MONOGRAPH

PETERSSON, G. J. and J. D. BREUL (eds.). *Cyber Society, Big Data, and Evaluation*. New Brunswick: Transaction Publishers, 2017. ISBN 978-1-4128-6436-7

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Almost all of us search online for information, communicate with friends and business partners, or make business there. We are online every day. Information about our online activities is stored as data – Big Data. According to the Moor´s law (the observation that the number of transistors in a dense integrated circuit doubles approximately every two years), the computational capacity of electronic devices is growing progressively. It makes production of knowledge cheaper, quicker and accessibility of information easier. Thus, more data is available. This datafication of our everyday live is a crucial part of Big Data concept.

In the book, 22 co-authors contribute in 13 chapters to a discussion on current application of Big Data in evaluations and on how to use them in the future. All these authors point out opportunity and challenges connected with Big Data in evaluations. Big Data offers new data sources to evaluations. Still, using Big Data in evaluations is rare.

Low use of Big Data is caused by its five definition characteristics. First, enormous volume of data represents a problem for standard statistical software packages, computational capacity, and evaluators´ skills. Second, massive flow of data, which is continuous, requires awareness of the sources and processes in data and definition of variables used. Third, variety represents sources of data, which can be structured differently and difficult to merge to be valuable for an analysis. Fourth, large data is contaminated by biased data and with data difficult to work with. This veracity causes the main problems with Big Data. Fifth, volatility

represents a problem of changes in the data in time, decision on time point when to analyze it, and need to store data.

The third chapter reports about a survey among evaluators on the professional networks (LinkedIn and evaluation communities). The results point out that volume of Big Data is the easiest issue to understand among evaluators. Velocity and veracity are more problematic to conceptualize by them. Thus, use of Big Data among surveyed evaluators is very limited and almost non-existent. Reasons staying behind this underutilization are a need for specific data skills and not clear understanding of the character of Big Data among evaluators. Big Data is an opportunity on one side, but it also changes evaluations and the role of evaluators. Moreover, survey of literature on Scopus reveals that Big Data blur the lines within the policy cycle. From independent experts, evaluators would evolve in co-designers of policies as evaluation could enter each phase of the policy cycle.

The reviewed book gives us some examples where Big Data had been used for evaluative purposes, what are both opportunities and limits of Big Data in evaluations. This main part of the book is composed of several case studies on how Big Data has been used in evaluations. These are the following cases. First, the chapter 4 introduces a case of evaluations of health-care quality in Canada, which points out speed of data production and availability for evaluations. Second case in the chapter 5 is a case of Consumer Confidence and Social Media Data. Use of Big Data makes predictions better in comparison with usual extrapolations. Third case study in the same chapter concerns cases using Google search queries on prediction of flu spread among population – Google Flu Trend, and unemployment benefits relating to bankruptcy intensity in the Netherlands. Fourth case study relates to digital piracy and the copyright alert system using Google Trends again. It enables to collect data on actual behavior rather than on statements collected in surveys especially when the activity is at the edge of legal norms (chapter 6). Fifth, protection of Super Bowl by applying simultaneous combinations of data from several sources is a content of the chapter 7. It points out the issue of all five Vs in Big Data. Transport management using Big Data to optimize urban traffic in the chapter 8 reflects a practical real-time application of Big Data and evaluations.

Chapter 10 investigates demand and supply of Big Data evaluations. It confirms the findings of previous chapters and concludes that not only there are no incentives to use Big Data in evaluations, but also rather opposite – fear of Big Data causes not to use it.

Overall, the book summed up with four main issues of relationship between Big Data and evaluations. First, having Big Data does not solve the need to have insight into the data and theory staying behind. There are worries about future of evaluations because that Big Data can outperform evaluations by providing quicker, cheaper, and more targeted information than evaluators can provide. The authors conclude that the evaluators do not need be afraid of Big Data. Big Data needs theory behind it to be defined and collected. It is the specific role of evaluators to do this task. Data by itself are not capable to form scope of the evaluations and are able only to provide us with some insights. Second, Big Data does not provide information to explain causality. It is always easy to run correlations with it, but caution is required. On the other hand, Big Data could help us in finding causality and explaining reality. Third, volume of Big Data may provoke imagination that we work with data concerning the whole population. Even its volume, it is still only a sample. It specially concerns individuals not included in the sample because of not using smart phones or not using social networks. Fourth, the size of Big Data also causes that it will not be stored forever. Thus, it is available at the moment.

All contributions point out the importance of privacy relating to Big Data. This issue is important as Big Data contains information about actual behavior rather than intentions. The authors see this as one of the main benefits for evaluations, but it is not a specific for Big Data. In addition, data collected for one purpose are unbiased for another evaluation purpose.

To sum up, the book Cyber Society, Big Data, and Evaluation is an important contribution to the current discussion on development of evaluations.