MINITAB Guide

Data Analysis using MINITAB Statistical Software: Basic and Advanced Analyses using MINITAB®

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OUTLINE

Objectives and Overview
MINITAB Statistical Software: An Overview
Worksheet (Data Window)
Session Window
History Window
Analyzing Your Data
Graphing Your Data: Scale, Labels, Data View, Multiple Graphs, Data Options
Printing and Saving Your Work
Command Sequence Used In This Text
Preparing Your Report
Changing data from Numeric to Text or Text to Numeric
Editing Your Graphs and Plots
An Interactive Session with MINITAB

Content:

Learn the Six Sigma and Quality Applications using this book. The book contains examples with step-wise instructions on:

Graphical and Visual Techniques
Quality Tools_ Seven Basic Tools and New Tools
Cause-and-effect Diagrams, Multi-vari Charts and others
Calculating Descriptive Statistics and Graphical Summary of Data
Calculating distributions
Confidence intervals
Performing hypothesis tests
Simple and multiple regression analysis and modeling
Nonparametric tests

ANOVA and Design of Experiment tools

OBJECTIVES AND OVERVIEW

One of the major objectives of this text is to teach the statistical tools used in the Six Sigma DMAIC (Define, Measure, Analyze, Improve, and Control) process. The chapters in this book provide concepts, understanding, and computer applications of Six Sigma DMAIC tools. The statistical tools within the DMAIC process are discussed with step-wise MINITAB computer applications.

All of the analyses and procedures in this book use the MINITAB Windows version (release 16). You may also use MINITAB 15 as most of the instructions for release 16 are still valid for MINITAB 15. Step wise instructions for conducting data analyses are described in detail. Each chapter contains a number of applications with instructions on how to create data files, perform analyses, and interpret results.

If you have never used the MINITAB software, we provide an overview in this chapter that will help you with the basics to get started. We also provide tips on how to access the help screens. Once you understand the basic operations of the software, you should be able to perform useful analyses presented in this text. All of the analysis procedures are clearly explained with stepwise instructions.

The applications in this book cover most of the statistical tools used in Six Sigma. Our aim is to provide you with additional insights. Performing the analyses in this text will help you to understand the concepts better, and you should be able to apply the right tool to solve specific problems. You will also realize the power of the computer in solving both simple and complex problems. Needless to say, the analyses in this text will provide you with hands-on experience using the computer. We believe this to be a valuable experience that will help you in your professional life.

Finally, it is our belief that some of the difficult concepts of quality, statistics and probability can be more easily understood through experimentation; and, the computer as a tool adds a dynamic dimension to the conventional experience.