SIXTH EDITION

Basic Statistics for Business & Economics

Douglas A. Lind · William G. Marchal · Samuel A. Wathen

Basic Statistics for
Business & Economics

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Business & Economics

Sixth Edition

Douglas A. Lind
Coastal Carolina University and The University of Toledo

William G. Marchal
The University of Toledo

Samuel A. Wathen
Coastal Carolina University

McGraw Hill

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To Jane, my wife and best friend, and our sons, their wives, and our grandchildren: Mike and Sue (Steve and Courtney), Steve and Kathryn (Kennedy), and Mark and Sarah (Jared, Drew, and Nate).

Douglas A. Lind

To our family, especially the most recent additions, Tascha and Stephen.

William G. Marchal

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Samuel A. Wathen

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The objective of *Basic Statistics for Business and Economics* is to provide students majoring in management, marketing, finance, accounting, economics, and other fields of business administration with an introductory survey of the many applications of descriptive and inferential statistics. While we focus on business applications, we also use many problems and examples that are student oriented and do not require previous courses.

Statistical Techniques in Business and Economics was published in 1967. The first edition of *Basic Statistics for Business and Economics* was published in 1994. For earlier editions of both texts, locating relevant business data was difficult. That has changed! Today locating data is not a problem. The number of items you purchase at the grocery store is automatically recorded at the checkout counter. Phone companies track the time of our calls, the length of calls, and the number of the person called. Credit card companies maintain information on the number, time and date, and amount of our purchases. Costco can tell you the total amount of your purchases last year by item and by dates. Medical devices automatically monitor our heart rate, blood pressure, and temperature. A large amount of business information is recorded and reported almost instantly. CNN, *USA Today,* and MSNBC, for example, all have websites where you can track stock prices with a delay of less than twenty minutes.

Today, skills are needed to deal with a large volume of numerical information. First, we need to be critical consumers of information presented by others. Second, we need to be able to reduce large amounts of information into a concise and meaningful form to enable us to make effective interpretations, judgments, and decisions.

All students have calculators and most have either personal computers or access to personal computers in a campus lab. Statistical software, such as Microsoft Excel and MINITAB, is available on these computers. The commands necessary to achieve the software results are available in a special section at the end of each chapter. We use screen captures within the chapters, so the student becomes familiar with the nature of the software output. Because of the availability of computers and software it is no longer necessary to dwell on calculations. We have replaced many of the calculation examples with interpretative ones, to assist the student in understanding and interpreting the statistical results. In addition we now place more emphasis on the conceptual nature of the statistical topics. While making these changes, we still continue to present, as best we can, the key concepts, along with supporting examples.

The sixth edition of *Basic Statistics for Business and Economics* is the product of many people: students, colleagues, reviewers, and the staff at McGraw-Hill/Irwin. We thank them all.

Ed Pappanastos of Troy University has been a reviewer on our texts for several editions and has been a principle participant in the design and testing of Homework Manager and Homework Manager Plus applications for both books. We are sincerely grateful to reviewers whose valuable suggestions guided us on every revision decision. We hope you will be pleased with the final product.

Larry Ammann
University of Texas, Dallas
Doug Barrett
University of North Alabama
Doris Bennett
Jacksonville State University

Bongsik Shin
San Diego State University
Derek Burnett
Loras College
Susan Carter
Doane College

Gary Cummings
Walsh College

Joe Easton
Pueblo Community College

Ronald Elkins
Central Washington University

Mary Gray
American University

Don Gren
Salt Lake Community College

M. Ryan Haley
University of Wisconsin, Oshkosh

Janice Harder
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Mihail Motzev
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Pin Ng
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California State University, Long Beach

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Murali Shanker
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Slippery Rock University

Kathleen Whitcomb
University of South Carolina

Blake Whitten
University of Iowa

Bill Younkin
University of Miami

Xiaolong (Jonathan) Zhang
Georgia Southern University

Zhiwei (Henry) Zhu
University of Louisiana

Their suggestions and thorough review of the previous edition and the manuscript of this edition make this a better text.