



SPRING 2010

# 3MOONS

METHODOLOGY DIRECTORATE  
LEADING THE DEVELOPMENT OF STATISTICAL METHODS

## SPRING 2010

After a short break, 3MOONS returns with a special extended spring edition

### Advisory committee meetings

TMD hosted the 17th meeting of the National Statistics Advisory Committee on 24th November, 2009 at Myddleton Street, London. The topics discussed include:



- the relative cost of public services
- constructing an easter regressor for stock series
- modelling the UK labour force survey using a structural time series model
- measuring the level of duplication in the 2011 census, and issues associated with estimating.
- summary of the approach to the Census Coverage Survey Rehearsal, 2009, including a comparison to the previous census
- an update on the methodological issues relating to coverage assessment
- an update on the the sampling methods that will be used for the estimation of multiple returns for the same individuals
- an overview of the methodological approaches being taken by Northern Ireland Statistics and Research Agency, and the General Register Office for Scotland.

The UK Census Design and Methodology Advisory Committee met on 22nd September, 2009. The topics discussed include:

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## Bronwen retires after 37 years of service

Bronwen Coyle has recently retired from her post as branch head of MD's Quality Centre, after 37 years service. Bronwen first joined the Business Statistics Office (part of what became ONS) in January 1973 as a direct entrant Executive Officer. With a degree in English Literature, but no maths O level, Bronwen was initially apprehensive about the prospect of statistical work. Despite this, she found she very much enjoyed working on surveys. In particular she liked finding out the reasons for peculiarities in the results and the sense of achievement from producing something as quickly and accurately as possible. She worked on quite a wide range of business surveys, but posts she most enjoyed were in the Retail Sales Index team (in the days when the same team saw the work through from start to

finish); and being in the Short Term Production Statistics Analysis section, where the work was extremely varied.

When work had to be transferred from the office's Runcorn site to Newport, Bronwen was on the project board that was co-ordinating the move. She had responsibility for moving the collection of employment information in the services sector, and the subsequent production of those results. She has left an unintentional legacy from these days in the form of the curiously named 'GAPS' survey..... it filled in some of the gaps in the data sources that were transferred down, and the name stuck!

Later, Bronwen was responsible for achieving a structural change for the Overseas and Financial Statistics Division. The work and staff had to be divided into separate branches for data collection/validation and results, producing considerable efficiencies along the way. This was something she found very rewarding, despite the personal challenges it brought with it.

For the last seven or eight years, Bronwen has worked in the Quality Centre and Survey Control Unit within Methodology Directorate, where the subject matter has been very close to her heart.

We would like to wish Bronwen a long and happy retirement!

## Recent Publications

The following articles were recently published in MD's journal 'Survey Methodology Bulletin' (SMB):

- Interpreting Official Statistics in the Presence of Sampling Error - John Wood, Neil Parkin, Markus Sova and Martin Brand
- Managing Multi Mode Collection Instruments in the 2011 UK Census - Frank Nolan, Heather Wagstaff and Ruth Wallis
- Online Opinions - A Pilot to Extend Social Data Collection Capabilities within the Office for National Statistics - Kathryn Ashton and Ed Dunn
- Celebrating Forty Years of the Survey Control Unit - Sarah Green

## Recent Conference Presentations...

The Young Statistician's Conference aimed at statisticians in the early years of their career, took place at the University of Liverpool on March 30th-31st, 2010. The following presenters went along from MD:

- Rob Shone discussed random selection in business surveys
- Angharad Walters discussed discontinuity in construction statistics
- Matt Greenaway discussed calculating standard errors for ONS' Labour Force Survey

Ria Sanderson, Clare Horscroft, Amy Large and Claire Dobbins recently delivered a presentation at an event in London for members of the Government Operational Research Service (GORS). Their presentation gave some background to ONS, explaining the structure of the Statistical Value Chain and more specifically, some projects

that have been worked on by GORS members. The event was held last December and was part of a series known as 'stORe' events. The purpose of these stORe events is to showcase the work and the working environment of a given department by GORS members. Each event typically runs for a whole day and is comprised of three departments giving short talks. This was the first presentation delivered by ONS at one of these events. It was a good opportunity to display what ONS is about and how that filters down to project management on a day-to-day basis. The event received good feedback from attendees and a raised awareness of ONS as a member of GORS.

## Conferences Coming Soon...

The 15th Government Statistical Service (GSS) conference will be held on Thursday, 1st July, at the same venue as last year, the Church House Conference Centre in Westminster, London. As always the conference is a one day event with a mixture of plenary and parallel sessions covering a wide range of topics related to the work of the GSS. This year we are including a poster session with a wine reception. The programme for the conference has now been finalised, and there is a wide mix of presentations following the conference theme 'Making data work harder'. The keynote speakers will be the National Statistician, Jil Matheson and the president of the Royal Statistical Society, Professor David Hand.

This is a good opportunity to meet people, promote your work, share experiences and findings with others and get feedback from peers.

Registration for the conference is still open and will close on the 6th June. For more details on this year's conference please go to: <http://www.ons.gov.uk/about/newsroom/events/fifteenth-gss-methodology-conference--1-july-2010/index.html>

## Graham gives an update on DIME

Graham Jenkinson gives 3MOONS an update on MD's involvement in DIME...

Within Europe, there has been a long-standing arrangement for Directors' Groups within National Statistics Institutes to meet for strategic discussions about their work programmes. To date there have been three major groups: Business Statistics; Social Statistics, and National Accounts. Recently a fourth group has been established for Methodology; this group has become known colloquially as DIME. DIME is supported by a smaller steering group that is made up of representatives from the more actively involved countries, including the UK. I have been representing the UK on both the steering group and the main DIME group, and recently attended DIME's second main annual meeting in March.

Following the meeting, I was left with the impression that steering group representatives are passionate about methodology, which is given a high profile within the statistical governance of their respective countries. Members of the main DIME group are quite diverse in the way that their countries' governance and methodological approaches are organised. Within the group, there is a high level of enthusiasm for methodological work, but there is also scope for raising the profile of methodology within Eurostat operations.

There are a number of key issues currently faced by DIME. One is the need to raise the profile of methodology. One option here could be to move towards the UK model where MD has to be consulted when changes are made by the statistical areas.

The main strategic issue for DIME is reacting to Eurostat's new vision for statistics in the European Statistical System (ESS). This focuses on obtaining the best statistical estimates for Europe. This may lead to very far ranging changes including the selection of European samples, and processing of them in a European data warehouse, however the detail is still to be decided. There is potentially a lot of work on this methodology.

DIME also needs to oversee the ESSNet research initiative, acting as advisor on priorities for the budget and reviewing progress on behalf of the ESS Committee of Directors of NSIs.

There is the potential for DIME to make a substantial strategic input into the ESS. The next step is to build on the discussions that have taken place so far and turn them into actions.



## Andy returns from SNZ

**Andy Fallows got back from Statistics New Zealand (SNZ) just over half a year ago, and has been telling his colleagues about NZ ever since...so what was it really like and how does it compare to ONS?**

Not surprisingly the work is very similar to ONS. It stands to reason really as the basic challenges that national statistics offices face, such as measuring GDP or counting the population, are essentially the same. I didn't work on business surveys whilst I was in NZ, so I can't really comment on how they compare, but having worked on social surveys in both organisations, the methodology is often very similar.

One thing that does differ is the respective sampling frames – in NZ selected Primary Sampling Units (PSUs) are enumerated each time they're used, whereas in the UK an address file from the Royal Mail is used. There is a large difference in the populations of the two countries and how this population is distributed, and this obviously affects how households are sampled – in the UK there is less concern about whether selected PSUs are actually accessible!

There is more of an international feel in the SNZ office and meetings can often be of two extremes – sometimes I had meetings purely consisting of ONS secondees (really), and others where virtually every continent on the planet was represented.



Andy Fallows on secondment in New Zealand



Example of non-accessible Primary Sampling Unit in New Zealand

On a personal level, living in Wellington was fantastic. I was able to walk to work in about 10 minutes along the waterfront (which compares rather favourably to 45 minutes on the number 30 bus), and on a couple of occasions I even saw a penguin!

Being in a country where you don't know many people means that you have a lot less commitments, and so a lot more free time to explore the country. It certainly contributes to a much more laid-back lifestyle. My personal highlights of being in NZ were walking over a glacier, jumping into a fjord from the back of a boat, cycling around the East Cape, and experiencing a Hangi (the food was amazing!). Did I mention that it's sunnier over there?

I now find myself now referring to New Zealand as 'that country on the other side of the world', because if the name 'New Zealand' comes out of my mouth, I instantly get a chorus of groans, generally followed by nodding and smiling.



# 17th Methodology Forum

The 17th Methodology forum was organised by Phil Lewis (Index Numbers), Hollie Palmer and Claire Dobbins (Sample Design and Estimation branch). Here they share with us their experiences as organisers and give us a snapshot of how the day went...



Gareth James presenting a session at MD's Methodology Forum

The 17th Methodology Forum was held at the Newport office on Wednesday 18 November 2009. The day-long forum is run twice a year and is a good networking opportunity for MD staff of up to SEO equivalent grade from all three sites.

At the forum there was good representation of branches from across the whole of the directorate. Invitation to the buffet lunch was also extended to include all of Newport Methodology Directorate which allowed networking with a wider range of colleagues.



Begoña Martin presenting a session at MD's Methodology Forum

Sessions included an update from the Learning and Development group by Dan Lewis and information about standard setting of performance expectations by Gareth James and Heather Gregory. John-Mark Frost, Jennifer Ford-Evans and Amy Large promoted the assistance and advice that is available from the Researchers, Analysts and Statisticians (RAS) group.

Begoña Martin and Andy Fallows talked about their experiences and benefits gained from their secondments to Statistics Canada and Statistics New Zealand respectively. They both compared working practices to those of the ONS and the new skills they learnt. Begoña and Andy both thoroughly endorsed secondments as a great personal experience that provides opportunities for both travelling and career development.



Highly engaged attendees at MD's Methodology Forum



# Stephen Penneck, ONS' first Director outlines his vision for ONS and MD

Since the last edition of 3MOONS ONS has undergone a few changes. Last September Jil Matheson replaced Karen Dunell as National Statistician. This change also saw the creation of the new role of Director General of ONS, who reports directly to the National Statistician. Stephen Penneck, previously director of Methodology Directorate (MD), took up the new role of Director General last November. Here Stephen shares with us his thoughts on his new role and his vision for both ONS and MD.....

It is not unusual for a head of methodology to become head of a statistical office – I remember when Bill McLennan became head of CSO, and he had been a methodologist in Australia. Nonetheless it was with some trepidation and quite a sense of excitement that I took over the role of Director General in ONS.

This is quite a new job, set up when Karen Dunnell retired and Jil Matheson was appointed as the National Statistician; but on the basis that although she is my boss, Jil would not have day to day responsibility for ONS. So I have a separate accountability to the ONS Board (on which Jil sits, but which is a committee of the Statistics Authority).

Taking on this job is a tremendous opportunity to set my mark on our development and there are several things I want us to do. Firstly I want to ensure ONS is an exemplar in abiding by the new Code of Practice, and is learning from the initial assessments. The early evidence is that we will have to do more to publish metadata, on publication standards and on dialogue with customers, but in other respects ONS is doing a very good job. The second thing, which I have started, is to refresh ONS's vision: making ONS the place where people come first for trusted statistics. This is very much a customer focussed vision; working with customers to earn their trust so that ONS is the natural place they turn to for statistics on the economy and society. To help us to achieve this, and to face the challenge (together with all government departments) of

what is likely to be much reduced budgets over the next few years, we are renewing our focus on staff engagement. Our People Survey shows some progress from last year but we still have some way to go to be among the highest performing departments. This will pay dividend for us – better job satisfaction, more efficient and effective working, and better service for customers.

So what does this mean for Methodology? The Methodology vision is well aligned to the new ONS vision. Methodology aims to raise trust in official statistics and takes a prime statistical leadership role in the office, and in the GSS.

Some of the aspects of the new ONS vision will be particularly for MD to help take forward. The need for better customer understanding of the quality of statistics; developing statistical skills and leadership; the continued thrust for innovation and value for money are all areas where MD has particular expertise and experience. In addition, MD together with other corporate services and IM, will want to think about what a more customer focused office will need to enable them to take the vision forward. Statistical areas will be receiving more feedback from customers and thinking through the impact on their business plans. They will want statistical advice on this. Similarly statistical areas are likely to be looking for more customer focused internal services to support them.

All this needs some thought. In my time in MD I was always impressed by the creativity and adaptability of methodologists. I was very impressed by the work done to support our economic statistics through the recession. The work done to support the census has been fundamental in providing confidence around the resulting population estimates. I see MD as key to meeting the challenge ONS faces for the future and have no doubt it will rise to this challenge with enthusiasm.

## ONS business surveys go online

Respondents to ONS business surveys have been known to ask "when will I be able to return my data via the internet?"...

Using the web as means of sharing information is no new phenomenon. However, developing online surveys carries complications such as maintaining data quality, confidentiality, validation, and a whole range of other issues. Catherine Bremner of MD's Data Collection Methodology branch has recently been involved in ONS's first online business survey. Here she tells us a bit about the process.....

The Office for National Statistics (ONS) has recently developed an online version of the Capital Expenditure (Capex) Survey. Capex is sent to selected UK businesses on a quarterly basis and asks for a breakdown of their purchases and sales of assets during the survey period. The online version has been launched as part of a pilot exercise which sent the web-based questionnaire to a sub-sample of selected businesses. Prior to this, respondents were only able to return their data either by paper questionnaire or via ONS's Telephone Data Entry (TDE) system.

The total sample for the Capex survey is 25,000. As part of the pilot exercise 20,000 businesses were sent only the paper questionnaire, 4,000 businesses were given the option of either returning their data via the internet or paper questionnaire, and 1,000 businesses were asked to return their data via the internet.

An extra question was added to the paper questionnaire asking respondents which mode they would prefer to use to return their data. There is no point making respondents return their data via the web if they would prefer a paper questionnaire. This course of action could have a detrimental effect on response rates which in turn will increase burden and costs for ONS.

The internet survey has been developed following current best practice from research articles. It has been possible to introduce several design features including: a secure login system; a opening screen defining Capital Expenditure; one-two questions per page which will help reduce non-response, and a progress bar. Internet surveys also have the added bonus of being able to build in certain validation processes. This can be things such as not allowing the respondent to progress to the next page until they have answered all questions on the current page. For the pilot exercise however, the decision was made to include only minimal online validation. This is because research suggests that some validation procedures can potentially have a negative affect on response rates. At this stage ONS wants to provide respondents with a good experience of using the internet.

The early indication is that the pilot exercise has been both educational and successful. The next step is to identify any lessons learned. This will help to guide the process of rolling out this method of data collection in a way that meets the needs of respondents, as well as providing ONS with benefits in terms of data quality and cost.

## There's more to STU than courses...

The Statistical Training Unit (STU) are a small but busy team of five based in Newport and Titchfield. On the team are Gemma Hamilton, Lynda Loughlin, Julie Owens, Richard Treloar in Titchfield and Branch Head Heather Gregory. STU are responsible for co-ordinating and delivering statistical training across ONS sites. Courses available include Numeracy, RSS Ordinary Certificate, A-Level Maths and Economics, Statistical Analyst Scheme, the ONS Methodology Workshop Programme and the MSc in Official Statistics. STU are also involved in other projects; at the moment the team are being kept busy with a project which aims to improve the analytical skills of ONS staff in the Operational Delivery Profession. Heather tells 3MOONS a bit more about the project and STU's involvement...

In December 2009, Sally Evans (ONS Head of the Operational Delivery Profession) launched ONS's 'Operational Delivery Profession'. A workshop was held to create a three-year action plan in order to improve the profile of this profession in ONS. One of the actions identified at the workshop was the lack of a career path for Operational Delivery staff. STU had already commissioned Government Skills to conduct a Training Needs Analysis (TNA), so this work was taken forward as part of the solution.

The TNA focuses on the training needs of staff providing analytical and statistical support within the Operational Delivery Profession. Staff across all ONS sites are being interviewed and contributing to this work through:

- direct observation,
- questionnaires,
- interviews with staff and line managers,
- interviews with current training providers and other professional groups, and
- focus groups

In addition to the TNA, Government Skills are analysing:

- statistical data to support the qualitative findings produced from the TNA,
- links between academic and vocational courses and the qualifications needed to fulfil job roles,
- learning and development policies and the provision of career advice,
- how the Programme of Statistical Training supports learning and development through levels of the Operational Delivery and RAS Professions,

- competency frameworks and position profiles for Operational Delivery and RAS,
- TNAs already conducted by business areas,
- measures of successful performance and benchmark levels, and
- data on movement of people from Operational Delivery into the RAS job family over the last several years

On completion of the analysis, Government Skills will make recommendations on the most suitable qualification and delivery method to meet ONS business, professional and individual needs. The final report and recommendations will be agreed by ONS before sharing them with other stakeholders. As this project is aligned with the Government Skills wider agenda, the findings can then be applied across government wherever Operational Delivery staff are doing statistical work.

The project is managed by a steering group, chaired by the Head of Profession for Operational Delivery (Sally Evans) and with representatives from the Statistical Training Unit, HR, the GSS Statisticians in Government team and Government Skills.

**Your questions answered** (please send to [3moons@ons.gsi.gov.uk](mailto:3moons@ons.gsi.gov.uk))

Please send any questions or comments you have to [3moons@ons.gov.uk](mailto:3moons@ons.gov.uk). Thanks again for all your queries, from home and abroad.