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Wenjing Shen

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Book Reviews

Wenjing Shen

Department of Decision Sciences and MIS, LeBow College of Business, Drexel University, Philadelphia, Pennsylvania 19104,
wenjings@drexel.edu

In *Book Reviews*, we review an extensive and diverse range of books. They cover theory and applications in operations research, statistics, management science, econometrics, mathematics, computers, and information systems. In addition, we include books in other fields that emphasize technical applications. The editor will be pleased to receive an email from those willing to review a book, with an indication of specific areas of interest. If you are aware of a specific book that you would like to review, or that you think should be reviewed, please contact the editor.

The following books are reviewed in this issue of *Interfaces*, 46(3), May–June 2016: *Inequality: What Can Be Done?*, Anthony B. Atkinson; and *R for Marketing Research and Analytics*, Chris Chapman and Elea McDonnell Feit.

ATKINSON, ANTHONY B. 2015. *Inequality: What Can Be Done?* Harvard University Press. 384 pp. \$29.95.

Since the publication of Thomas Piketty's *Capital in the Twenty-First Century*, the subject of economic inequality has aroused the interest of academics, politicians, and laypersons in a way that would have been unthinkable even a few years ago. Sir Anthony Atkinson, a prominent British economist and an erstwhile mentor to Piketty, has now entered the fray with his own tome on inequality. The spirit of Atkinson's suggestions are broadly similar to those made by Piketty in his book; however, Atkinson's book is less dense, more concise, and hence easier to peruse. The primary purpose of his book is to "set out concrete policy proposals that could...bring about a genuine shift in the distribution of income towards less inequality" (p. 1).

To this end, the author uses the three parts of the book to diagnose the inequality problem, then present 15 proposals for action, and finally discuss whether these proposals can be implemented in a meaningful manner. Here, rather than provide a tedious chapter-by-chapter review, I sample eclectically from the book's contents. This should provide the reader with an adequate flavor of the book's intellectual contributions.

Atkinson begins by rightly noting that inequality of outcome among today's generation is the source of the unfair advantage that the next generation is receiving. He proceeds to develop this point by demonstrating that in the immediate aftermath of World War II,

the welfare state in the United States and in many European nations "was ahead in the race to keep up with widening inequality of market outcomes, but since the 1980s it has failed to do so—often as a result of explicit policy decisions to cut back on benefits and on coverage" (pp. 67–68). Atkinson calls this switch, which occurred around 1980, the "inequality turn." Although the author's discussion here is clear, I cannot say the same about his endorsement of the view that it is "morally repugnant" (p. 10) to ask, before providing aid to an individual, about the circumstances that led him (her) to fall on hard times.

In his discussion of market outcomes, Atkinson emphasizes that these outcomes are typically not the outcome of exogenous forces over which societies have no control. In particular, a diminution in market-income inequality is not only possible, but also desirable. This perspective leads the author to develop two related points. First, he tells us that we need to study the broader social context in which markets function. Second, he suggests that we need to recognize "the locus of decision-making as it affects the incomes and lives of individuals, as well as the balance of power—between individuals and between groups in society" (p. 110).

In the second and meatiest part of the book, Atkinson develops detailed arguments in support of 15 proposals that he believes will go a long way in reducing income inequality in various nations by (broadly speaking)

redistributing income and resources from the “haves” to the “have nots” of the world. Some of these proposals include fairly standard ideas that one would expect from an egalitarian scholar. Examples include a call for the government to adopt an explicit target for preventing and diminishing unemployment (Proposal 3), a suggestion for the government to institute a national pay policy (Proposal 4), and a call for the governments of rich countries to provide one percent of their gross national income as official development assistance (Proposal 15). The discussion of Proposal 15 is vigorous; however, it would have been more plausible had the author paid attention to some of William Easterly’s recent dissenting work on foreign aid.

Some of Atkinson’s other proposals are both unusual and thought provoking. For example, in Proposal 1, he asks policy makers to pay careful attention to the direction of technical change so that innovation that encourages the employability of workers is encouraged. In Proposal 2, the author suggests that public policy in general should focus on the attainment of an appropriate balance of power among stakeholders so that an explicit distributional aspect to competition policy exists. Although these ideas are certainly interesting, Atkinson pays insufficient attention to the specifics of their execution. In addition, any realistic chance of their being implemented in either the United States or even in Western Europe is not clear.

First, are the 15 proposals put forth by the author too costly to implement from the standpoint of economic efficiency? Second, can these proposals be meaningfully implemented by a single nation operating in a global economy? The third and last part of this book addresses these two salient questions. As far as the first question is concerned, Atkinson acknowledges that some of his proposals may have “negative effects on the size of the cake—that cannot be ruled out” (p. 262). This notwithstanding, he contends that even from an efficiency perspective, his proposals deserve serious attention. With regard to the second question, the author admits that operating in a global economy does constrain the actions that national governments can take. Even so, he emphasizes that the “primary locus of policy-making remains national governments, and whether we move in the future towards less inequality is very much under the control of national policy-makers” (p. 280).

Let me conclude this review with the following five observations. First, although this book includes occasional mentions of other nations, its geographical coverage is narrow because it focuses primarily on inequality in the United States and the United Kingdom. Second, although redistribution is a fine idea, in the poor nations of the world, first creating wealth, which can then be redistributed—possibly by adopting one or more of Atkinson’s 15 proposals—is essential. This point receives barely any attention in the book. Third, one can credibly claim that the disadvantaged in the United States and United Kingdom are still better off than the disadvantaged in the poor nations of the world and that the inequality problem is most acute in these poor nations; however, as I note earlier, Atkinson pays almost no attention to inequality in the impoverished nations of the world. Fourth, even if we limit our attention to inequality in the United States and United Kingdom, it is not clear at all that voters in these two nations are particularly interested in adopting proposals of the sort espoused by Atkinson. In the 2015 U.K. election, the more redistribution-minded Labour Party was soundly beaten by the much less redistribution-minded Tories. Finally, the preceding four observations notwithstanding, this is a serious and engrossing book written by an economist who is arguably the doyen of British researchers on economic inequality. Therefore, the book deserves careful reading.

Amitrajeet A. Batabyal

Department of Economics, Rochester Institute of Technology,
Rochester, New York 14623-5604, aabgsh@rit.edu

CHAPMAN, CHRIS, ELEA McDONNELL FEIT. 2015. *R for Marketing Research and Analytics*. Springer. 454 pp. \$64.99.

R for Marketing Research and Analytics is a clearly written, well-organized, comprehensive, and readable guide to using *R*, the open-source programming language, for marketing research and analytics. It covers both classical frequentist and Bayesian methods, and a reader can also use it to learn about specific statistical methods. It is designed to facilitate the hands-on learning of *R* by allowing the reader to work through the *R* code provided and by including an in-depth discussion of examples in each chapter. Learning *R* is integrated into the examples, which apply statistical methods to answering marketing questions.

The authors have substantial experience in the practice and teaching of *R*, marketing research, and analytics. They have written this book using a minimum amount of mathematics and in a style that is more conversational and tutorial than a standard textbook. They have also structured the book so that the reader can examine the material at several levels, ranging from beginner to advanced levels. More advanced topics are marked with an asterisk to indicate that the reader can skip them on an initial reading. In addition, a *Learning More* section at the end of each chapter points to related methods and analyses, additional *R* packages, and references.

The book covers an impressively wide range of statistical models, and its practice-oriented explanations for analyses are exceptionally clear. The examples are structured to progressively build a model through a series of analyses and visualizations to give readers additional insights, as they would receive in practice. It can also provide an introduction to a specific topic. For example, it introduces hierarchical Bayes choice models in the *Choice Modeling* chapter.

Each example covers the marketing questions to be answered, data handling, setting up of the analyses in *R*, and formatting the data and model to accommodate the requirements of the *R* packages used. *R* code is shown in gray-shaded boxes in groups of a few lines; an explanation of the code functionality is included. Each chapter uses a simulated dataset for the marketing application discussed; simulated consumer segment data for constructing a structural equation model of repeat purchases is an example.

For analyses, the discussion of the code, model, and results covers assumptions of the model, issues of potential concern or interest, and interpretations of results, including using visualizations to detect issues with the data or analyses. An important objective of the book's examples is to help the reader develop intuition. Is the model reasonable? Do the results make real-world sense? Each chapter ends with a list of key points. For example, a practical key point listed for choice models is that nonexperts will more easily understand the results presented as share predictions than they will understand parameter estimates.

The book has three parts. Part I, *Basics of R*, provides an overview of *R*. It begins with a balanced discussion of what *R* is and how it might best be used. It covers

the basics of *R* programming, and is written so that even new programmers can effectively use the hands-on examples provided. Part I also has a section on *R*'s built-in help files, and introduces information on specific functions, commands, and packages in the context of the examples in Parts II and III.

Part II, *Fundamentals of Data Analysis*, covers data handling in *R* and the creation of simulated data, which can be used to develop and test models. Its chapters cover describing data and exploring relationships between continuous variables (with simulated retailer data as an example) via scatterplots, correlations, and data transformations. A consumer-segment data example discusses the creation of tables, visualizations, and statistical tests for comparing groups.

Part III, *Advanced Marketing Applications*, covers an impressively broad range of methods. It includes a chapter on reducing data complexity (e.g., principal component analysis, exploratory factor analysis, and multidimensional scaling); advanced linear models (e.g., logistic regression and hierarchical linear models); confirmatory factor analysis and structural equation modelling; segmentation; association rules for market basket analysis; and choice models.

R is free and is used widely, and its users have created and shared thousands of publicly available *R* packages. For many readers—even for those who know *R* and have marketing research and analytics experience—this book can be a valuable resource for information on it. The appendices provide a list of *R* packages (including packages that more efficiently handle data), and information on handling datasets too large to fit in memory, improving computational speed, and automated reporting. They also provide tips, a list of resources, and a discussion of several topics important for practical applications, and for open-source programs, including scalability.

The book is densely packed with text and information; however, the subsections are generally short, one or two pages, with descriptive titles that break the material into readable sections. In addition, the font sizes on some graphics are small and italics are used for key concepts, emphasis, and variable names. For a next edition, therefore, I suggest increasing the font size of these graphics (without overpowering the visual message) to improve the visual ease of reading, and

using a bold font for the first appearance of key concepts to immediately flag them as important; thus, the reader can easily refer to them later. A more detailed index also would be useful, especially for the print version. As a reviewer, I often use the digital version of a book to locate a concept or definition I have seen in the print version.

R for Marketing Research and Analytics could be used as a reference by marketing researchers and analysts, by engineering and business practitioners who wish

to learn more about the analyses of customer and marketing data, and by colleagues who are not familiar with particular applications or methods. It could also be useful as a supplement or additional reference for a statistical methods course as a way to incorporate more hands-on, applied learning with data.

R. Jean Ruth

Chair of the Public Awareness Committee, INFORMS, General Motors Research and Development, retired. Beverly Hills, Michigan 48025, rjean.ruth@comcast.net