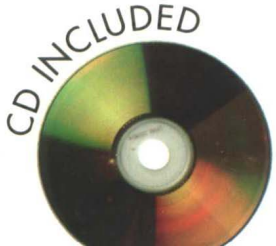
fourth edition

COMPLETE BUSINESS STATISTICS



Amir D. Aczel

Complete Business Statistics

FOURTH EDITION

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COMPLETE BUSINESS STATISTICS

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PREFACE

The fourth edition of *Complete Business Statistics* features exciting new improvements to both the text and supplements package. These improvements have been driven largely by requests from adopters of the previous editions of this widely used textbook, as well as by new challenges brought about by changing technology, trends in the teaching of statistics in business schools, and global trends of business as we approach the twenty-first century.

All important subjects within business statistics have been retained and emphasized in new light for this edition to reflect the evolution of business practices. Topics that are not widely taught at business schools have been abridged, and some statistical methods with less-than-universal applicability in today's business world have been deleted. Among the few topics no longer covered in the book are the most esoteric nonparametric methods and some of the Bayesian techniques, although the decision analysis topics have been retained. In making the decision to delete these topics from the book, I was guided largely by suggestions from both users and nonuser reviewers, whose opinions, I believe, reflect the current thinking on the state of statistical education as it is taught in today's schools of business.

By eliminating some arcane topics, I was able to include more material that reflects important new developments in the field—without adding to the length of the text. Hence, this textbook remains true to its name in that it continues to offer "complete" coverage in the fullest sense of the word—without becoming cumbersome or unwieldy.

The expansion of material in this fourth edition is in three very important areas, and a description of each follows:

1. The book has become more global in its approach, even though it has always been at the vanguard of international issues in business. The economies of countries around the world are becoming increasingly intertwined. Events in Asia have direct impact on Wall Street, and the Russian economy's move toward capitalism has immediate effects on Europe as well as the United States. The publishing industry, in which large international conglomerates have acquired entire companies; the financial industry, in which stocks are now traded around the clock at markets all over the world; and the retail industry, which now offers consumer products that have been manufactured at a multitude of different locations throughout the world, all testify to the ubiquitous globalization of the world economy. A large proportion of the problems and examples in this new edition are international in their nature. I hope that instructors will welcome this innovation, as it reflects the new context of almost all business issues.
2. This edition features an integrated approach to using Microsoft Excel in the solution of business problems. Many instructors, including the author, have spent years teaching business statistics using MINITAB and other statistically-specific computing packages. While the importance of these computer packages is not diminished, and while applications in the text using MINITAB have not been removed or changed, we attempt in this edition to stay abreast of statistical computing in today's business world. Today an overwhelming majority of managers and other practitioners in business have immediate access to Excel as soon as they turn on their personal computers. In keeping with this reality, it is important to teach business statistics students to use Excel (an almost universally available technology), while continuing to cover and use MINITAB, SPSS, SAS, and the many other fine products available on the market that perform, with admirable accuracy and efficiency, statistical analyses of increasing complexity. Our increased emphasis on Excel in this fourth edition of *Complete Business*

Statistics is simply a response to the realities of the business community and the worldwide computing environment. Every effort has been made to include the widest possible array of applications where the Excel package has statistical capabilities. This edition includes 70 screen captures from the Excel package. Remaining applications employ one of the other major computing packages—MINITAB, SPSS, SAS—as in previous editions.

3. In this new edition we include several World Wide Web exercises. As we have increased usage of Excel, here again the realities of the marketplace and business practices worldwide dictate that we include tools that reflect available technology. In addition to the Web's wide availability to virtually everyone in the world of statistics, the Web carries an even greater weight, because the Internet and the World Wide Web are an unparalleled source of all kinds of data. The Web makes data sets of almost any size accessible immediately on a personal computer, and this trend will clearly increase. In the future large data sets will travel almost exclusively through the Internet. In keeping with these trends, it is important that every business statistics student makes effective use of the World Wide Web to gather data and to view statistical analyses carried out by others.

Many people have contributed greatly to the development of this fourth edition, and I am grateful to all of them. They are:

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I would also like to thank the authors of the supplements that have been developed to accompany the text. Lou Patille, University of Phoenix, updated the Instructor's Manual and the Student Problem Solving Guide. Jeff Jung, University of Phoenix, updated the Test Bank. Lloyd Jaisingh, Morehead State University, created data files and updated the PowerPoint Presentation Software. Jayavel Sounderpandian, University of Wisconsin —Parkside, revised the Excel Templates and workbook. Don Robinson, Illinois State University, provided an accuracy check of the page proofs.

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—Amir D. Aczel

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