

STATISTICAL DISCLOSURE LIMITATION AND DIFFERENTIAL PRIVACY

WSS PRESIDENT'S INVITED SEMINAR AND RECEPTION

WEDNESDAY, MAY 1, 2019

2:30 – 4:00 WITH RECEPTION FOLLOWING ON LOCATION

1100 FIRST STREET NE

12TH FLOOR, MATHEMATICA POLICY RESEARCH CONFERENCE CENTER
NEAR NOMA/GALLAUDET METRO

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Abstract

For decades, statistical agencies have been disseminating statistical data in the form of microdata from social surveys and tabular data from censuses, surveys and registers. There are many publications detailing the disclosure risk scenarios, types of disclosure risks, statistical disclosure limitation (SDL) methods and the quantification of disclosure risk and data utility. However, these traditional forms of statistical data and their confidentiality protection rely heavily on assumptions that may no longer be relevant. In recent years, we have seen the digitalization of all aspects of our society leading to new and linked data sources offering unprecedented opportunities for research and evidence-based policies. These developments have put pressure on statistical agencies to provide broader access to their data. On the other hand, with detailed personal information easily accessible from the internet, traditional SDL methods may no longer be sufficient and this has led to the opposite effect of statistical agencies restricting and licensing data as an SDL method. To meet the demands and challenges for disseminating more open and accessible data through for example, web-based platforms where outputs are generated and protected on-the-fly without the need for human intervention, statistical agencies have been investigating more rigorous data protection mechanisms to incorporate into their SDL toolkit. One such mechanism is Differential Privacy (Dwork, et al. 2006), a mathematically principled method of measuring how secure a protection mechanism is with respect to personal data disclosures. In this talk, we present some future dissemination strategies being considered by statistical agencies and the potential for Differential Privacy to protect the confidentiality of data subjects with well-defined privacy guarantees.



Dr. Natalie Shlomo

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Natalie Shlomo is Professor of Social Statistics at the School of Social Sciences, University of Manchester. Prior to that, she was on faculty at the University of Southampton and a methodologist at the Israel Central Bureau of Statistics. She is a survey statistician with interests in survey design and estimation, record linkage, statistical disclosure limitation, statistical data editing and imputation and small area estimation. Natalie is an elected member of the International Statistical Institute and currently serving as Vice President. She is also a fellow of the Royal Statistical Society and the International Association of Survey Statisticians. She serves on the editorial board of several journals and is a member of national and international methodology advisory boards.

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