



AUTUMN 2008

# 3MOONS

METHODOLOGY DIRECTORATE

LEADING THE DEVELOPMENT OF STATISTICAL METHODS

## AUTUMN 2008

This is the 13th issue of Methodology Directorate's (MD's) quarterly overview of methodological issues in ONS. The 12th issue covered aspects such as:



- an update on the Methodological Consultancy Service
- future directions for MD
- the 13th GSS Methodology conference
- recent conference presentations
- an introduction to the Classifications and Harmonisation Units

Read on for the latest news from MD.

### Advisory committee meetings

MD hosts the first meeting of the Government Statistical Service Methodology

Advisory Committee (GSS MAC) in London on 11 November 2008. This is the new incarnation of the old National Statistics Methodology Advisory Committee, updated to reflect wider GSS participation. Discussion topics are expected to include the impact of technology on visualisation, dissemination of statistics and smoothing with known variance. Please contact Louisa.Nolan@ons.gsi.gov.uk for more information, or see [www.statistics.gov.uk/methods\\_quality/nsmac.asp](http://www.statistics.gov.uk/methods_quality/nsmac.asp).

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## Developing a more effective editing strategy for ONS business surveys

Daniel Lewis

Business survey data are collected and edited to identify and correct suspect values where necessary. Editing is the most resource-intensive part of ONS business surveys, accounting for approximately 35–40 per cent of total survey costs. Due to this there has long been a desire to improve the effectiveness of our editing processes.

The aim is to ensure data are sufficiently clean for their purposes, while minimising the cost of editing. With this in mind, Business Data Division invited Eden Brinkley and Lynne Bismire from the Australian Bureau of Statistics (ABS), to visit ONS in autumn 2007 and describe ABS work to improve its editing processes.

Following this very informative sharing of knowledge, the next step for ONS is to draw on ABS and other international experiences to help develop a new editing strategy. Sources Directorate has set up a project with that aim, known as the 'Eden Project'. The Processing Editing and Imputation (business surveys) branch of Methodology Directorate will be playing a large part in researching and developing the best methods for this new strategy, with some technical advice from academics at the University of Southampton.

The key principle behind improving effectiveness is to focus only on the editing that makes a significant difference to survey estimates. This is in contrast to the traditional editing approach that tries to detect and correct every single error. In practice, there are many errors that have a negligible effect on estimates, so there is scope to reduce editing costs by not manually following up these insignificant errors.

The ABS editing process involves three stages. When data first arrive, they are subject to a very small number of initial edits. These check for things like blank

questionnaires and impossible values. There may also be some automatic correction of large, obvious errors. The second stage is selective editing, which involves prioritising possible errors based on their impact on estimates. Only the errors with a significant impact on estimates are manually edited. The final stage is macro-editing, where aggregate data are inspected to identify any implausible results. The macro-editing picks up any important errors that may have slipped through the earlier stages.

Although selective editing is already used on some ONS business surveys, we still do a lot more traditional manual editing than ABS. We hope to optimise use of this method in surveys where it is already used, and introduce selective editing to a wider range of survey. One of the key methodological challenges will be to investigate and develop selective editing methods that work well for all ONS business surveys.

Selective editing works by calculating a score for every business for the most important output variables. The scores compare returned values with expected values, where the expected values are generally estimated using past data or other available information related to the variable, for example, from administrative sources. The businesses with the highest scores are then manually edited. For this to work effectively, we will need to develop reliable methods of calculating expected values for different types of survey, score functions that can take account of multiple variables and appropriate methods for deriving cut-offs for the scores, below which businesses will not be edited.

This will build the framework necessary to improve the effectiveness of our business survey editing processes.

Watch this space.

# International Association for Official Statistics Conference 2008

The International Association for Official Statistics (IAOS) and the National Bureau of Statistics of China organised the biennial meeting that took place in Shanghai on 14–16 October 2008. The theme of the conference was 'Smart Data, Innovative Uses – Reshaping Official Statistics'.

Stephen Penneck, Director of MD, is currently elected to the Executive Committee of IAOS, with his term coming to an end in 2009.

ONS was well represented at the conference with papers presented by members of MD and other ONS colleagues. Here we present a brief overview of some of the work ONS has been doing to help reshape official statistics.

## Simon Compton (MD)\*

### Populating Quarterly Constant Price Supply and Use Tables with Seasonally Adjusted data:

describes the approach being considered in the UK for this difficult problem, likely to be faced by a growing number of NSIs over the coming decade. It looks at some of the difficult interactions and ordering effects of seasonal adjustment, chain-linking, aggregation and balancing within the context of a detailed set of supply and use tables.

## Simon Compton (MD)\* and Amanda Wilmot (MD)

### Development of Survey Questions on Sexual Identity:

discusses work by Amanda Wilmot and her team on best

practice for data collection, and examining the feasibility of benchmark data in this field. The presentation covers conceptual and administrative issues relating to questioning in a social survey environment, the methodology used to aid question development, and report findings from the research.

## Denise Silva (MD)\* and Philip Clarke (MD)

**Some Initiatives on Combining Data to Support Small Area Statistics and Analytical Requirements at ONS-UK:** reviews established projects on model-based unemployment estimates for Local Authorities and income estimates at lower geographical levels; presents ongoing work to produce estimates for all labour market states simultaneously, and obtain unemployment figures at cross cutting geographies; and describes recent user requirements for local area data with details of ONS projects to meet these demands.

## Frank Nolan (MD), Heather Wagstaff (MD), Ruth Wallis (MD), [Stephen Penneck (MD)\*]

**Managing Multimode Collection Instruments in the 2011 UK Census:** looks at the impact of using the internet in conjunction with the traditional paper-based mode of collection, in the context of the UK Census. It explores changes in the quality of responses and impacts on respondent burden, reporting potential areas for savings and

issues to consider when utilising electronic questionnaires.

## Minda C Phillips (ONS)\* and Paul Sinclair (Department for Children, Schools and Families)

**Using Administrative Data to Improve Social Statistics – An Example of Collaborative Work:** access to data from administrative sources and data sharing is increasingly seen as essential for the development of new and improved statistics. Both the Department for Children, Schools and Families, and ONS, have recognised the need to work together and the paper explains the outcomes from the first stage of a joint feasibility study, as well as plans for future work.

## Dev Virdee (ONS)\*

**Statistical Geographies of the United Kingdom:** a presentation during the session on geographic information and regional reference systems.

**Innovative use of centrally collected data to inform policy at city and region levels:** plenary session discussing the use of data to inform policy.

Please visit [www.iaos2008conf.cn/index.htm](http://www.iaos2008conf.cn/index.htm) for further information about IAOS and to access all papers presented at the conference.

\*Denotes conference presenter

continued



The next UK Census Design & Methodology Advisory Committee (UKCDMAC) meeting is scheduled for Autumn 2008. The meeting is likely to cover topics such as the census outputs strategy, statistical disclosure control methodology, and quality assurance strategy. The previous meeting focused on output population bases and coverage assessment methodology, and the committee was very positive about the ONS proposals. Please contact Garnett.Compton@ons.gsi.gov.uk for further details.

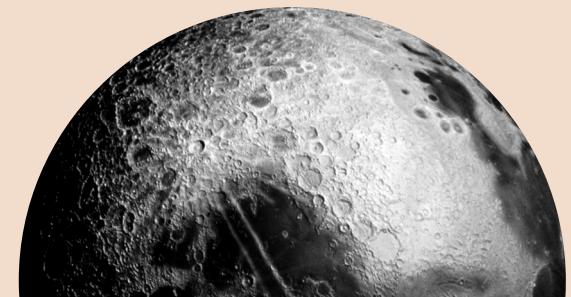
The National Statistics Quality & Methodology Programme Board (Q&MPB) is currently suspended, pending the findings of an ongoing review into the governance and committee arrangements for the GSS, following independence and in view of the new assessment arrangements. Please contact Paul.Brookes@ons.gsi.gov.uk for further information.

The Government Statistical Service Statistical Policy and Standards Committee (GSS SPSC) met for the first time on 1 September 2008. News on the topics of discussion

from these meetings will be included in future editions of 3MOONS. Please contact Jan.L.Thomas@ons.gsi.gov.uk for further information.

## Secondments

MD welcomes applicants from UK government departments and other national statistics institutes for short and long-term secondments. Both organisations benefit from the knowledge-sharing and training elements these arrangements offer. Please contact Julie.Brown@ons.gsi.gov.uk for more information. Please visit [www.statistics.gov.uk](http://www.statistics.gov.uk) recruitment to see all current job vacancies in ONS.



# Introduction to ONS Geography

Nick O'Rouke

You've probably heard it said, 'Everything happens somewhere'.

It's therefore a short leap to realise that most statistics are linked with 'place' to some extent or another. In fact, geography is often the only common theme across different datasets. However, the UK's geography is complex and inconsistent, making it extremely challenging to produce and compare meaningful statistics by place, especially over time. So, to put it simply, the core business of ONS geography is to provide the geographic framework that underpins the majority of National Statistics in order to promote a harmonised, cross-departmental approach to the geographical aspect of statistics.

To do this, ONS Geography (ONSG) creates, maintains, develops and delivers:

- key geographic products, such as maps and digital boundary sets, geographical directories and databases (for example the NS postcode directory), area codes, place name reference material, and other geographic metadata
- high quality geographic support functions and services, which include a Geographical Information System (GIS) and cartographic service, sample selection and support for ONS surveys (via the Sampling Implementation Unit), the promulgation of best geographic practice, and the policy framework for geography in National Statistics

The cartographic service covers the presentation of maps in both static (print) and interactive (web) formats. This service, which is available to all business areas across ONS, ensures published maps are accurate, of a high quality and bring a consistent, corporate branding to all official publication maps.

ONSG's main customers are other ONS business areas, such as Census and Neighbourhood Statistics, and a wide range of other external statistical data suppliers. Strong links with some of these external organisations, for instance Ordnance Survey and the Royal Mail, are key in order to maintain the geographic intelligence required to provide a UK corporate geographic support service.

ONSG's aims are to:

- provide users with high quality geographic products and support services that meet their statistical needs, that are suitably flexible to meet changes in requirements and new topics
- provide a world class sampling frame for social and business surveys

- improve efficiency, consistency and quality through the promotion of geographic policy across ONS, NS and the GSS
- provide the UK statistical link on international geography issues
- introduce new structures, processes and methods that reduce the costs of these activities, without a material reduction in quality, while ensuring job enrichment and development opportunities for ONSG staff continue to align with ONS diversity and equal opportunities policy and practice

Specific and new areas of work for 2008–09 include:

- working with IM, Fujitsu and the Environmental Science Research Institute (ESRI UK) to implement the ONS Geographic Referencing Infrastructure (GRI) into the every day business environment. The GRI is a high quality, modernised corporate system for managing and disseminating geographic data and tools
- the provision of high quality geographic support and products to the 2011 Census
- further strengthening of links with ONS business areas and gaining a better understanding of their needs

If you have any queries for ONSG, the best point of contact in the first instance is always customer services at [ons.geography@ons.gsi.gov.uk](mailto:ons.geography@ons.gsi.gov.uk). They will either deal with you directly, or refer you to the right person.

If you would really like to know more about the separate business units within ONSG, or look at some mug shots of some of the staff (taken in younger years in some cases!), or if you wish to know details about the complexity of the UK's geography, may I recommend ONSG's very useful internet pages at [www.statistics.gov.uk/geography/](http://www.statistics.gov.uk/geography/).

# Recent MD conference presentations

## Baltic-Nordic Workshop on Survey Sampling Theory and Methodology (25–29 August 2008)

Weighting and estimation of sampling errors in the UK annual population survey

Martins Liberts (MD)

## RSS Conference 2008 (1–5 September 2008)

What is the matrix? Moving towards a new classification system for business surveys

Seasonal adjustment in the presence of bonuses

Census disclosure control - a risk utility evaluation

Census coverage assessment and adjustment - methodology, strengths and limitations

Census validation - edit and imputation methods

Census question testing - qualitative methods

Timothy Duke (MD)

Emma Hooper (MD)

Keith Spicer (MD)

Owen Abbott (MD)

Marie Cruddas (MD)

Ruth Wallis (MD)

## 7th International Conference on Social Science Methodology (1–5 September 2008)

Development of survey questions on sexual identity

Amanda Wilmot (MD),

Joe Traynor (ONS)

## The 5th Conference: Survey Sampling in Economic and Social Research (8–10 September 2008)

Evaluating methodological changes in the ONS business register and

Salah Merad (MD)

employment survey using a pilot survey

## British Society for Population Studies Conference 2008 (10–12 September 2008)

Towards a high quality 2011 census: the design of the census coverage survey

Understanding and measuring uncertainty associated with the mid-year population estimates

Owen Abbott (MD)

Joanne Clements, Ruth Fulton,

Alison Whitworth (MD)

## 5th Eurostat Colloquium on Modern Tools for Business Cycle Analysis (29 September–1 October 2008)

A painkiller for the revisions bite

Gary Brown, Duncan Elliott,

Nigel Stuttard (MD)

Craig McLaren and Robin Youll (ONS)

Tullio Buccellato and Julian Chow (MD)

**IAOS/Scorus Conference on 'Smart Data, Innovative Uses – Reshaping Official Statistics' (14–16 October 2008)** see article on page 2 for a summary of papers by members of MD and ONS colleagues.

### Correction to 3MOONS Summer 2008 edition

In the section on recent MD conference presentations under the '13th GSS Methodology Conference (23 June 2008)' heading, the following paper should have included the authors:

'New procedures governing the release of microdata from social surveys', Carole Abrahams (MD) and Martin Stringfellow (ONS).

### Your questions answered (*please send to 3moons@ons.gsi.gov.uk*)

In this issue, we've decided to ask you, the readers, for responses:

- What do you see as the most pressing methodological issue facing official statistics today?

Please send your answers and of course any questions, to 3moons@ons.gsi.gov.uk. Thanks again for all your queries, from home and abroad.

## The last word

I have written in previous 3MOONS about the impact of independence for MD, and this note gives an update.

Jil Matheson chaired the first meeting of the Government Statistical Service Statistical Policy and Standards Committee on 1 September. This is a new GSS Committee set up to take forward implementation of the new UK Statistics Authority Code of Practice, and the duty of the National Statistician under the new independence legislation to promote and safeguard standards, methods and quality.

The consultation period on the draft Code of Practice has ended and the Authority is considering the results. The Committee has suggested that further work in developing guidance under the new Code should be taken forward by GSS Task Forces on four topics:

- Planning across government
- Quality
- Confidentiality
- Presentation standards

Methodology will be heavily involved in the work on quality, including a proposed GSS quality strategy, and confidentiality.

The GSS is continuing its work in developing a self assessment checklist. Assessments against the Code are due to begin at the end of the year but in the meantime, the Authority is producing monitoring reports on statistics not defined as 'National Statistics', improving migration statistics, and longer-term statistical planning.

Stephen Penneck