

3MOONS

METHODOLOGY DIRECTORATE
LEADING THE DEVELOPMENT OF STATISTICAL METHODS

Welcome

This is the third issue of Methodology Directorate's (MD's) quarterly overview of methodological issues in the Office for National Statistics (ONS). The second issue covered aspects such as data capture methodology, confidentiality software, and National Statistics criteria. Read on for the latest news from MD.

What colour am I?

This competition will run and run (but hopefully not the colour!). We now have a name for the winter hue – the competition this time is to name the spring colour. The closing date is 30 June 2006. The winning entry will be announced in the next issue.

Please reply to: 3moons@ons.gov.uk

News

Marta Haworth retired as head of Analytical Methodology and Research Division in MD on 8 May. See the next issue of 3MOONS for more details.

Advisory committee meetings

MD hosted the tenth meeting of the National Statistics Methodology Advisory Committee on 4 May, in London.

Topics were:

- sampling and estimation strategies for the Wealth and Assets survey
- update on the UK Census Design and Methodology Advisory Committee
- 2007 Census Test Design: Sample Design
- small-area estimation of ILO unemployment for Parliamentary constituencies

See www.statistics.gov.uk/methods_quality/nsmac for past meetings and further details.

MD and Census jointly hosted the third meeting of the UK Census Design and Methodology Advisory Committee on 26 May in London.

Topics were:

- definitions (usual residence, visitors, and households)
- post-out issues (address list development, address checking methods, and hidden households)
- international review findings
- enumeration strategy
- selection of edit and imputation tool
- census quality strategy
- testing (Northern Ireland 2007 Test design, small scale test plans, and 2007 test evaluation plans)

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Minimising the burden on survey respondents

Survey Control Unit, part of MD's Quality Centre, seeks to minimise the burden that the Government Statistical Service places on those asked to comply with statistical surveys.

Goodbye Mike, Hello Martin

The Director of Survey Methodology Division leaves – his successor is Martin Brand.

The EURAREA project and SAE2005

MD's Small Area Estimation and Spatial Analysis Centres were well represented at SAE2005, the final project conference of the Eurostat-funded fifth framework EURAREA project, held at the University of Jyväskylä in Finland in August 2005.

Guidelines for measuring statistical quality

MD's Quality Centre has developed version 3.0 of the Guidelines for Measuring Statistical Quality.

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Minimising the burden on survey respondents

Survey Control Unit (SCU), part of MD's Quality Centre, has for many years sought to minimise the burden that the Government Statistical Service (GSS) places on those asked to comply with statistical surveys. As guardians of the Prime Minister's Instructions on Control of Statistical Surveys, and in line with the National Statistics Managing Respondent Load protocol, SCU are responsible for monitoring whether survey control procedures are being employed in all departments conducting statistical surveys.

Each GSS department nominates a Survey Control Liaison Officer (SCLO) who is responsible for ensuring that survey controls are correctly applied in their department (SCU act as the SCLO for ONS). The SCLO monitors survey activity and provides advice and guidance in their department. SCU

support SCLOs in the other departments and provide a networking function, conducting two or three SCLO seminars every year.

A key SCU role is producing an annual report on survey activity across the GSS, based on submissions from the GSS departments. The report on costs and activity during 2004/05 is now available on the survey control homepage on the ONS website (see link below). It highlights each department's annual compliance costs, number of surveys and most importantly, their burden reducing initiatives.

The Hampton Review

The work of SCU has become ever more important following the Hampton Review and associated Better Regulation Executive (BRE) initiatives which require all Government departments to measure and

then reduce regulatory burdens. However, as pointed out in the BRE publication, *Regulation – Less is More*:

'Some government bodies, such as the Office for National Statistics, already pay more attention than others to the burden they place on business. As a result, they may have less scope to reduce burdens than others and it can be argued that these bodies would be penalised relative to other departments were a flat rate target to be imposed across government.'

With the independence of ONS on its way, exciting times are ahead of us. SCU will adapt to the new governance, but in the meantime will continue to work towards reducing the burden on respondents across the GSS.



Further information on the work of by SCU can be found at:
www.statistics.gov.uk/about/data/methodology/quality/projects/survey_control.asp

Goodbye Mike, Hello Martin

Mike Hidioglou joined the ONS as Director of Survey Methodology Division (SMD) in MD in September 2003, after working for nearly 30 years at Statistics Canada. He left in March 2006, to take up a new position at Statistics Canada, and was succeeded by Martin Brand.

Mike's appointment to ONS brought great kudos to MD. He is highly respected in the world of statistics, with degrees from Carleton University and a PhD in statistics from Iowa State University, as well as being a fellow of the American Statistical Association and an elected member of the International Statistical Institute.

Throughout his career Mike has published widely in survey methodology, and has made many presentations at professional conferences. Some of his more recent work has included Developing Small Area Statistics for Business Surveys, with Paul Smith, which he presented at the SAE2005 conference in Finland, and Benchmarking through Calibration of Weights for Microdata, again in conjunction with Paul Smith.

During his time at ONS Mike made huge contributions to the directorate, raising the profile of methodology at the highest level, as well as providing innovative technical advice.

Mike said he had enjoyed his time at ONS and was impressed by the standard of work at the office, and would miss working with so many good people. Before leaving, he wished Martin Brand, the new Director for SMD, all the best, adding that he was confident that Martin would carry on the good work.

After being at ONS for nearly 12 years, Martin took up the reins as Director of SMD on 1 April. Prior to joining the office in 1994, Martin's statistical career was 'somewhat itinerant', experiencing different environments including statistical jobs in the National Assembly for Wales, Head of Statistics at Tesco (working out where to place new superstores) and before that as a lone specialist statistician for the Ford Motor Company in the UK.

Martin said, 'I have always had a strong interest in statistical methodology, although I am not sure I could write much algebra now! Having worked in the business areas I know how crucial MD's

work is. For a long time I have wanted to lead part of MD, and am delighted to have succeeded Mike'.

'Mike said he had enjoyed his time at ONS and was impressed by the standard of work at the office'

He added: 'I hope to build as strong a Survey Methods team as possible, and make the area a place where (like me) people are keen to come and work. As a very early first step I will be having a look at communication in SMD, including the introduction of regular cascades'.



Goodbye Mike!

'I hope to build as strong a Survey Methods team as possible'

Martin Brand



Guidelines for measuring statistical quality

The GSS is committed to providing users with information on the methods that have been used to compile its statistical outputs. This commitment is expressed in the *National Statistics Code of Practice*:

'Processes and methods used to produce National Statistics will be sufficiently detailed to allow users to assess fitness for particular purposes.'

The GSS has also declared its intention to provide information on the quality of statistical outputs in the National Statistics Quality Strategy:

'The quality measures for National Statistics will be systematically reported, alongside results and will enable [the user] to judge the suitability of their application for their intended uses.'

The Quality Centre in MD has developed Guidelines for Measuring Statistical Quality with the aim of fulfilling both of these commitments. Version 3.0 of the Guidelines was published on 28 April. This new version includes a section of quality measures for administrative data and also includes additional measures for effective sample size and mean revision.

The overall aim of the Guidelines is to outline best practice for measuring and reporting on the statistical quality of GSS outputs. They also provide a checklist of quality measures for use when measuring and reporting on the quality of statistical outputs. The emphasis is upon helping users to understand the:

- context in which the data were collected, processed and analysed
- methods adopted and limitations they impose
- reliability of the figures
- way they relate to other available data on the same subject

The measures can also be used by producers of official statistics to monitor data quality for the purpose of continuous improvement.

Version 3.0 of the Guidelines are available at:

www.statistics.gov.uk/qualitymeasures

If you have any queries regarding the guidelines then please email: quality.measurement@ons.gov.uk

The EURAREA project and SAE2005

MD's Small Area Estimation (SAE) and Spatial Analysis (SA) Centres were well represented at SAE2005 (www.stat.jyu.fi/sae2005), the final project conference of the Eurostat-funded fifth framework EURAREA project, held at the University of Jyväskylä in Finland in August 2005. SAE2005 was the culmination of a three-year programme of research coordinated by MD, involving six European national statistical offices and five European universities. The conference attracted over 100 delegates from all over the world, including many of the main academic contributors.

EURAREA explored performance and implementation issues for commonly applied methods of small area estimation, and the benefits that could be derived from enhancements such as spatial and temporal autocorrelation structures, complex sample designs and estimation of cross-classified datasets for small areas, such as population counts cross-classified by socio-economic characteristics. The project found that small area estimation had potential to play a major role in resource allocation at the European level since useful estimates can be made for very small areas (for example, levels 4 and 5 of the Nomenclature of Units for Territorial Statistics – NUTS – European area classification) using small area estimation techniques and model-based approaches in particular. There are however some technical issues that warrant further research.

A key question for European statistical offices is how small area estimation methods can be taken up more readily, given their relative complexity and the lack of available modules for implementing them in standard software packages. EURAREA tried to address this problem by providing:

- fully documented, open-source code in SAS and C++ that implement key SAE methods
- a reference manual for practitioners that discusses the methodology underpinning the software in detail

This information is available for download from:
www.statistics.gov.uk/methods_quality/eurarea

One of the main EURAREA findings is that it is technically feasible to simulate small area estimation statistical procedures and explore their performance on large population databases. This model of experimental design can be taken forward and applied outside EURAREA, and both the SAE and SA Centres in MD have used the same approach to developing and evaluating new methods since EURAREA itself came to a close. The results from the project have fed directly into MD's research into these methods and their application in ONS.



For more information about small area estimation and its application at ONS, contact Philip Clarke (philip.clarke@ons.gov.uk).
For more details about EURAREA, contact Martin Ralphs (martin.ralphs@ons.gov.uk) or Patrick Heady (patrick.heady@ons.gov.uk).

Inside MD

Statistical Training Unit

The Statistical Training Unit (STU) is based at the Newport and Titchfield sites. The unit is part of Quality and Corporate Management Division in MD. STU was formed in 2002 to provide corporate statistical training to ONS staff at all levels and, where appropriate, the GSS.

STU comprises:

Heather Gregory – Head of Unit

Kate Davies – Statistical Trainer

Richard Treloar – Statistical Trainer

Joanne Davies – Project Manager

Lindsay Russell – Project Manager and Quality Coordinator

The work of STU falls under the Identification and Development of Statistical Training Project which forms work package 7 of the Learning and Development Programme. The project's aim is to develop and implement a corporate Statistical Development Framework for ONS. The framework aims to identify, develop and implement:

- statistical learning required by staff within the Research and Analysis job family – this will provide a clear route for progression through the job family,

linked to learning activities

- a clear learning route for staff outside the Research, Analysis and Statistical (RAS) job family who are looking to obtain the qualifications that allow entry to the RAS job family
- a framework of statistical learning for staff outside the RAS job family who require development in certain statistical competences at different levels to progress within their current job families

To date the unit has:

- developed a statistical training catalogue for members of the RAS job family
- developed and implemented the Methodology Workshop Programme, which allows staff to discover more about the methodologies used throughout ONS
- piloted an A Level in Mathematics and Statistics at Newport which allows successful staff to progress to the RSS Higher Certificate, which in turn will provide an entry route for holders of this qualification to the RAS job family
- begun a review into the structure of the RSS Higher to make it more accessible to staff
- continued to deliver and improve the RSS Ordinary Certificate and increase its availability to ONS staff at all sites

- recognised the need for – and in the process of developing – a Numeracy Skills Course, which will strengthen basic numeracy skills, initially in Business Data Division

The unit is committed to providing statistical training excellence. In pursuit of this, STU has developed the Quality Evaluation and Standards and Guidance project. This involves implementing standards and guidance to evaluate all aspects of the training courses offered by STU, including ensuring all courses are delivered to a high standard and monitoring how the learning has been implemented in the workplace to improve efficiency.

Members of the unit are involved in professional skills in Government and have played a leading role in developing the Research, Analysis and Statistical Competency framework. They will also be assisting in the roll-out of the Continuing Professional Development Catalogue of Learning Activities and developing generic Position Profiles for MD.

For further information about any STU courses please contact

statistical.training.enquiries@ons.gov.uk

or visit our website at

www.statistics.gov.uk/about/ons/training

NEWS

MD GSS forum meeting

Topics for the 18 May 2006 meeting of the National Statistics Quality and Methodology Programme Board, hosted by MD, were:

- ONS independence
- ISO quality management standards
- European Foundation for Quality Management model
- Quality improvement programme
- European code of practice
- Data matching policy
- Statistical disclosure control strategy for ONS tabular outputs

Future conferences

Third International Conference on Establishment Surveys (ICES-III)

Deadline for abstracts is 15 June 2006. The conference theme is *Survey Methods for Business, Farms, and Institutions* and will be held in Montréal, Canada from 18 – 21 June 2007.

Eleventh Government Statistical Service Methodology Conference

This year's conference is on *Statistics for Funding Allocation*, and will be held on Monday 26 June 2006 at The Victoria Plaza Hotel in London. Please contact methodology@ons.gov.uk if you are interested in attending.

What colour am I?

Last issue we asked for a name for the winter newsletter colour. Thanks for all your entries, from home and abroad. I'm glad to announce we have a winning name – **Apollo** – and a winner, or two winners in fact. **Karen Williams**, from the Quality Centre in MD, and **Andrew Nash**, from Neighbourhood Statistics, also ONS, share the chocolaty prize.

Your questions answered

What would you like to ask Methodology Directorate? Questions can be on methodology, organisation, plans, or any other topic we can (briefly!) answer.

Please send your questions to 3moons@ons.gov.uk. We will choose one or more to answer in the next issue.