



# 3MOONS

METHODOLOGY DIRECTORATE  
LEADING THE DEVELOPMENT OF STATISTICAL METHODS

## Welcome!

To the first issue of 3MOONS, Methodology Directorate's (MD's) quarterly newsletter. MD is led by Cynthia Clark and comprises 125 staff in three divisions:

- Analytical Methodology & Research (Marta Haworth)
- Quality & Corporate Management (Frank Nolan)
- Survey Methods (Mike Hidioglou)

MD's mission is to reinforce the quality of National Statistics by leading the development of statistical methods and expert advice. The purpose of 3MOONS is to let you know how we are doing this, and to give you a better understanding of the people who work here.

## News

### Advisory committee meetings

MD hosted the ninth meeting of the National Statistics Methodology Advisory Committee on 6 October 2005 at Drummond Gate. The members – specialists from academia and government – meet bi-annually to advise on methodological issues from across National Statistics.

#### Topics discussed:

- significance-testing of ONS revisions
- challenges from implementing SIC(2007)
- weighting in the National Travel Survey
- 2007 Census test-sample design
- disclosure issues from health statistics review

MD and Census jointly chair the UK Census Design and Methodology Advisory Committee. The second meeting took place on 13 October in London. A mix of academics and government representatives (devolved and local) act as advisors and co-ordinators – commissioning advisory work when it is not practical to discuss the issues at the meeting itself. The agenda covers a mixture of methodological and process issues relating to the 2007 Census test and the 2011 Census.

### GSS forum meeting - review

Hosted by MD, the National Statistics (NS) Quality and Methodology Programme Board meets quarterly to raise cross-cutting methodological issues and promote best practice. The board, which consists of representatives from ONS and other government departments, has a remit to establish and monitor an effective NS quality assurance system. The aim is to generate improvements to, and greater public confidence in, UK official statistics.

#### Topics for the last meeting in August:

- Cost Benefit Analysis
- Administrative Data Project
- Survey Charter
- Prime Minister's instructions for Survey Control
- NS issues
  - Self-Assessment Tool
  - Quality Strategy
  - Framework
  - Quality Reviews

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## Why '3MOONS'?

There are three reasons why we have chosen this name for the newsletter. The first person to guess all of them will get a prize; but more importantly, they will get a mention in the second issue when the answers will be revealed! Please email your entries to [3moons@ons.gov.uk](mailto:3moons@ons.gov.uk)

# Quality Reports for statistical outputs

The Statistical Quality arm of the Quality Centre has produced three types of Quality Report (see table right) to accompany statistical outputs.

The reports are based on appropriate quality measures taken from Guidelines for Measuring Statistical Quality ([www.statistics.gov.uk/StatBase/Product.asp?vlnk=13578](http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13578)), in particular on the eleven Key Quality Measures (KQMs) essential to understanding output quality.

The first Summary Quality Report was published on 30 June, to accompany the Gross Domestic Product First Release, and some Basic Quality Information elements were included in the Quarterly National Accounts First Release.

The requirement for Quality Reports is laid down in the *National Statistics Code of Practice* and the *Protocol on Quality Management*. The work also responds to a suggestion by the Statistics Commission that ONS outputs should be accompanied by 'usability statements' containing concise statements, written by government statisticians, of their understanding of the uses to which the data are likely to be put, together with any limitations that the data might have in relation to these uses.

Quality Reports will now be rolled out across the office, following positive feedback from both internal and external consultations, and endorsement by the Statistical Policy Committee.

If you would like to know more please contact either Jane Birch (75 5902, [jane.birch@ons.gov.uk](mailto:jane.birch@ons.gov.uk)) or Heather Gregory (72 3171, [heather.gregory@ons.gov.uk](mailto:heather.gregory@ons.gov.uk)).

Report	Includes...
<b>Basic Quality Information</b> Release-specific quality information. Aimed at external users. Part of the statistical output.	Release-specific KQMs. Key issues for the release, including warnings about common pitfalls in interpreting data. Link to the web-based Summary Quality Report.
<b>Summary Quality Report</b> Standard quality information. Communicates reliability and quality issues in an accessible way to a broad external audience, including non-expert users. Available on the web.	A summary of quality based on the six quality dimensions of the European Statistical System: <ul style="list-style-type: none"> <li>• relevance</li> <li>• accuracy</li> <li>• timeliness and punctuality</li> <li>• accessibility and clarity</li> <li>• comparability</li> <li>• coherence</li> </ul> Also includes a summary of methods.
<b>Full Quality Reports</b> Internally, these will be used to support sign-off outputs, and to accompany data to avoid data-checking duplication. They will also be available externally for more expert users.	All output-specific quality metadata available on CORD. Quality information based on the <i>Guidelines for Measuring Statistical Quality</i> .

## MD statistician enjoys prize visit to South Africa

Martina Portanti, of Sample Design and Estimation, recently won a trip to a Commonwealth statistical conference in South Africa

Martina found about the fourteenth Conference of Commonwealth Statisticians from an email circulated to Newport's Statistical Graduate Group. 'There was an essay competition on the theme, "Statistics for a more equitable society"', she recalls. 'Statistics South Africa offered an expenses-paid trip as the prize. I trimmed my MSc thesis from over 200 pages down to 20, and sent it off in June'.

In August Martina found that her essay, "Multilevel Analysis of Unmet Need for Contraception in 19 African Countries" had won second prize in the international category, and so at the start of September she was on her way to Cape Town.

'The conference is held only once every five years, and is aimed at senior government statisticians, so it was very interesting for me to get the broader perspective. Both developed and developing countries were represented, and a wide range of issues was discussed. The conference demonstrated the contrasting challenges faced by developed and developing countries in the 21st century,

and how valuable it is to share knowledge across the globe.'

'I also met a number of other UK participants – including Jill Matheson, Tim Jones (ex-Methodology Director, retired in 2000), and Siobhan Carey (ex-ONS, now Department for International Development) and a very nice group of young statisticians from South Africa.'

Martina, who has worked for ONS for eight months (after applying via the Internet), has now settled back down to developing and testing methodology for the Business Register & Employment Survey, and living in Roath in Cardiff. 'I really enjoyed the conference, and would encourage anyone else to try their luck in a similar situation. You never know what might happen!'

If you would like to see Martina's winning essay, please contact her on (72 6223, [Martina.Portanti@ons.gov.uk](mailto:Martina.Portanti@ons.gov.uk)). The essay focuses on women with an 'unmet need for contraception' – those with a partner, of reproductive age, not using contraception,



Martina in South Africa.

who declare they either want no more children or none for at least two years. By using multilevel analysis of survey data for 19 African countries from 1997 to 2001, Martina outlines how use of contraception in Africa depends on not only on women's characteristics (age or education) but also on countries' socio-economic contexts (degree of gender equality).

*"The conference demonstrated the contrasting challenges faced by developed and developing countries in the 21st century..."*



# A new quality-assurance tool

MD aims to lead the development of 'National Statistics built on a solid foundation of reliable, innovative methodologies that command respect worldwide.' Recording change will help MD to realise the key strategic goals of:

- assuring quality
- building trust
- seeking out best practice
- forging partnerships

The importance placed on quality assurance is evident throughout the National Statistics Framework. Quality statistics depend on quality-assured statistical methods and related processes. The National Statistics Protocol on Quality Management states that our statistics, 'must be published using documented quality management and assurance processes in the development of new and changed outputs, prior to their production.'

Quality assurance is an important responsibility for a centralised methodology team. It allows business areas and MD to share the role of effectively managing changes to statistical and survey methodologies; as well as building sources and outputs from sound methods and tools. This demands best practice at all stages.

A database has been designed to manage quality assurance work-requests in MD's centres of expertise. This will assure the Executive Director that Methodology and the business area have checked the quality of any new or changed methods. At the same time, the National Statistician will know that the best possible methods are being used. Further, it will ensure that MD and business areas agree both the changed methodology and first live results of this change. This process is critical if the National Statistician is to have the information she needs regarding the introduction of such methods and their effects on our outputs.

As part of the implementation of the database, the quality assurance guidance (on the standards and guidance database) has been revised and updated. The benefits have been described in a series of Daily articles. A final article will highlight the changes to the guidelines and provide a link to the database. **The Quality Centre is offering support for using the database. Please contact David Matthewson (72 2629, david.matthewson@ons.gsi.gov.uk).**

## Public confidence in official statistics

The Office for National Statistics (ONS), in collaboration with the Statistics Commission and the rest of the Government Statistical Service (GSS), has over the last 18 months been working on a project to build a better understanding of the British public's confidence in official statistics

Data Collection Methodology's (DCM) involvement was twofold. Firstly, to collect the public's views about official statistics, and secondly to develop a quantitative measure of public confidence suitable for inclusion as a module on the ONS Omnibus Survey. Both strands were part of a broader commissioned programme of work on public confidence in official statistics. Other strands included research to identify issues relating to confidence in official statistics in other countries, and a qualitative study of opinion formers' views of official statistics.

Developing a quantitative measure began with desk research into other work on confidence, trust and perceptions of government delivery; there had previously been relatively little research on public confidence in official statistics in the UK, or in other countries. This, together with findings from the first four focus groups, informed the design of a module of questions. This was tested using cognitive methods, before its inclusion on the July 2004 and subsequently March 2005 Omnibus Survey.

Nine focus groups, (70 participants), across England, Scotland and Wales, were used for the stand-alone qualitative investigation of the general public's views. These groups were divided between more-highly educated (above A-level) and less-highly educated people. The research had three specific aims to:

1. Gain an understanding of the nature of public confidence in official statistics.
2. Gather the public's views about the trustworthiness of statistics.
3. Consider the implications of the public's views, and what can be done to address any issues identified.

Using the results, ONS is working with colleagues across the GSS to develop a strategy that will build confidence in official statistics.

For more details please refer to: [www.statistics.gov.uk/about/data/public\\_confidence](http://www.statistics.gov.uk/about/data/public_confidence)

# Inside MD

## Time series analysis – explained

Time series analysis uses techniques that include seasonal adjustment, trend estimation and forecasting to produce robust and reliable estimates. By removing the seasonal and calendar effects, we are able to give users a clearer picture of how a measured phenomenon is changing over time.

### Our aims

- promote the consistent use of best practice for time series analysis in ONS and the wider GSS
- produce the best seasonal adjustment and, where appropriate, trend estimation to give a clearer picture of a time series' underlying short-term behaviour

- advise on quality and continuity of a time series by interpolating missing values, identifying outlying values, or forecasting new values

### Our work

- annual review of the seasonal adjustment carried out by each of ONS's business areas
- promoting and supporting ONS in the transition from the current time series software package (X11 ARIMA) to the more advanced package (X12 ARIMA)
- training GSS users of time series analysis
- research and consultancy in time series methods, techniques and projects including producing early estimates, the use of trend estimation and analysis of revisions

### Us

We are a friendly and sociable branch, enjoying regular lunches out together alongside sharing our culinary skills in the office. This liveliness has secured us a reputation as the 'talk shop branch', yet we work hard and it seems we are leading MD in more ways than one, with 10 Gold Standard documents on STaG!

Nigel Stuttard is our branch head and has been since late 2003, before which he worked in Labour Market Division. His team are: Claudia Annoni, Fida Hussain, Duncan Elliott, Ross Meader, Anita Visavadia and Tanya McCormack.

## NEWS

### Recent publications

*Making a Population Estimate in England and Wales*, by Julie Jeffries and Ruth Fulton, is the 34th in the National Statistics Methodological Series. Contact Anna-Marie Jones (75 6247, Anna-Marie.Jones@ons.gov.uk) for more details. This publication is only available electronically at: [http://nswebcopy/downloads/theme\\_population/Making\\_PopulationEstimate.pdf](http://nswebcopy/downloads/theme_population/Making_PopulationEstimate.pdf)

The 56th issue of *Survey Methodology Bulletin* contains the following papers:

- 'Development of an Integrated Household Survey for the UK (the continuous Population Survey) from a data collection perspective: improving survey questions and the quality of data output.' by Alison Blackwell and Abigail Dewar
- 'Should we move from household surveys to individual surveys?' by Paul Allin
- 'Evaluation of the use of household survey data on spirits consumption for estimating the level of spirits fraud' by Eileen Goddard and Simon Compton
- 'Assessing the quality of administrative data' by Marilyn Thomas
- 'Designing sampling strategies for qualitative social research: with particular reference to the Office for National Statistics' Qualitative Respondent Register' by Amanda Wilmot
- 'Recruiting respondents for a qualitative study of the availability of local unit level business data' by Kim Ursachi and Jacqui Jones

Contact Hayley Higgins (72 3365, [Hayley.Higgins@ons.gov.uk](mailto:Hayley.Higgins@ons.gov.uk)) for more details or to order copies.

### Future conferences

#### Statistics Canada Symposium 2005 'Methodological Challenges for Future Information Needs' 25 – 28 October 2005

Will include: *Redesigning ONS's Business Register and Business Surveys to Enable Production of Better Economic Statistics* presented by Paul Smith (SD&E).

Markus Šova (Index Numbers) will present a paper on *Variance Information for Data Users*.

#### 2005 Federal Committee on Statistical Methodology Research Conference: 14-16 November 2005

Will include: *Integrated Re-development of the ONS's Business Surveys and Business Register through the Business Surveys Integration Project and Register Re-engineering Project*, presented by Mark Pont (SD&E).

Abstracts and papers are sought for:

#### European Conference on Quality in Survey Statistics (Q2006) Cardiff 24 – 26 April 2006 (closing date: 7 November 2005)

#### Third International Conference on Establishment Surveys (ICES) Montreal (Canada) 18 – 21 June 2007 (closing date: 1 December 2005)

## 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](mailto:3moons@ons.gov.uk). We will choose one or more to answer in the next issue.