

Telling the story in statistics

Strand organiser: Phil Humby (Office for National Statistics)

11:30 - 1:00 Wednesday 13 September: Telling the story in statistics

Proportions of proportions: One way to pack a sophisticated dataviz story

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One classical challenge of dataviz storytelling is to represent several interconnected variables when they use different subpopulations as denominators. Here I present an example of dealing with the challenge. The story that we are telling is fascinating and complicated. In a nutshell, we show that final childlessness may or may not be primarily explained by the inability to find a partner depending on the societal contexts – using DHS data we look at multiple countries that vary vastly on the development scale. The link between childlessness and the inability to form a partnership looks different in the studied groups of countries and varies for men and women. Male childlessness seems more conditional on never being in a union, while the link is less pronounced for women. This is observed among a variety of countries with an exception of least-developed African countries where childlessness is less prevalent. From a dataviz point of view, we have the challenge of having a proportion of the total surveyed population who remained childless by age 35, and we know and want to explore simultaneously the proportion of this childless subpopulation who was never in a union by age 35 – a proportion of proportion. On top of this, we have big and meaningful differences between countries, which seem largely driven by their level of development, and by sex. In the presented dataviz I find a way to represent all the relevant dimensions of the data, not forgetting the main lines of the story. How? Come and see.

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Data visualisation as a tool to communicate health and social inequalities

Rob Davidson, James Cheshire – University College London

There are large inequalities in health and its wider social determinants in the UK, and changes in policy and public attitudes are required to reduce those disparities. Data visualisation can help maximise the potential for that change through more effective communication, but it is not clear how researchers, policymakers, funders and data providers engage with this tool in their work. The aim of this paper is to document the ways in which those stakeholders produce and consume maps and charts about population health data, and therefore understand the limitations as well as the opportunities for cartography and data visualisation in a health context. We investigate this via semi-structured interviews with participants from the field, in which we discuss their interaction with visualisation at different stages of their workflow, the challenges they face, the resources they turn to, and their thoughts on how visualisation could be deployed more effectively. Ten interviews have been conducted to-date, mostly with researchers, and we aim to complete at least a further ten, including with more individuals working in policy and the media. Preliminary results suggest that researchers recognise the communicative potential of maps and charts, but sometimes lack the time and skills to produce and edit them. Other themes include the role of aesthetics; good communication between analysts and designers; visualising uncertainty (including when presenting to media audiences who “just want a number”); and the extent to which visual complexity should vary for different audiences.

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Visualising landscapes of deprivation 2.0

Daniel J Exeter, Jessie Colbert, Katarzyna Sila-Nowicka - University of Auckland, New Zealand

Area deprivation measures have been used extensively in research, policy and advocacy in New Zealand and internationally. In many instances, composite deprivation measures are categorised into deciles or quintiles for analyses, including thematic maps to highlight spatial differences in social circumstances within and between regions. Researchers and policy analysts overwhelmingly adopt conventional choropleth maps to describe the

spatial distribution of deprivation, to emphasize associations with a range of socio-demographic outcomes, or to allocate funding to areas in need. While thematic maps are intuitive and relatively straightforward for the general public to interpret, they also have a number of limitations. Here, we use the NZ Index of Deprivation (NZDep) and the Index of Multiple Deprivation (IMD) to provide a cartographic critique of area deprivation in Aotearoa New Zealand. First, we revisit some research from the late 1990s that revealed the opportunities and risks associated with using conventional cartographic techniques to portray social circumstances. Next, we compare and contrast the indicators used in NZDep and the IMD, before demonstrating a number of contemporary geo-visualisation developments that extend the cartographic toolkit to more effectively describe and interrogate spatial patterns of area deprivation and its relationship with health and social outcomes. We use both static and dynamic geo-visualisations including: rose bar plot; violin plot; ridgeline plot; cartograms; tile grid small multiples; and Chernoff faces to explore 'landscapes of deprivation'. An interactive atlas allows users to choose techniques to better understand patterns.

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Localised rich content for the 2021 Census outputs

Robert Fry, Ahmad Barclay – Office for National Statistics

The Census gives us a once in decade opportunity to understand the detailed make-up of our communities. This Census we have fully embraced a range of rich content that make it easier than ever before for users to access and understand the insight. Interactive maps allowing people to explore data down to output area level; customisable area profiles allowing users to define an area and information of their choice; automated localised reports turning the data into insight, and more. An array of exploratory and explanatory formats that work for a variety of users. This presentation will share the thinking behind this content; explore the reaction to date; and talk through future applications.