a set of observed variables is a function of an underlying common factor plus some error. Rigdon and Sarstedt (2022) question several of the assumptions in this approach. They argue that (1) the common factor model is seldom correct in the population, (2) the common factor generally does not correspond to the quantity the researcher intends to measure, and (3) the measurement error does not fully capture the uncertainty associated with measurement. The norm in the physical sciences is to adapt an uncertainty-centric approach to measurement, and that approach can largely address the limitations of current measurement practice in marketing.

Measurement error is pervasive in research design; Viswanathan (2022) examines the components and sources of this error. He stresses the importance of understanding the different types of measurement error, the sources of these different types, the effects of such error on response patterns, and measurement indicators, and how they manifest in results or findings. He presents insights on how items, measures, and methods can be designed before-the-fact to reduce measurement error. While developing the research design, the path from the conceptual to the operational has to be traveled carefully to reduce measurement error. Researchers would do well to follow the recommendations of Viswanathan.

The need to consider measurement invariance testing in cross-cultural research is well established, and van Herk and Goldman (2022) provide a bibliometric analysis of articles on cross-cultural and cross-national topics in marketing. They code cross-cultural articles in the period 1999–2020 to assess whether researchers follow the recommended steps as outlined in the multigroup confirmatory factor analysis approach. Their results show that most studies find partial invariance: some items are not comparable across the cultural groups studied. Researchers
often ignore noninvariant items, which may decrease the validity of cross-cultural comparisons made. They also analyze the dissemination of measurement invariance in the broader literature based on cocitations with Steenkamp and Baumgartner (1998). They note methodological developments in cross-cultural research to enable addressing noninvariance and provide suggestions to further advance insight into cross-cultural differences and similarities.

Careless respondents who do not answer survey questions accurately can significantly distort the findings of survey research. In an insightful article, Baumgartner and Bert Weijters (2022) review the measures of careless responding that have been suggested in the literature. They offer a classification of existing measures of careless responding along two dimensions and discuss their relative strengths and weaknesses. Their conceptual framework is demonstrated by an empirical study that also shows how these measures are related to each other.

Scales for measuring marketing constructs have traditionally been developed using the classical test theory paradigm or its variant. This paradigm typically assumes that items and respondents are the only sources of variance and respondents are the objects of measurement. Yet, several applications in marketing require scaling of objects, rather than respondents, such as firms, products, brands, retail stores, etc. Drawing upon their earlier work (Finn & Kayande, 2005), these authors show that a multivariate multiple objective random effects methodology (M-MORE) could be used to identify construct dimensionality and select appropriate items for multiple objects of measurement. Finn and Kayande (2022) apply M-MORE to multivariate generalizability theory data collected to assess online retailer websites to identify the dimensionality of, and to select appropriate items for scaling website quality. They compare their results with those produced by traditional methods. They found that the scale developed by the M-MORE approach has better criterion validity than the traditional scale when scaling websites, thus demonstrating the value added by the M-MORE approach.

A significant part of what and how consumers feel, think, and behave is determined by automatic (or "implicit") cognitive processes and measurement procedures specifically designed to tap into these automatic cognitive processes are referred to as implicit measures. Along with a proliferation of implicit measures over the last two decades, the understanding of the mechanisms as well as the conditions under which these mechanisms operate has been changing. Thus, it can be challenging for marketing researchers to select the implicit measure best suited for a particular situation. Slabbinck and Spruyt (2022) review the pertinent literature and develop a utilitarian taxonomy that has the potential to facilitate the selection of the appropriate implicit measures.

Together these chapters lead to new insights, approaches, and directions for research on various aspects of measurement in marketing. It is hoped that collectively the chapters in this volume will substantially aid our efforts to theoretically conceptualize the constructs, collect data to empirically examine the measures, and formulate appropriate measurement models to establish their psychometric properties and to provide a broader arsenal of research methods as well as fertile areas for future research. I thank Hans Baumgartner and Bert
Wejters for such an outstanding volume. The *Review of Marketing Research* continues its mission of systematically analyzing and presenting accumulated knowledge in the field of marketing as well as influencing future research by identifying areas that merit the attention of researchers.

Naresh K. Malhotra, *Editor-in-Chief*