
Library Improvement through Data Analytics, by Lesley S. J. Farmer and Alan M. Safer, Chicago: ALA Neal-Schuman, 2016. 184p. \$75. ISBN: 978-0-8389-1425-0.

Data-driven decision making has become a common practice in most industries. During the last 20 years, with the advance of the Internet and the digital age, data has played an increasingly important role in people's work and life. Now more than ever, data can easily be collected and shared. More than ever, we have the computing capacity that can treat and analyze a large amount of data. Pure data is useless without treatment and analysis. Data analytics and data science are critical to turn data into knowledge.

In the library field, more and more librarians and library administrators are trying to take advantage of this data deluge to improve library services or to provide new services to their users and community, based on data and data analytics. In the last five to ten years there have been many published articles and books that deal with library data analytics and data-drive decision making. This book by Dr. Farmer and Dr. Safer stands out among them in the following three areas.

First, one third of the book is devoted to the practical use of statistics in the library. The concepts of both descriptive statistics and inferential statistics are well explained in plain English. The coverage of statistics is basic and precise. One whole chapter is devoted to data preparation and data cleaning, which is an important topic often neglected by other works. Another chapter talks about how to choose different statistical methods to meet different data analysis purposes. For example, if your goal is to find the direction and strength of the linear relationship between two quantitative variables, such as the relationship between the amount of books the library has and the student enrollment of the school, the Pearson Correlation method should be used. It lists more than ten statistical methods, and describes the usage of each, and gives examples for each method. This is very valuable in helping librarians choose what statistical method to use when doing data analytics.

This part of the book also talks briefly about several statistical software packages, including the popular Minitab, SPSS, SAS, R, and Tableau. It lists some advantages and disadvantages of each and gives advice on which to choose.

Another key feature of the book is a collection of fourteen case studies (fourteen chapters) that look at how data analytics can be used to improve services or to introduce new services, in areas ranging from collection development, benchmarking library performance, and reference services, to institutional repositories. Though quite a few cases are taken from K-12 school libraries, there are several from public and academic libraries. These fourteen case studies can function as exemplars for the readers to learn how to put data analytics theory into practice.

The last outstanding feature of the book is its bibliography. It lists more than forty references on both practice and theory in data analytics, including introduction to statistics.

In the first part of the book, the authors introduced a model of data-driven decision making: the Six Sigma model. According to the authors, “Six Sigma is the most well known of these data-driven models for organizational continuous improvement. The business sector in particular uses Six Sigma as a management tool to optimize cost-effective practice, control quality, and increase customer satisfaction by using data to identify problems and their causes, and then identify workable solutions.” A total of six chapters are devoted to this topic. This section is helpful but not that useful and has no direct relationship to the rest of the book.

One thing this book does not cover is data visualization. It only briefly introduces several graphs in the data cleaning chapter. The authors appear to be avoiding dealing with this topic in this book. Considering that data visualization is such a big topic and there are already so many publications in this area, it is not a big drawback to not deal with it here. Another minor drawback of this book is that some tables and figures are not explained very well.

--- Yongming Wang, The College of New Jersey, Ewing, NJ, USA

DOI: <https://doi.org/10.23974/ijol.2017.vol2.2.46>