

An overview of food eaten outside the home in the United Kingdom National Food Survey and the new Expenditure and Food Survey

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Abstract

Objective: To summarise the methods of data collection on foods eaten outside the home in the National Food Survey (NFS) and the new (2001) Expenditure and Food Survey (EFS).

Design: The treatment of foods eaten outside the home in the NFS was reviewed as part of a merger process with the UK household budget Family Expenditure Survey (FES). Problem issues were identified and the way these problems are being dealt with in the EFS is indicated.

Setting: United Kingdom.

Results: Pilot EFS results indicate improved coverage of foods eaten outside the home, in a comparable period to the NFS.

Conclusion: The new EFS, which represents a merger of the NFS and the FES at the level of data collection and validation, is likely to preserve the qualities of the previous surveys and represents an improvement over them.

Keywords

National food survey
Family expenditure survey
Expenditure and food survey

The National Food Survey (NFS) was a continuous survey commissioned by the then Ministry of Agriculture, Fisheries and Food (MAFF). It has provided a source of information on household food consumption and expenditure patterns across Great Britain since 1950 and from 1996 the survey included data for Northern Ireland. The NFS provides the base for estimates of the nutritional value of the household diet in Great Britain and it was among the first household-based surveys that extended data collection to food eaten outside the household. The first results from the Eating Out (EO) extension to the main part of the NFS were published in 1994¹.

The Family Expenditure Survey (FES) was a continuous multipurpose household survey, which began in 1957 and was carried out by the Office for National Statistics (ONS). Information on income and expenditure was collected from a representative sample of around 7000 private households in the UK. The FES provides detailed information about household expenditure on goods and services (including housing costs, food, fuel, travel, clothing and leisure) together with a range of demographic and socio-economic variables and details of income. The original purpose of the FES was to provide the information required to calculate the weights for the UK Retail Prices Index. However, the survey has since become an invaluable source of social and economic data, for both government and academic research².

In the summer of 1997 the possibility of merging the data collection and validation phases of the NFS and FES was proposed. Both surveys collected, amongst other information, data on food expenditure and this overlap prompted consideration of the advantages of a merger. The new merged survey, entitled the Expenditure and Food Survey (EFS), was developed by the ONS with considerable input from DEFRA and commenced collecting data in April 2001.

The coverage of food eaten outside the home in the National Food Survey

Research on extending the NFS data collection to food eaten outside the home was first undertaken in 1992. It was designed to fill a gap that existed in the data collected through governmental dietary and nutrition surveys and to provide a more complete picture of the national diet. The Eating Out part of the NFS was not conducted in Northern Ireland.

Eating out is defined as the consumption of food and drink outside the home that has not been obtained from the household supplies. Data on eating out were collected from a sub-sample of half of the households selected for the main NFS sample in Great Britain. This sub-sample included approximately 6000 persons in 2600 households, which were surveyed in the EO part of the NFS. In

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the main part of the NFS survey, the person mainly responsible for the domestic food arrangements (designated as the main diary keeper) was requested to complete a 1-week diary on all food items available in the household. In addition, each member of the household participating in the EO sub-sample who was over 11 years old was given an individual diary and was requested to keep a record of every item of food and drink eaten out during a 7-day period. Food consumed by children under 11 was recorded separately in the main diary keepers' eating out diary.

Respondents recorded all their expenditure on food and drink so that the expenditure was only shown against the person who paid for the item directly. The respondents further specified whether the food they paid for was for their own consumption or others. Respondents also recorded information on all food consumed, irrespective of who bought it. Expenditure for business expenses was excluded.

In the case of children's school meals, expenditure was recorded against the child if he/she bought it but against the parent if the payment was made directly to the school. According to the methodology described, expenditure on food and drink, not included in school meals, but bought either by the children or for them, was recorded against the purchaser. Consumption details were always recorded in the child's diary.

In the EO part of the NFS, each food item consumed was allocated to a code, from a list of approximately 1600 food codes, compared with around 230 food codes used in the main NFS household food survey. The cost of each item of food or drink paid for by the respondent was also allocated to one of these codes, where possible. However, in cases where putting a cost on every item was not possible, the expenditure was attributed to one of 44 codes that were selected to represent a complete dish (course), meal or snack.

The detail of the coding allowed the estimation of food and nutrient intake on the basis of typical portion sizes and food composition data. Apart from the cost, respondents were asked to record the following in the eating out diary: (1) for each food item, the description and the number of items purchased; (2) the type of outlet where the food items were bought; and (3) whether the food items were consumed on or off the premises. In addition, respondents also noted daily meals they take outside their household, together with the meals eaten at home or at another home, so as to provide a check. The coding frame allowed for components of meals and snacks to be coded separately in order to allow an accurate estimate of food and nutrient intakes. For instance, chicken, roast potatoes and peas would be recorded as three codes for consumption but as one code for expenditure.

Respondents were not asked to weigh the food they consumed. For estimating food and nutrient intakes, each

food code was assigned both a portion size and values for energy and nutrients. Portion sizes were obtained from a variety of sources including catering outlets, the Ministry of Agriculture, Fisheries and Food's *Food Portion Size* book, the rolling programme of National Diet and Nutrition Surveys and package weights. It was possible to be reasonably confident of the data produced for foods obtained from a chain or fast food outlet, or for foods with a fairly standard portion size. For meals taken in restaurants and other eating places, the best estimates of portion size were made and these were reviewed annually.

The variety of foods and drinks eaten out caused some problems when estimating food and nutrient intakes. Estimated portion sizes and nutrient values may vary significantly for similar products. For some foods a range of codes could be applied, according to the approximate size of the portion, e.g. small, standard or large chocolate bar, although in others a single average portion size was applied in all cases, regardless of the age or gender of the consumer. Although interviewers often needed to probe for more precise details, such as whether a food was low-fat or whether tea or coffee had sugar added, such probing was not always possible or may not have provided the level of detail required. Therefore the use of 'unspecified' sub-codes was necessary.

Problems identified, when recording foods eaten outside the home, in the National Food Survey

Over the years, the NFS estimates of expenditure on Eating Out have been consistently lower than those recorded in the FES. It is generally accepted that this is due to under-recording in the NFS. This was given further credence by the results from the pilot EFS, conducted during February and March 2000 by the Social Survey Division of the United Kingdom Office for National Statistics. The pilot EFS showed about the same amount of eating out expenditure as recorded in the FES over the comparable period.

The level of under-recording in the NFS can be partly attributed to the complexity of the coding frame for the Eating Out sample. This placed an unrealistic demand on respondents to describe food to the level of detail required to code to the 1600 food codes. The use of so many food codes also suggested a spurious level of detail. In the 1998 Survey about 200 of the codes were not used, nearly 900 codes were used less than 25 times and 700 did not have a unique portion size or nutrient factor allocated to them. The attempt to achieve this level of detail is also perceived to be inconsistent with the importance of eating outside the household in the total diet (about 12% of total energy).

As previously explained, the NFS eating out diary asks respondents to record details of food and drink paid for (including that consumed by someone else) and everything consumed (including food and drink paid for by

someone else). This mixing of the concepts of food consumed by the respondent and food paid for by the respondent but consumed by someone else has proved confusing and has impacted on the quality of NFS data.

It was often the case in the Eating Out part of the survey that the cost of a meal was not broken down, so expenditure could not be coded separately. To cater for this, the NFS used a series of 44 meal codes for coding expenditure when the breakdown had not been recorded. In recent years the only expenditure series published related to all food and drink, including alcoholic drinks. This was done because the level of expenditure shown in any one-meal code was completely dependent on whether or not the greater detail happened or not to be recorded in the diary.

Changes to the coverage of food eaten out in the Expenditure and Food Survey

The introduction of the Expenditure and Food Survey from April 2001 has provided an opportunity to improve the data quality of the Eating Out part of the survey and to review the future presentation of results.

The sample for food eaten outside of the home has been extended to all of the households included in the new survey, in contrast to the National Food Survey's inclusion of half of the households participating in the main part of the survey. The diary-keeping period of the EFS will be 2 weeks as opposed to the current NFS period of 1 week. The use of personal diaries will be extended to all those covered by the EFS and each individual aged 7 years or more in a household will keep a diary.

The results of the EFS pilot suggest that there will be an increase in the amount of eating out recorded compared with the results of the National Food Survey, although some under-recording is expected to persist. The improved recording in the EFS in comparison to NFS is explained by differences in survey procedures between these two surveys. The EFS asks respondents to record details of only the foods and drinks they paid for and does not attempt to record food consumed by the respondent but paid for by someone else. This means that although data are collected at person level they are only analysed at the household level, thus smoothing out the effect of one respondent in the household being labelled as the 'consumer' of all the foods he/she has paid for. This is in line with the EFS and NFS treatment of food eaten at home.

The Food Standard Agency (FSA) in consultation with MAFF and the Office for National Statistics has constructed a new coding frame for meals eaten out consisting of a list of approximately 250 codes. The broad categories of foods covered within the coding frame are:

- Bread and cereals
- Indian, Chinese and other ethnic foods

- Meat and meat products (including poultry)
- Fish
- Milk, yoghurt, cheese and eggs
- Fruit
- Potatoes and other vegetables
- Salads
- Sandwiches and rolls
- Confectionery, ice cream, snacks and hors d'oeuvres
- Other food products
- Non-alcoholic drinks
- Alcoholic drinks

Only a description of the food eaten out and the amount paid for will be collected in the eating out part of the Expenditure and Food Survey. The majority of the eating out descriptions should prove sufficiently detailed to code to this new frame. As in the NFS, consumption will be estimated by calculating the number of occurrences of each food code and then by the application of portion sizes prepared by the FSA, using similar techniques to those used in the NFS. The FSA will also supply nutrient conversion factors to analyse the nutritional content of each code.

Under the EFS the number of expenditure categories will be reduced from 44 to 5, reflecting the fact that the cost of individual parts of meals is often not provided:

- All other food
- Confectionery
- Ice cream
- Soft drinks (including milk)
- Alcoholic drinks

Although the eating out category for 'all other food', which was also the largest, recorded slightly less expenditure than the NFS, this was not statistically significant. The results of the pilot recorded twice as much spent on soft drinks, nearly twice as much on confectionery and over a third more spent on alcoholic drinks than was recorded in the NFS during the comparable period of data collection.

The merged survey was introduced from 1 April 2001. Work is currently being carried out in order to maximise the level of continuity over time by establishing and applying scaling factors to historic NFS estimates. This is particularly important for food brought home but an attempt will also be made to maintain some continuity at the level of aggregation used in presenting eating out consumption estimates published since 1994.

References

- 1 Ministry of Agriculture, Fisheries and Food (MAFF). *National Food Survey 1994: Annual Report on Household Food Consumption and Expenditure*. London: HMSO, 1995.
- 2 Information on the Food Expenditure Survey can be downloaded at www.mimas.ac.uk/surveys/fes.