

Preface

About *Introductory Business Statistics*

Introductory Business Statistics is designed to meet the scope and sequence requirements of the one-semester statistics course for business, economics, and related majors. Core statistical concepts and skills have been augmented with practical business examples, scenarios, and exercises. The result is a meaningful understanding of the discipline which will serve students in their business careers and real-world experiences.

Coverage and scope

Introductory Business Statistics began as a customized version of OpenStax *Introductory Statistics* by Barbara Illowsky and Susan Dean. Statistics faculty at The University of Oklahoma have used the business statistics adaptation for several years, and the author has continually refined it based on student success and faculty feedback.

The book is structured in a similar manner to most traditional statistics textbooks. The most significant topical changes occur in the latter chapters on regression analysis. Discrete probability density functions have been reordered to provide a logical progression from simple counting formulas to more complex continuous distributions. Many additional homework assignments have been added, as well as new, more mathematical examples.

Introductory Business Statistics places a significant emphasis on the development and practical application of formulas so that students have a deeper understanding of their interpretation and application of data. To achieve this unique approach, the author included a wealth of additional material and purposely de-emphasized the use of the scientific calculator. Specific changes regarding formula use include:

- Expanded discussions of the combinatorial formulas, factorials, and sigma notation
- Adjustments to explanations of the acceptance/rejection rule for hypothesis testing, as well as a focus on terminology regarding confidence intervals
- Deep reliance on statistical tables for the process of finding probabilities (which would not be required if probabilities relied on scientific calculators)
- Continual and emphasized links to the Central Limit Theorem throughout the book; *Introductory Business Statistics* consistently links each test statistic back to this fundamental theorem in inferential statistics

Another fundamental focus of the book is the link between statistical inference and the scientific method. Business and economics models are fundamentally grounded in assumed relationships of cause and effect. They are developed to both test hypotheses and to predict from such models. This comes from the belief that statistics is the gatekeeper that allows some theories to remain and others to be cast aside for a new perspective of the world around us. This philosophical view is presented in detail throughout and informs the method of presenting the regression model, in particular.

The correlation and regression chapter includes confidence intervals for predictions, alternative mathematical forms to allow for testing categorical variables, and the presentation of the multiple regression model.

Pedagogical features

- **Examples** are placed strategically throughout the text to show students the step-by-step process of interpreting and solving statistical problems. To keep the text relevant for students, the examples are drawn from a broad spectrum of practical topics; these include examples about college life and learning, health and medicine, retail and business, and sports and entertainment.
- **Practice, Homework, and Bringing It Together** give the students problems at various degrees of difficulty while also including real-world scenarios to engage students.

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