Book Review

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Jeremy Dawson. *Analysing Quantitative Survey Data*, 2017; Sage Publications Ltd. ISBN 978-1-4739-0751-5, 88 pp, USD 40.

This book targets non-experts conducting a survey and subsequent analysis for the first time. It is part of a larger series of books called *Mastering Business Research Methods*. This series is for Master's level students doing research for a dissertation in the business and management disciplines. The focus of this edition is primarily on reliability and validity of survey items under the framework of classical test theory. The examples in the book are given using primarily SPSS software. I found this edition easy to understand and apply for someone new to surveys.

The first chapter "An Introduction to Classical Test Theory and Quantitative Survey Data" gives a motivation for using surveys due to their flexibility with types of data collected. Six different types of questionnaire data are identified, grouped into categorical and numeric major types, in addition to a discussion of Likert-scale data. Classical test theory is introduced along with the assumptions surrounding it. This provides a more formal outline to the later discussion of reliability and validity testing. The author classifies three types of analysis using survey data: data tidying (including reliability and validity checks), descriptive analysis, and inference.

The second chapter approaches the framing of the concepts of reliability and validity with reference to classical test theory. The author lays out the philosophical underpinnings of positivism and interpretivism. Positivism is a philosophy holding that every rationally justifiable assertion can be scientifically verified or is capable of logical or mathematical proof. Interpretivism is a counter to positivism, claiming that the social realm requires a different epistemology for study. The author describes how interpretivism is appropriate for survey topics since the meaning of the questions depends on the respondents' understanding of it. This is a nice contrast between the social science and natural science philosophical platforms. The remainder of this chapter covers many examples of the types and aspects of validity and reliability analysis, hitting on many common sources of survey error. The chapter concludes with a discussion of the advantages of using multi-item scales.

Chapter 3 discusses steps that an analyst will need to go through to get multi-item scale variables ready for analysis. A nice flow-chart of the steps for analysis is shown to illustrate. The author provides detailed examples and tips for how to enter, code, and do basic summary statistics for survey data in SPSS. These will be especially helpful to a new

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practitioner of survey analysis. Factor analysis is introduced as a tool for establishing the validity of multi-item scales. Exploratory and confirmatory factor analysis are explained and a decision process is given to help determine how to properly use each. How to create 'scale-scores' using SPSS is then displayed and the chapter closes with a table of standard statistical tests for examining relationships within survey data.

The real depth necessary for a practitioner to apply validity and reliability analysis are provided in Chapter 4. The instructions and recommendations Dawson provides are geared towards management students using Likert scale data. Issues such as extracting factors, determining the number of factors, which variables should be excluded, and factor interpretation are covered using SPSS output for exploratory factor analysis. It is mentioned that confirmatory factor analysis is a special case of structural equation modeling and is not covered in SPSS. Several options are listed and the examples are shown using the software Amos. Useful diagrams and screenshots are provided to help the user construct and interpret the models. Finally, basic techniques for reliability analysis using SPSS are displayed.

Chapter 5 walks through three case study examples to illustrate the use of the techniques laid out in the previous chapter. The first case study looks at perception of job role and its impact on employee performance as an example of exploratory factor analysis. The second example describes a study that uses confirmatory factor analysis to validate the existence of five levels of affective well-being. The author cites a paper showing two studies where reliability analysis is used to examine factors regarding attitudes towards affirmative action. This chapter provides a good structure for how these methods can be incorporated into a study to help answer a wider set of questions.

Chapter 6 examines the role and assumptions of each method outlined when analyzing quantitative survey data. The author attempts to assess other options compared to classical test theory. Opinions on reliability and a comparison of principal component analysis versus factor analysis are also provided. A helpful table is given weighing the positives and negatives of different software options for performing confirmatory factor analysis. Since this book does not cover the theory or background to the methods used, this is a helpful perspective to give first-time users so that they might know of some limitations and alternatives.

This book covers what the author calls data tidying and focuses primarily on methods of assessing reliability and validity under the classical test theory framework. The title suggests a broader scope than the book covers. Perhaps a title hinting at data tidying would have been more appropriate. The nature of the text is quite hands-on with many tips and examples for beginners but a more advanced survey practitioner will require additional resources. Although simple in scope, Dawson provides a valuable resource to his target audience of Master students using survey data for the first time.