**Disclosure Control: Applying Cell-Key Perturbation to 2021 Census Outputs**

Keith Spicer; Stephanie Blanchard; Iain Dove; ONS Disclosure Control

In 2011, ‘pre-tabular’ protection in the form of record swapping was applied directly to the census microdata. After the standard releases, outputs could be requested by users, which then had to be individually created and assessed for disclosure risk by the SDC team. This process took considerable time, and after the redesign of tables for protection, some users were faced with outputs that did not meet their needs.

For Census 2021, ONS would like to allow much faster access to data and allow users to define/ create their own outputs. To remove the need for individual checking of tables, a post-tabular method of protection, ‘cell-key perturbation’, will be needed alongside record swapping. This perturbation will be required to protect against ‘differencing’ of tables but will consequently have an impact on outputs that will need to be explained to users.

This talk will describe and demonstrate the proposed ‘cell-key perturbation’ protection method, the possible outputs system for 2021, how this differs from previous census methods and the resulting benefits and trade-offs for users.

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Keith Spicer:

Telephone: 01329 444983

Email:Keith.Spicer@ons.gov.uk

Stephanie Blanchard:

Telephone: 01329 444715

Email:Stephanie.Blanchard@ons.gov.uk

Iain Dove:

Telephone: 01329 444789

Email:iaindove@ons.gov.uk