

Impact case study (REF3)

Institution: Goldsmiths, University of London		
Unit of Assessment: 21, Sociology		
Title of case study: Re-imagining citizens as co-producers of official statistics		
Period when the underpinning research was undertaken: 2013 onwards		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Evelyn Ruppert	Professor (PI, ARITHMUS)	2013 –
Baki Cakici	Postdoctoral Researcher	2014-2017
Francisca Grommé	Postdoctoral Researcher	2014-2018
Stephan Scheel	Postdoctoral Researcher	2014-2018
Funda Ustek-Spilda	Postdoctoral Researcher	2014-2018
Ville Takala	Doctoral Researcher	2016-2019
Period when the claimed impact occurred: August 2013 – August 2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>Professor Evelyn Ruppert led research that demonstrated how the legitimacy and quality of official statistics derived from big data can be significantly enhanced by re-imagining citizens as co-producers of statistics. By engaging EU statisticians in re-considering the roles of citizens in the making of official statistics, Ruppert influenced the agenda of the EU and specifically the priorities adopted by the 28 EU Directors General of National Statistical Institutes in 2018. This in turn is leading to action plans that will benefit citizens by engaging them as co-producers in the innovation of official statistics.</p> <p>This was achieved through long-term and sustained collaborative relations between Ruppert and a team of researchers with senior EU statisticians over a five-year period, supported by ESRC and ERC funding.</p>		
2. Underpinning research		
<p>The underpinning research began at a critical time: the moment in the early 2010s when government statisticians started experimenting with digital technologies and big data such as that from mobile phones and social media as possible sources for the production of official statistics. An objective of the research was to study these experiments in their infancy in order to identify their implications for citizens and thereby inform decision-makers about their adoption. To do so required access to the discussions and practices of a relatively closed community of statisticians.</p> <p>Through two funded projects Ruppert was able to do this research by establishing collaborative relations with statisticians through which such access was made possible. The first project, Socialising Big Data (ESRC Cross Investment Fund, 2013- 15; ES/H010769/1 (CRESC); PI Ruppert), engaged EU statisticians in collaborative workshops to explore the implications of their early experiments for citizen trust in, and the legitimacy of, official statistics. This initial research resulted in Ruppert leading an ERC funded project, Peopling Europe: How data make a people (ARITHMUS) (ERC Consolidator Grant, 2014-20; CoG 615588; PI Ruppert). With five postdoctoral and doctoral researchers based in Goldsmiths, collaborative ethnographic research was conducted across seven statistical institutes to document the working practices of EU national and international statisticians as they experimented with digital technologies and big data (R1, R2). Drawing on a conception of digital citizens developed in <i>Being Digital Citizens</i> co-</p>		

authored by Ruppert in 2015 (R3), the ARITHMUS research team analysed how these experiments treated digital technologies as one-way tools to extract data about people rather than engage them actively in its production.

Specifically, the ARITHMUS team investigated how such experiments did not engage with the interactive possibilities of digital technologies through which people could be engaged as active participants and citizens in the co-production of data. Rather, and as developed in Ruppert's research and writing on data politics, such experiments treated data as something to be extracted from people and exploited by governments (R4).

The ARITHMUS research team took up these findings through further research that engaged statisticians not only as research subjects to be observed ethnographically, but as collaborators committed to thinking anew together to imagine different relations to citizens in the production of data for official statistics. This involved three key collaborative fora:

1. Academic Member on the European Statistical System (ESS) Big Data Task Force:

Ruppert was one of only two invited academic experts to serve on the ESS Big Data Task Force from 2014-17. As the Task Force was newly established in 2014, she was able to provide expert advice and bring questions of citizen participation and trust in official statistics to the agenda.

2. Annual meetings with 10 EU senior statisticians:

Ruppert convened an Advisory Group of senior EU statisticians that collaborated with ARITHMUS researchers from 2014-2017. In addition to regular meetings and discussions, one outcome was an ARITHMUS working paper on 'Citizen Data and Official Statistics'. The paper set out initial principles for reimagining the role of citizens as co-producers of official statistics. From principles concerning smart statistics and privacy, to those of citizen science and experimentation, the working paper provoked statisticians to think differently about the roles of citizens. The paper led to articles published in leading international journals of official statistics (R5, R6).

3. Engaging with principles about the role of citizens in a design workshop:

Bringing together 13 EU statisticians with academic researchers, and information and digital designers, the workshop led to the development of design principles and road maps for four prototypes of possible 'citizen data apps'. The prototype apps were designed in ways that recognise people not as data sources but as citizen co-producers of statistics (R6). In this way, the design workshop demonstrated how thinking of citizens as co-producers could be realised in apps.

Subsequently, Ruppert demonstrated the innovative possibilities of citizen co-production of statistics through a public engagement event involving a digital installation on 'How do we know who we are?'. As part of the Tate Exchange programme, 'Who are we?', the collaboration between artists, activists and academics attracted approximately 10,000 visitors to the Tate Modern (March 2017). Ruppert collaborated with Dawid Górný, a digital programmer and interaction designer, to produce a digital installation exploring citizen participation in data production. Through a critical engagement with official statistics on migration, some 350 visitors participated in the co-production of migration data and demonstrated how citizens could engage with and participate in the generation and visualisation of data.

Impact case study (REF3)

The ethnographic fieldwork, close and sustained collaboration with EU statisticians and the Tate installation, were underpinning research that led to insights and findings written up in publications targeted to social scientists (R1-4), statisticians (R5-6) and citizens through two online essays published in 2017: 'Reflections on a collaboration,' *medium.com*; and 'How do we know who we are? Reimagining government data through the digital arts', *openDemocracy.net*.

3. References to the research

The following publications were all peer reviewed and Gold Open Access outputs of the ARITHMUS project (except 2015 book), which is critical for statistician and citizen access.

- R1.** Ruppert, E. and S. Scheel (2019) 'The Politics of Method: Taming the New, Making Data Official.' *International Political Sociology*. 13(3): 233-252. (Submitted to REF2)
- R2.** Cakici, Bi, and E. Ruppert (2020) 'Methods as Forces of Subjectivation: Experiments in the Remaking of Official Statistics'. *Journal of Cultural Economy*, 13(2): 221–235 (Submitted to REF2).
- R3.** Isin, E. and E. Ruppert (2015) *Being Digital Citizens*. Rowman and Littlefield International. 1st Edition. (2nd edition 2020) (Submitted to REF2).
- R4.** Bigo, D., E. Isin, and E. Ruppert, (eds) (2019). *Data Politics: Worlds, Subjects, Rights*. Abingdon and New York: Routledge. (Available on Request)
- R5.** Ruppert, E., Grommé, F., Ustek-Spilda, F. and B. Cakici. (2018) 'Citizen Data and Trust in Official Statistics.' *Economie et Statistique*. 505-506: 179–193. (Available on Request)
- R6.** Ruppert, E. (2019) 'Different Data Futures: An Experiment in Citizen Data'. *Journal of the International Association for Official Statistics*. 35: 633–641. (Available on Request)

4. Details of the impact

Achieving impact involved sustained and long-term engagements (2013-19) with national and international statisticians. By its nature, Ruppert's research and impact is 'complex and non-linear' (REF Panel Criteria and Working Methods, p. 321) meaning that the forms of collaboration which lead to change overlap both the underpinning research and details in the impact sections of the case study.

Impact 1: Impact on European Statistical System (ESS) Policy – the Bucharest Memorandum

Ruppert's collaboration with the European statistical community, detailed in the Underpinning Research, was sustained through her long-term membership on the ESS Big Data Task Force. The Head of the Task Force states that Ruppert "provided critical expert input that **contributed to building the European Statistical System agenda** for big data and official statistics." (S1) The Eurostat Head of Methodology and Innovation in Official Statistics and lead of the Task Force on Trusted Smart Statistics states that Ruppert "played an important role' by **providing scientific advice to the statistical community**." (S3) Her role on the Task Force was instrumental to her participating in, and the findings of the ARITHMUS project influencing, the Directors General of National Statistical Institute (DGINs') meeting in Bucharest in October 2018. The 'Bucharest Memorandum on Official Statistics in a Datafied Society' was adopted by the DGINs and is the first memorandum that explicitly acknowledges citizens as key stakeholders, the need to engage in partnerships with citizens and the role of citizen science in the production of data and statistics (S7). The Chair of the ESS Big Data Taskforce confirms that Ruppert's impact "is clearly reflected in the Bucharest Memorandum on Official Statistics in a Datafied society (Trusted Smart Statistics) which was adopted by the chief statisticians of the European

Impact case study (REF3)

Statistical System (12 October 2018) where citizens and trust are considered as being fundamental for the development of smart official statistics.” (S2)

The Chair of Eurostat’s Big Data Taskforce confirms that the ARITHMUS project “has innovated thinking on the roles and rights of citizens in the making of official statistics in an increasingly digital society” (S1) and specifically that Ruppert “has inspired us in the European Statistical System to rapidly move from the concept of Smart Statistics to the one of Trusted Smart Statistics”. (S2)

Impact 2: Impact on Practice – Implementation of the Bucharest Memorandum

The commitments enshrined in the Bucharest Memorandum were subsequently elaborated in 2019 in an ESS ‘Trusted Smart Statistics Strategy and Roadmap’ (S8). It sets out, inter alia, how the principle of acknowledging citizens as partners and stakeholders can be operationalised. The implementation roadmap includes plans for work “**along the lines of the recommendations of the ARITHMUS project** and significant collaborative work with all stakeholders, in particular citizens.” (S2) These plans include specific research programmes focused “on the development of ‘citizen smart surveys’ and ‘privacy preserving statistics by design’ both of which were inspired and influenced by the research undertaken by Professor Ruppert.” (S2) In this way, the research is leading to changes in practices of statisticians that will benefit citizens by engaging them as co-producers in the innovation of official statistics. For example, an initiative was introduced in 2020—called the ‘ESSNet Smart Surveys’—involving 12 countries working together to develop a European Platform for shared smart surveys that engage with citizens through the use of apps and wearable devices. It addresses issues of citizen engagement, trust, ethics, and transparency and will involve several pilot projects across Europe.

The design workshop, detailed in the Underpinning Research, demonstrated how policies on the role of citizens could be put into practice through the collaborative design of citizen data app prototypes (detailed in R5 and R6). That is, the workshop translated principles into possible designs and how they could work in practice. For the Innovation Manager at Statistics Netherlands, the collaborative design workshop provided “design principles and first ideas for concrete citizen data apps [that] **give clear guidance on innovative ways to collect data for official statistics.**” (S4) The lead statistician at the Office for National Statistics in the UK similarly notes that the meetings and workshop were “positive, stimulating, innovative and enjoyable and **has made me think differently about our work** within official statistics.” (S5) Recognising the complexity of these issues, the Canadian Assistant Chief Statistician notes that while new technologies offer new possibilities for official statistics, “at the same time, they require a thoughtful process to see **how best to engage citizens.** They could also raise concerns from citizens, regarding privacy and confidentiality. In that context, the workshop on a citizen data app **allowed fruitful discussions and exchanges of experiences** from participants from diverse backgrounds.” (S4) As a Data Scientist noted, “reflecting and returning to ONS we have liaised with the Head of Data Collection to suggest developing a prototype app for official statistics, building upon the outcomes of the workshop.” (S5).

Impact 3: Influencing the international statistical community, beyond the ESS:

The relevance of the research findings of ARITHMUS **for the policies and practices of EU statisticians** was acknowledged in invitations to contribute articles to special issues of leading international journals for professional statisticians. The first was published in *Economie et*

Statistique (April 2018) (R5). That article establishes the main principles of co-production that informed the collaborative workshop discussed in Section 2. Following Ruppert's presentation to the DGINs' meeting, she was invited to submit a second article, which was published in the *Journal of the International Association for Official Statistics* Vol. 35 (R6). That article reports on the design workshop and is based on Ruppert's presentation to the DGINs' meeting, which influenced the Bucharest Memorandum.

Acknowledgment and recognition of the contribution of the underpinning research, specifically the concept of citizens as co-producers of official statistics, is further evident in **invitations to deliver presentations to international meetings** of national and international statisticians. International meetings included: the 61st World Statistics Congress (2017, Marrakech) to 50 statisticians; the United Nations Economic Commission for Europe (UNECE) Workshop on Statistical Data Collection (2017, Ottawa) to 75 statisticians; and, the OECD's PARiS21 Cross-Regional Forum on 'Building Trust in Data' (2019, Paris) to 50 statisticians from low and medium income countries. The invitations to contribute to professional statistical journals and international meetings are recognition of the relevance of the research to the international statistical community and have extended its reach to statisticians around the world.

5. Sources to corroborate the impact

S1. Factual Statement on the impact of ARITHMUS project, Mikhail Skaliotis, Head of ESS Big Data Task Force, Eurostat. Skaliotis led Eurostat's Big Data Task Force, which he founded in 2014. Skaliotis is recognised as the leading statistician to put big data on the policy agenda of the ESS and also served on the ARITHMUS Advisory Group.

S2. Factual Statement on ARITHMUS/Ruppert's contribution to shaping the research agenda of official statistics, Mikhail Skaliotis, Head of ESS Big Data Task Force, Eurostat.

S3. Factual Statement, Albrecht Wirthmann, Task Force on Trusted Smart Statistics and Head of Methodology and Innovation in Official Statistics, Eurostat. Wirthmann joined Skaliotis in leading Eurostat's work on the Big Data Task Force. Wirthmann later assumed leadership of this work and that of a subsequent task force on trusted smart statistics.

S4. Factual Statement, Barteld Braaksma, Innovation Manager, Statistics Netherlands.

Braaksma is the leading statistician at Statistics Netherlands on big data and formed the first innovation lab in the EU to engage in experiments with big data for official statistics. Braaksma also served on the ARITHMUS Advisory Group.

S5. Factual Statements, Jane Naylor, Methodology, Methods, Data and Research, and Karen Gask, Data Scientist, ONS, UK. Naylor led ONS's Big Data Team in 2014, which was formed to demonstrate the potential for using big data within official statistics. Naylor also served on the ARITHMUS Advisory Group. Gask is a data scientist who works on big data at the ONS and participated at the ARITHMUS collaborative design workshop.

S6. Factual Statement, Sylvie Michaud, Assistant Chief Statistician, Statistics Canada. Michaud is the second highest ranking statistician at Statistics Canada and participated in the ARITHMUS collaborative design workshop.

S7. The Bucharest Memorandum on "Official Statistics in a datafied society (Trusted Smart Statistics)" adopted at the 104th DGINs Conference, Bucharest, 10th and 11th October 2018.

S8. Agenda Item/report, 40th Meeting of the European Statistical System Committee, *Implementation of The Bucharest Memorandum on "Official Statistics in a datafied society (Trusted Smart Statistics)"*. Trusted Smart Statistics Strategy and Roadmap (European Statistical System Committee, 16 May 2019. ESSC 2019/40/07/EN.