DSC-64 Evaluating calorie intake

2018-06-29

This research explored novel data sources that could help improve the accuracy of official statistics on calorie consumption from food. The analysis focused on the use of biometric data to statistically re-calibrate estimates derived from national survey data.

Team members

- Rowena Bailey

The need

Self-reported data on food consumption behaviours are widely recognised as containing inherent biases. Despite the meticulous and robust survey design methods, it is a challenge to accurately capture consumption.

The objective was to research methods for improving national population level estimates of people's energy consumption, taking into consideration the opportunities afforded with data science techniques. This included the exploration of novel data sources alongside the traditional survey data, of which the National Statistics on diet and nutrition are based upon.

Impact

This approach could be used as a practical solution for improving the accuracy of the calorie intake estimates, making use of an existing government data source.

Furthermore, this method may be suitable for the production of other statistics on individual consumption behaviours such as smoking and drinking alcohol. Reporting bias can also be a challenge when measuring intake of alcohol or cigarettes and other behaviours that are subject to perception of social acceptability and food consumption is similar to these.

Data science

The aims of this project were to quantify the level of accuracy in estimates from self-reported data and explore methods for adjusting and improving the accuracy

of population level statistics.

ECLIPSE focused on the use of biometric data as it offers a robust and objective measure to benchmark and facilitate comparison of estimates derived from other data sources, including self-reported data collected in national surveys. The goal of the project was to develop a proof of concept for a statistical methodology and explore its viability for practical use. The analysis carried out in this project was an exploration of data science techniques that could improve the accuracy of national estimates of calorie intake.

Stakeholders

Office for National Statistics (ONS) Health Analysis and Life Events Team.

Code and outputs

The code and outputs for the analysis are publically available on GitHub. The data are available from the UK Data Service. The report is also available.

Delivery

- [x] April 2017: project started
- [x] July 2017: review complete
- [x] October 2017: code complete
- [x] February 2018: published

Further information

Please contact datasciencecampus@ons.gov.uk for more information.

Updates

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Rowena Bailey produced a report detailing the process and outcome of this project in June 2018.