

## Volume II Summary

Volume II is intended to complement Volume I, “Principles and Processes to Transportation Research.” Volume II consists of six chapters and four appendices. Chapter One helps the researcher to identify the empirical setting for which his or her research is being carried out.

Chapter Two focuses on data management techniques appropriate for the size of the data and the objective of an analysis. In this chapter the concept of a data management plan is presented and described.

Chapters Three enables the researcher to select the appropriate analysis techniques. Asking and answering questions about the type of research and the type of data that the analyze wishes to understand drive selection of a statistical method.

Chapters Four through Six present details of numerous statistical analysis techniques, broken down into Continuous Dependent Variables Models (Chapter Four), Discrete Dependent Variables Models (Chapter Five), and Nonparametric Methods (Chapter Six).

Several appendices provide extremely useful information for conducting research, such as a comprehensive Glossary of Statistical and Research Related Terms (Appendix A), Useful Transformations (Appendix B), common tables of probabilities associated with statistical distributions (Appendix C); and numerous listings of useful statistical, research, and other references listed alphabetically and by topic (Appendix D).

The following principles guide presentation of the material in Volume II:

- 1) Simple flow charts and/or flow diagrams guide users through identification of correct analytical method(s) for a particular research effort, taking into consideration both the management and analysis of data,
- 2) A general understanding of basic statistical assumptions and essential operational aspects of descriptive and prescriptive statistical methods are provided,
- 3) Simple examples are employed to illustrate correct applications and interpretations of data analysis and modeling,
- 4) Output from software packages are used to demonstrate some analysis methods; however, most are performed with simple statistical packages,
- 5) A large number of references to WWW sites, manuals, textbooks, and technical papers and reports providing detailed insight into the statistical methods are provided.

The level of detail provided in the manual is sufficient for researchers and research managers to correctly select, apply, and interpret a variety of statistical techniques. For the vast majority of scientific investigations, the manual will provide the direction and guidance necessary to select and begin applying statistical modeling techniques. However, it cannot possibly contain sufficient detail to cover all the complexities of specific modeling approaches, experimental designs, and data management issues—and in these instances, supplemental references are identified.

## Roadmap to Volume 2



