Household Surveys for UK Government: Building on Survey Integration

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Introduction

In the past decade or so the UK has witnessed an increased need for survey information to support policy information needs in government. Sometimes these needs can be met through minor modifications to the design of existing surveys, or new surveys can be set up in order to collect the necessary information. However, both approaches are generally expensive and sometimes inefficient. In trying to minimise these inefficiencies the UK Office for National Statistics (ONS) has adopted a more pro-active approach to conducting household surveys in which flexibility and integration are key principles.

This paper discusses how the household survey strategy in the UK Office for National Statistics has taken on board a number of new survey requirements based on the principle of integration rather than designing new surveys in isolation. It starts with some background information about ONS and its place in the UK Government Statistical System (GSS). It then goes on to describe a strategy for household surveys which is underpinned by principles of survey integration in order to realise statistical and efficiency benefits. The key vehicle to implement this strategy is the Integrated Household Survey, which realises the integration principle by offering a flexible, modular survey system. The final part of the paper describes how the principle of integration can be applied to new survey requirements, and discusses the benefits of this approach for survey customers.

The Office for National Statistics and its Role in the UK statistical system

The Office for National Statistics (ONS) works in partnership with others in the Government Statistical Service (GSS) to provide Parliament, government and the wider community with the statistical information, analysis and advice needed to improve decision making, stimulate research and inform debate; and to register key life events. ONS has about 4000 staff operating in London, Newport (Wales), Southport and Titchfield (Hampshire), providing the nation with a wide range of statistical information, including our national accounts, measures of inflation, business

statistics, labour market indicators, vital statistics on births, marriages and deaths and population estimates and projections. ONS provides analyses of social and economic trends, examines regional trends and profiles, and helps to monitor the health of the nation. It seeks to get statistics used for the benefit of all in our society. Through the registration of births, marriages and deaths the work of ONS touches directly on each and every citizen. In fulfilling this and all its functions a key objective for ONS is to provide a high quality service to its customers.

ONS also sits at the core of the Government Statistical Service (GSS). The GSS is a decentralised organisation which is spread across most Government Departments. The Head of the GSS is the National Statistician who is also the Director of ONS. The GSS comprises about 7,000 civil servants who work in ONS, in 30 or more other UK Government Departments, or in the two devolved administrations in Scotland and Wales. The primary function of these staff is to collect, analyse and disseminate statistics. Staff in the GSS operate within an ONS-administered personnel framework which sets standards for recruitment, qualifications, competence and training. GSS staff come under the managerial authority of a designated Head of Profession for Statistics (HoP). The National Statistician is the Head of Profession in the Office for National Statistics but, in practice, delegates some of her HoP responsibilities to the Heads of the four ONS Statistical Directorates. From April 2008 ONS will come under new governance arrangements with the introduction of a new independent Statistics Board which will oversee the production of statistics under a revised Code of Practice.

Household Surveys in ONS: History and Context

ONS plays a central role in collecting data for its own statistical outputs, and for those of other departments in the GSS. A majority of staff in ONS is involved in the design and collection of a wide range of data sources either for economic or social statistics. This paper focuses on the household survey operations, sometimes also referred to as 'Social Survey'.

ONS and its various predecessors have been carrying out household surveys for over 60 years to provide the sources for social statistics produced by ONS and the GSS. Throughout its existence various survey developments took place in line with the expansion of government-funded survey taking internationally. However, during the 1990s the Social Survey area in ONS underwent greater change than at any time in its history (ONS, 1992). There was an extraordinary growth in the number of surveys launched, and several large surveys were instigated in this period. Other important developments were the use of information technology in interviewing (CAPI, CATI) and the move to the competitive tendering of surveys.

The 1990s were a time of change across UK government, with considerable emphasis on the better management and targeting of resources. This affected Social Survey in two ways. On one hand, the drive for greater efficiency and cost-effectiveness changed the way government surveys were commissioned. By 1994 it was usual for government household survey work to be put out to

competitive tender. This meant Social Survey competed for surveys along with other survey organisations in the private and voluntary sectors.

On the other hand, new demands for high quality information led to a substantial increase in the need for surveys. While information from administrative records could be used in some cases, in others surveys were needed to provide baseline data for devising policy targets and monitoring progress against them. There was a need for both ad hoc surveys (on a one-off basis, but sometimes repeated after a few years) and continuous surveys (where the fieldwork is on-going and new samples are drawn each year). If UK survey research in the 1980s was characterised by repeat or serial ad hoc surveys, in the 1990s it was marked by the creation or expansion of large continuous surveys which focused on departmental policies. Departments wanted their own continuous surveys, with the flexibility to adjust the content from year to year depending on the policies and targets of most interest.

These rapid and radical changes prompted the need for a re-think of how ONS managed its survey portfolio, and eventually for a comprehensive strategy for how households surveys in ONS were carried out.

The basis for the new vision was laid in the early 1990s with the introduction of survey harmonisation principles (Manners, 1996). Although the large continuous ONS surveys collected information on different topics, all surveys included questions on basic socio-demographic characteristics of respondents and their households. Because these surveys were designed at different times to meet different needs they included slightly different questions and response categories to collect information on the same basic variables. This made it difficult to establish coherence across estimates from different surveys and for data to be pooled to give large sample sizes and more robust estimates. This led to a GSS-wide initiative to produce common survey variables and the implementation of harmonised survey inputs: questions and associated methods such as edit checks. Throughout the 1990s these harmonised survey inputs were developed for a range of basic socio-demographic variables and were implemented on the major ONS surveys and, where feasible, on other surveys carried out on behalf of other government departments in the GSS.

Apart from the lack of coherence in the various data collection instruments for these surveys there were also different sample designs and fieldwork practices, often developed in isolation because the survey design had to meet different requirements. For example, the Labour Force Survey (LFS) operated on an unclustered sample design, whereas the other continuous surveys were based on clustered samples. There were also separate field forces for the LFS and the other surveys, each with their own management and working practices.

At the same time there were a number of other drivers which have contributed to the development of a new strategic framework for ONS household surveys (Dunnell, 2005) . As already mentioned the drive for cost efficiencies across the public sector means there is an increasing need for efficiencies in data collection and processing. There is also increasing recognition of the need for

ONS to produce better information on key social and economic variables between decennial censuses, for a range of policy purposes, and to meet the increasing demand for regional and sub-regional information. Demand for small area statistics has grown rapidly in the last decade.

Increasingly it was recognised that these various new developments could not be accommodated within the existing survey arrangements. Individually, surveys had reached their limit in terms of length and burden and data were not easily pooled across surveys as their designs were different. In addition, the existence and maintenance of separate fieldforces, instruments, and processes represented a duplication of effort and sub-optimal use of limited resources.

A Household Survey Framework for the 21st Century

To meet these new demands a project was set up to develop a single, flexible modular system for household surveys. The basic principle was to build one survey system that could accommodate the existing ONS continuous household surveys, and that would provide the flexibility to take on board new survey requirements. This single survey framework was named the Continuous Population Survey (CPS), but it is now known as the Integrated Household Survey (IHS). After a number of years of development work and testing it was clear the proposed approach would deliver significant benefits and the project is currently on track to deliver the changes needed to establish the new framework during 2008.

The Integrated Household Survey will bring together the ONS continuous household surveys into a single module-based survey (see Appendix A for an illustrative diagram) . The surveys initially included are the General Household Survey, the Labour Force Survey, the Expenditure and Food Survey and the Omnibus Survey.

- The General Household Survey (GHS), the first multi-purpose household survey, started in 1971 and covers a wide range of social and socio-economic topics. The main aim of the survey is to collect data on core topics including housing, employment, education, health and family information. In 2005 the GHS sample was changed from a cross-sectional to a longitudinal design in order to meet Eurostat requirements.

- The Expenditure and Food Survey (EFS) started in 2001 bringing together two surveys, the Family Expenditure Survey (FES) and National Food Survey (NFS), that were both well established and important sources of information, charting changes and patterns in Britain's spending and food consumption since the 1950s.

- A Labour Force Survey (LFS) has been carried out in the UK since 1973 and in its present form since Spring 1992, providing a wide range of data on labour-market statistics and related topics such as training, qualifications, income and disability. In recent years the quarterly LFS has been supplemented by a series of annual boost samples in England, Wales and Scotland.

- The National Statistics Omnibus Survey (OMN) is a regular, multi-purpose survey that started up in 1990 in order to provide quick answers to questions of immediate interest and information on topics that do not require a full, in-depth survey.

The IHS will adopt an unclustered design for all its components, which means the current clustered surveys will come in line with the sample and field work design for the current Labour Force Survey which already uses an unclustered design. At the same time some LFS fieldwork practices will come in line with the other surveys.
Under the IHS, each interviewer will be responsible for delivering all the required interviews in a small geographical area close to where they live, thus reducing travel time and cost and increasing productive contact and interviewing time to help maximise response.

The IHS questionnaire will be designed as a single modular survey instrument comprising:

- a *core module* administered to the whole sample providing information on key variables for all IHS households and persons;
- *topic modules* administered to parts of the sample providing information on variables for which sufficient precision to meet policy needs can be obtained from a portion of the IHS sample;

From these two components a small number of viable interview combinations can be formed so that the core can be matched with specific topic modules.

The IHS sample will be asked the same set of 'core questions', which build on the development of the harmonised survey inputs described earlier. The core sample is based on the size of the four existing surveys and is in the region of 250 thousand households and more than 500 thousand adults per annum, making it the largest ever continuous survey to be conducted in the UK.

The very large sample of core data will provide better quality and more reliable estimates on key social and economic variables between decennial censuses. It will also help to meet the increasing demand for regional and sub-regional information that cannot currently be met by the existing surveys. A range of new outputs will become available. For example, banded household income will be collected on the core module and together with information on topics such as housing, health, employment and education will provide regular information down to local authority district level.

On current plans the IHS will be implemented in stages during 2008, starting with the introduction of the common core module of questions on all four survey questionnaires. Later in the year the new unclustered sample design will be introduced across the four existing surveys. The implementation of the new sample design will be supported by the introduction of a new Survey Case Management System that can handle the fieldwork management for a large unclustered sample across the country.

Building on Survey Integration: Realising the Benefits

Although the current project is working towards the implementation of the existing ONS continuous household surveys the aim of the project is to build a framework that offers a high degree of flexibility so that new surveys can become part of the modular survey system.

An essential element of the IHS development is to 'future-proof' the survey framework. The sample structure is designed so that wholesale changes will not be required, even if sample size requirements alter substantially. The modular structure of the survey instrument will readily accommodate new topics, while a range of survey types and features can be incorporated within the IHS survey system. For example:

- interview combinations with cross-sectional, quarterly or annual panel designs;
- diary components and other self-completion elements;
- telephone or personal interviewing;
- interviews with all household members or with individuals sub-sampled within a household, or combinations of both.

Hence, the data collection method chosen for each topic module or interview combination can be based on statistical requirements rather than the constraints of a particular survey vehicle.

The significant power of the IHS design is increasingly recognised across the GSS. In the last year ONS has successfully proposed to integrate two new surveys in the IHS: the English Housing Survey (from 2008) and the Longitudinal Disability Survey of Great Britain (from 2009). Both surveys have different requirements in terms of their sample and data collection designs.

The English Housing Survey is a survey on the housing situation and conditions of households in England. It will have an annual sample size of approximately 17,000 households, 8000 of which will be followed up by a second survey which will assess the physical condition of the household's accommodation. The survey is a merger of two existing surveys, both of which are widely used in government to support information needs in relation to housing policy.

The Longitudinal Disability Survey of Great Britain will consist of a baseline survey of approximately 50,000 individuals which will assess their disability status. This baseline survey will then be followed by a number of data collection waves for the group of respondents identified as disabled and for a subsample of the non-disabled population. The survey aims to chart the respondents' experiences of disability over time, collecting information to explore relationships between disability and a range of areas including work, education, income, transport, independent living, social participation and attitudes. Information from the survey will be used to inform work across and beyond Government.

Although these two designs are very different, the flexibility of the IHS framework means we can adapt the survey designs so they optimally use the benefits associated with the IHS. Both surveys will benefit from using an unclustered sample design, and the associated field work management infrastructure. They will also take on board the IHS core questionnaire, followed by their specific topic module.

On the whole, the benefits from using the IHS framework are either statistical, in cost efficiency, or in both.

Statistical benefits In terms of statistical benefits, we have already described the advantages of the IHS core questionnaire in terms of delivering increased coherence across the different survey sources. Given the high profile of the IHS and its ability to provide inter-censal estimates of the UK population it is recognised its outputs will provide key national and regional estimates on UK households and individuals. When new surveys come on board in the IHS they will benefit from a greater coherence with these IHS population-level estimates because they will have collected the information through the same core questionnaire.

A second, related statistical benefit is the ability to use two-stage weighting techniques, in which the estimates from the specific topic modules can be weighted to key estimates based on the full IHS core. This will further increase the precision of certain key estimates.

A third statistical benefit is that the IHS core will be aligned (as far as possible) with the next 2011 Census. This has a number of advantages, one of which is the ability to provide a powerful data source for estimation purposes at small area levels. ONS has carried out work on the development of synthetic estimation at small area levels for various survey estimates after the 2001 Census and this approach has obvious benefits for the production of small area level statistics. Using the Census in this way would provide survey sponsors with detailed data at small area levels which could be used for policy planning purposes.

Efficiency savings A second series of benefits stem from a number of efficiency savings in survey costs. The new survey framework will deliver savings from integrating the existing two field forces and reorganisation of data collection functions, facilitated by a new Survey Case Management System and communications improvements. Furthermore, because of the larger

sample size the IHS will deliver economies of scale in survey management overheads, data processing and quality assurance, all of which means that we should be able to provide high quality surveys at a lower cost.

The cost / precision balance Finally, the IHS unclustered sample design (which is unique in the UK) offers clear benefits in terms of the balance between statistical precisions and cost. Because of the unclustered sample new surveys can potentially reduce their sample size (which will reduce costs) to achieve the same level of precision. Or, if survey sponsors choose to, the IHS design can achieve greater precision of some estimates at the same cost. Essentially the IHS framework gives us the opportunity to sample respondents at an optimal level, to produce estimates to the required level of precision within a given cost. The ability to offer this flexibility on the cost/quality dimension of a survey design is a powerful and unique feature of the IHS.

References

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Appendix A: IHS illustrative diagram of modular structure