

Analysis of Data from Questionnaire Surveys – Book Review

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ŘEZANKOVÁ, H. *Analýza dat z dotazníkových šetření (Analysis of Data from Questionnaire Surveys)*. 4th Ed. Prague: Professional Publishing, 2017, 225 p. ISBN 978-80-906594-8-3.

Questionnaire surveys are a source of statistical data in many application areas. Publications dealing with methods of analysing these data are very sought-after and demanded. Therefore, it is no surprise that Professional Publishing has released already the fourth, substantially revised edition of Hana Řezanková's book on this issue.

The book is divided into seven parts and an appendix. The basic difference from previous editions lies in data illustrating the presented methods. These data are inspired by a real questionnaire survey *REFLEX* that is repeatedly conducted among college graduates. IBM SPSS Statistics is used to make specific

calculations in the book. Thus, the reader can follow the individual steps of the analysis and implement them analogously for his own data.

The data collection phase of the questionnaire survey, as well as the data preparation for processing, are discussed only marginally in the introductory part of the book. However, it is clear from the two relevant chapters that the type of variables in the analysed data files has to be taken into account and that adequate tools must be used for the analysis. Attention is rightly paid to the issue of missing data. These are very common in questionnaire surveys and correct treatment of them is necessary exactly already in the phase of data files preparation.

The book focuses logically on an analysis of data files with categorical variables. The specific tools applicable in this case to describe the obtained data can be found in the third chapter of the book. Their structure is explained, calculations of their values are made on the examples; the results are interpreted. At the end of

the chapter, principles of statistical inference and statistical tests (that are the most frequent in the given area) are summarized.

Questionnaire surveys are often motivated by questions about relationships between variables. The reviewed publication provides an overview of various types of coefficients of association constructed on the basis of frequencies in a two-dimensional contingency table. Again, examples of their calculations are attached. The coefficients of association exist in a large amount and the software usually offers

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the calculation of many of them. The reader would probably like to get here a more detailed advice as to when and why choose a particular coefficient. The analysis options for multidimensional (three-dimensional) classification – on the example of several 2x2 tables in the layers – are mentioned at the end of the chapter.

The next part of the book deals with a file comparison. The choice of analytical instruments is primarily influenced by whether confronted files can be considered independent or dependent samples. Again, the nature of the analysed variables has to be taken into account and therefore the author applies even many of the non-parametric tests here.

Logistic regression deals with the modelling of asymmetric dependence when the response variable is categorical. The author devotes a separate chapter to its most widespread variant, when the dependent variable is only dichotomous. The practical application of the method and clarification of individual steps, the use of evaluation tools and interpretation of results are preferred in the text over the theoretical background of this method. Finally, the book summarizes, again with the support of examples, the principles of some methods of multidimensional statistics determined for analysing files with categorical variables, such as cluster analysis, multidimensional scaling or correspondence analysis.

As already mentioned, the book includes many examples. To explain the procedure, the solution is usually made without a computer (perhaps here and there in too detail). To describe the practical data analysis, the solution is then realized with the modules of IBM SPSS system. The way of working with data and the input of the analysis in the system itself are described, as well as the output components and the interpretation of the results. I consider this approach to be very helpful especially for readers, who are more interested in the practical side of data analysis than in its theoretical background.

The reviewed publication does not require from readers to have much theoretical knowledge; however, it assumes that they have already been educated in the field of statistical analysis. It contributes to developing readers' knowledge and their ability to apply it adequately.

The book is readable, clear, and I believe that it will find its readers and users again. (Many of them will appreciate even its soft bookbinding, which is handy to work with.) Moreover, the book might be for someone an invitation to study more.