

OPD/42198: Online meta-database and data visualisation of long-term social, economic and environmental trends

Grant holder: Professor Sir David Hendry (PI) – Dr Max Roser (joint applicant)

The aim of PD/42198 was to develop the online publication www.OurWorldInData.org that analyses the social, economic and environmental history of the world up to the present using empirical data visualised in interactive graphs and maps.

The target audiences are the general public, journalists, and academics. Many members of the general public are interested in how the world is changing but find it hard to get access to the relevant research. To address this issue we are drawing together the best quantitative work and make it accessible by visualising the data. Thereby we now show the progress humanity has made and also highlight the challenges that lie ahead.

Topic by topic we visualise the empirical data so that the reader can understand how the world is changing. For each topic the quality of the data is discussed and, by pointing the visitor to the sources, this website has become a database of databases – a meta-database.

For academics it is a starting point to find data sources on a wide range of topics. The accessibility and the available data visualisations make it an ideal teaching tool. The meta-database is freely available and the data visualisations are made available under a Creative Commons license, which makes Our World In Data especially useful for journalists.

We have expanded the content of the site; we have added new material throughout all sections, we have completely redesigned the website with a focus on ease of use, and ensured that it works across all platforms and screen sizes.

Financed by the generous grant of the Nuffield Foundation we hired talented temporary research assistants to help develop the content and software:

- Lindsay Lee has been helping to expand the content, particularly on health and demographics, and made it more consistent across the site.
- Mohamed Nagdy, an economist with particularly strong empirical skills, helped to expand the content of the sections on growth, economic development, and education.
- Zdenek Hynek worked on technical aspects of this publication. These are summarized below.
- In February 2016 Jaiden Mispy took over from Zdenek Hynek and has since then improved the technical side of the project.
- Julia Murphy worked as an intern on the project and focussed on media and cultural change.
- Sir Tony Atkinson, who developed the original idea together with Max, continued as an adviser to the project.

We have developed an online tool to build the charts used on the site. Before this, the creation of charts required significant technical skills as each visualisation had to be

done individually: a spreadsheet with the data had to be prepared, and then a page of HTML and JavaScript had to be written to visualise the data stored in this file. This entailed considerable manual input to add each visualisation and update visualisations with new data. Our new chart builder tool takes data uploaded on a central back-end SQL database and automatically creates the type of chart requested. The charts are now more interactive and a user can pick and choose which countries he or she would like to visualise. This tool is now the very heart of the publication and our open-source tool is also used on other web sites.

As promised in the proposal we have collaborated closely with the Gapminder Foundation and Ola and Hans Rosling. For example we worked on a documentary on global poverty that was aired on the BBC in September 2015. Currently we are collaborating on the production of teaching material on economic and social history for high schools.

This project is aiming to take research from Universities to a wider public. And the main outcome of interest is how successful we were in reaching a wide audience:

- More than 2,500,000 people have visited OurWorldInData.org in less than two years. These visitors came from all countries in the world.

- Over the funding period more than 300 articles portrayed the project or used material on global development from Our World In Data.

English speaking media outlets using Our World In Data include *The New York Times*, *The Washington Post*, *Forbes*, *Slate*, *Vox*, *Foreign Policy*, *Thomson Reuters*, *The Guardian*, *Quartz*, *Bloomberg*, *World Economic Forum*, *Business Insider*, *The Financial Times*, and the *New Yorker*. Non-English speaking media outlets are listed in the link below.

- In videos and television Our World In Data has been used by the BBC in an hour-long documentary on global poverty with Hans Rosling, and in television shows and news.

- On the radio and in podcasts Our World In Data and its content was discussed in detail by public radio stations in Germany (SWR, BR, Deutschland Radio), and in the shows *Data Stories*, *Forschergeist*, and WNYC (*Takeaway*).

- All media coverage and use that we are aware of is listed at: www.OurWorldInData.org/media-coverage.

- On social media, material from OurWorldInData.org was seen more than 90 million times (individual views).

- From the feedback we know that the content of Our World In Data is used widely in teaching and in lectures. And we have given dozens of presentations ourselves in which we used the material from the online publication.

We keep on working on this online publication and there is still much more work to do. We will work on this publication for several years.

For this we applied for extended collaboration with the Nuffield Foundation – in a joint application with the Royal Statistical Society –, but we were unfortunately not successful. Fortunately the readers of the publication stepped in and more than 180 individual people supported our work financially so that we can continue with the necessary work for some time.

We will continue to focus on the technical framework and the functionality of the chart builder while also working to substantially expand the content. Currently we are particularly focussing on the public provision of health and education and are presenting the empirical evidence and research on the role of the state in providing these goods.

The second main focus of our current is gender inequality: We are currently researching the 1) evidence on economic gender inequality, 2) the history and challenges of political empowerment, and 3) the expansion of women's rights and the empirical research on violence against women.

This project has exceeded our expectations. With the support from many external collaborators it was possible to achieve even more than what was outlined in our original proposal to the Nuffield Foundation.

We are grateful to the Nuffield Foundation for their support to start this project. The success of this project means that currently three researchers are working full time on this project and we plan to do much more work on this project in the next decades.