



**HOUSEHOLD SATELLITE ACCOUNT
(EXPERIMENTAL)
METHODOLOGY
Chapter 11 Labour**

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11. LABOUR

Concepts

Labour is an input to each of the outputs measured in the Household Satellite Account. Labour is measured by the amount of time people spend in producing the output and this can be measured by time use surveys.

Methodology

Data source

The data source for the Household Satellite Account is the UK 2000 Time Use Survey (TUS). Full details of this survey can be found at www.statistics.gov.uk/themes/social_finances/TimeUseSurvey, including descriptions of the sampling design, questionnaires, data processing and coding, weighting, grossing and standard errors.

The UK 2000 Time Use Survey collected information from all persons in a selected household who are aged 8 and over. This information was collected in the form of a household questionnaire, individual questionnaires and individual time use diaries. The time use diaries ask respondents to complete in their own words what they were doing in 10-minute time slots throughout two 24-hour periods. Each respondent was asked to complete a diary for a weekday and a weekend day. When recording their use of time, respondent said what their main activity was, anything else they were doing at the same time (not 8-13 year olds), where they were and who else they were with. Respondents' written descriptions of activities were allocated to one of approximately 260 pre-defined codes.

The TUS collected 20,981 diaries. For the HHSA results, we have not used 146 diaries where adults have completed child diaries and therefore have not recorded secondary activities. We have also excluded those diaries where more than 30 minutes of time is missing. In total 3,314 diaries have been excluded - we are therefore using 84.2 per cent of the available diaries.

Weighting and grossing

For the HHSA we require the number of hours the whole UK population spends in a particular activity. In order to obtain this, the results from the individual respondents in the time use survey have been weighted and then grossed to the UK population.

The various weights applied are:

1. a seasonality weight - to ensure seasons are equally represented
2. an average day of the week weight - to ensure days of the week are equally represented
3. non-response weights
4. population calibration

The grossing factors applied are based on the relationship of the number of respondents to the UK population aged 8 and over (approximately 53 million people). An adjustment has been made to account for the fact that all the respondents should have completed two diaries – on average, each respondent completed 1.9858 diaries. Also, as we did not include all of the

diaries, the results were adjusted upwards to the full population, to allow for those diaries not selected due to missing time or where adults had completed child diaries. We grossed and weighted the data separately for males and females, and summed the figures to gain our estimated totals. We chose to use this weighted average method, in order to estimate the relative contributions of men and women to value added in household production. The survey estimates were grossed to the UK population using data derived from the Labour Force Survey, which exclude people living in institutions.

HHSA Results

The weighted and grossed results gave the amount of minutes in an average day spent by the UK population aged over 8 in each coded activity. The final adjustment was to multiply this by 365 days to obtain the results for a whole year, and to divide by 60 to convert the minutes into hours. As we were interested in the gender breakdown of the HHSA results, the results were produced separately for men and women.

In order for the total time spent in each principal function to be consistent with the output, each function was looked at separately, and the total of all time associated with it was estimated. This included both time recorded as a primary activity, and time recorded as a secondary activity. Additionally, in the childcare and adult care projects, an imputation was made for unrecorded passive care. Because of this, the total of all of the time across the projects, together with leisure, work and personal time not included in the HHSA, sums to more than 24 hours in a day for the population.

The activity codes allocated to each project are listed in Annex 11.1 at the end of the chapter, and a description of any additional adjustments made can be found below. The full coding frame is on the time use web site. The coding frame is at 4 levels: 1, 2 and 3 digit codes, which match the Eurostat time use coding frame, and 4-digit codes in areas of particular interest in the UK. For the HHSA, we have used the data at the lowest possible level (i.e. 3 or 4-digit). Within each 2-digit heading of the coding frame there is a code for 'unspecified' time. This is where the time could be allocated to the 2-digit level but not to a more detailed 3-digit heading. Similarly, each 2-digit heading also has an 'other specified' code, where the respondent has described an activity not listed in the detailed coding frame. Where the more detailed codes in a category have been allocated to different functions, any time recorded as 'unspecified' or 'other specified' has, where possible, been split between the functions in proportion to the time recorded at the 3 or 4-digit level.

Housing

Results were calculated separately for those respondents living in owner-occupied accommodation and those living in rented accommodation. By merging the details from the household questionnaire and the time use diaries, we could identify the respondent's tenure. We classified owner-occupiers as those who reported of their accommodation that they "own it outright", are "buying it with the help of mortgage or loan", or are "paying part rent and part ownership". Tenants were identified as living in rented accommodation. People who were living rent-free in relatives'/ friends' property, those who were squatting and those who refused or did not know the terms on which they occupied the accommodation were not selected.

Transport

As we are only interested in the transport provided by the household, results were produced based on the mode of transport being used. The mode was recorded in the 'where' part of the

diary. The transport mode codes are:

- 12 Travelling on foot
- 13 Travelling by bicycle
- 14 Travelling by moped, motorcycle or motorboat
- 15 Travelling by passenger car as the driver
- 16 Travelling by passenger car as a passenger
- 17 Travelling by passenger car – driver status unspecified
- 18 Travelling by lorry, or tractor
- 19 Travelling by van

The modes were split into motorised and non-motorised modes and time recorded in unspecified modes. Where a mode was not recorded, the time was allocated in proportion to the time in the recorded modes. Time recorded as walking in the code 982 Travel for day trip/just walk has been excluded.

The output of transport is based on the value of journeys by parties rather than individuals. The total time travelled by individuals was divided by the average numbers in parties in the NTS data, which was used to estimate the output. However, before this adjustment could be made, because the average number in party data includes 0-7 year olds, an estimate of time for the 0-7 year olds had to be added. As no other information was available, it was assumed that 0-7 year olds travel in the same way as 8-13 year olds. While this is a reasonable assumption for school age children, it is unlikely to be correct for the under 5s, but at this stage there is no alternative.

Once the results for travel were calculated, the time for the related service of vehicle maintenance was added.

Childcare

As we know that childcare is often under recorded in time use diaries, estimates for time when a child is being ‘cared’ for passively were imputed and added. Results were calculated for unrecorded passive care in two ways:

1. In households with children, all the sleep time of parents, guardians, step-parents and foster parents was included as passive care. This makes it possible to look at the gender breakdown of passive care, without making assumptions about who is on call.
2. Where any adult (over 16 years of age) recorded being with a child living in the same household while the adult was awake, this time was included as passive care when childcare was not recorded as either a main or secondary activity.

Adult care

In the same way that childcare is often under recorded, so where adult care is continuous, passive care may also be under recorded. We recoded the sleeping time of those adults, who reported spending more than 100 hours per week caring for an adult in their household in the TUS individual questionnaire, as passive adult care.

Voluntary activity

The Time Use code for voluntary activity is:

- 412 Volunteer work through an organisation

Sensitivity analysis

As the time use results come from a survey, they are subject to sampling errors. The standard errors around the grossed results for each 3-digit activity heading are shown in the sensitivity analysis results.

In the methodology described above we have looked at each principal function separately and produced estimates of the total time spent by the UK population in producing each output. In this way, the time use is consistent with the output. As people frequently do two or more activities at the same time, the time spent in both the primary and the secondary activity has been counted, where the two are both household production activities. Respondents have reported their time use in ten-minute slots. Frequently the primary and secondary activities are taking place at the same time. However, activities may also take place sequentially. If the activities are sequential, we will have overestimated the total time spent on any principal function, as we have allocated a full 10 minutes to both the primary and secondary activities.

If you were to add all of the time across all of the output projects it would sum to more than 24 hours per person per day. In order to see how the time estimates, and therefore the effective return to labour, is affected by allocating only 24 hours per day per person, we have produced two other sets of data for comparison. These are:

- the total of primary activities only for each project;
- Where any two activities take place at the same time (i.e. a primary and a secondary activity), 50 per cent of the reported time is allocated to the primary activity code and 50 per cent to the secondary code. The codes are then allocated to the individual projects.

RELATED SERVICES

Concepts

Related services are activities which are associated with other productive functions, rather than being activities in their own right. They include shopping, maintenance and household management. They are similar to ancillary activities in the National Accounts, in that they produce services rather than goods and they are not undertaken for their own sake. In the National Accounts enterprises are classified by their principal productive activity, and ancillary services typically produce outputs that are commonly found as inputs into almost any kind of productive activity. In the Household Satellite Account, household production is divided into principal functions, undertaken by all households, rather than classifying the households themselves by a principal activity. These related services are not common to all principal functions, and their inputs are separately identified, in order to allocate them to the appropriate function, so in this respect they are not like ancillary services.

If we wished to value related services separately in an output approach, the volume of maintenance, shopping and management would have to be calculated. There is not sufficient data to allow us to do this. However, the market prices used to value the output of the principal functions will usually include the provision of these related services. So, for example, the driver of a private hire vehicle makes a charge for the journey, which includes any overheads (s)he has for maintaining the vehicle. The cost of a meal in a restaurant also covers the time an employee spends shopping for food etc. The time spent on maintenance, shopping and household management should be recorded as an input into the appropriate principal function. This will account for all time spent doing maintenance, and most of the time spend shopping and managing the household. Some shopping and management time

will not be related to productive functions, e.g. shopping for gifts and planning leisure activities. In theory, this residual should be valued because it is also productive. However, this demands a great deal of detail from respondents to a self-completion time use diary, and a proliferation of codes in a pre-coded exercise. We therefore have to make some assumptions about the split of shopping and management between the various principal functions and non-productive activity.

Methodology

Data source

We used the UK 2000 Time Use Survey to identify the time spent on shopping and household management activities. This was then allocated to the relevant principal functions:

Housing:	shopping mainly related to accommodation, and shopping for and ordering goods and services related to accommodation via the internet part of household management banking and bill paying via the internet
Nutrition:	shopping for food and shopping and ordering food via the internet part of household management
Childcare:	part of household management

A full list of the time use codes used can be found in Annex 11.2 at the end of the chapter.

Volume

We adjusted the amounts of time spent in specified tasks by adding a proportion of the time spent in "unspecified" or "other specified" tasks. To do this, any time recorded as "unspecified" or "other specified" has been split between the functions in proportion to the time spent recorded at the 3 or 4 digit level. This means we allocated the time in "unspecified shopping and services" and "other specified shopping and services" to shopping, commercial and administrative services, and personal services, according the proportion of specified time spent in those activities. Similarly, we allocated the time spent in "unspecified shopping" and "other specified shopping" by the proportion of time spent in shopping mainly for food, mainly for clothing, mainly for accommodation, shopping or browsing and window-shopping.

For household management, because we have no details about the specific tasks involved, we applied a general split to the time spent in household management, based on the proportions of primary time spent in housing, nutrition, childcare and leisure activities. This assumes that the time spent planning and organising the outputs is proportional to the time spent actually producing them.

To allocate the time for related services by owner occupiers and tenants separately, we applied the proportion of primary time spent by each in shopping for accommodation, shopping for and ordering goods and services related to accommodation via the internet, household management, and banking and bill paying via the internet, to our adjusted figures.

Annex 11.1 Allocation of Time Use codes to HHSA projects

Housing

- 320 Unspecified household upkeep
- 321 Cleaning dwelling
- 322 Cleaning yard
- 323 Heating and Water
- 324 Various arrangements
- 324 Disposal of waste
- 329 Other specified household upkeep
- 341 Gardening
- 351 House construction and renovation
- 352 Repairs of dwelling
- 353 Making, repairing and maintaining equipment
- 3613 Shopping mainly related to accommodation
- 3724 Shopping for and ordering goods and services related to accommodation via the internet

Transport

- 901 Travel related to personal business
- 913 Travel to work from home and back only
- 914 Travel to work from a place other than home
- 921 Travel related to education
- 923 Travel escorting to/ from education
- 931 Travel related to household care
- 936 Travel related to shopping
- 937 Travel related to services
- 938 Travel escorting a child (other than education)
- 939 Travel escorting an adult (other than education)
- 941 Travel related to organisational work
- 942 Travel related to informal help to other households
- 943 Travel related to religious activities
- 944 Travel related to participatory activities other than religious activities
- 950 Travel to visit friends/ relatives in their homes (not respondent's household)
- 951 Travel related to other social activities
- 952 Travel related to entertainment and culture
- 961 Travel related to physical exercise
- 962 Travel related to hunting & fishing
- 963 Travel related to productive exercise other than hunting & fishing
- 971 Travel related to gambling
- 972 Travel related to hobbies other than gambling
- 981 Travel to holiday base
- 982 Travel for day trip/ just walk
- 989 Other specified travel

- 354 Vehicle maintenance

Nutrition

- 310 Unspecified food management
- 311 Food preparation
- 312 Baking
- 313 Dish washing
- 314 Preserving
- 319 Other specified food management
- 3611 Shopping mainly for food
- 3722 Shopping for and ordering food via the internet

Clothing & Laundry Services

- 333 Handicraft and producing textiles
- 331 Laundry
- 332 Ironing

Childcare

- 380 Unspecified childcare
- 381 Physical care and supervision
- 382 Teaching the child
- 383 Reading, playing and talking with child
- 384 Accompanying child
- 389 Other specified childcare
- 427 Childcare as help

Adult care

- 3910 Unspecified help to an adult household member
- 3911 Physical care & supervision of an adult household member
- 3914 Accompanying an adult household member
- 3919 Other specified help to an adult household member
- 420 Unspecified informal help
- 421 Food management as help
- 422 Household upkeep as help
- 423 Gardening and pet care as help
- 424 Construction and repairs as help
- 428 Help to an adult of another household

Voluntary activity

- 412 Volunteer work through an organisation

Annex 11.2 Time Use codes used for Related Services

Shopping and services

- 360 Unspecified shopping and services
- 361 Shopping
- 3611 Shopping mainly for food
- 3612 Shopping mainly for clothing
- 3613 Shopping mainly related to accommodation
- 3614 Shopping or browsing at car boot sales or antique fairs
- 3615 Window shopping or other shopping at leisure
- 3619 Other specified shopping
- 362 Commercial and administrative services
- 363 Personal services
- 369 Other specified shopping and services

Household management

- 371 Household management not using the internet
- 372 Household management using the internet
- 3720 Unspecified household management using the internet
- 3721 Shopping for and ordering unspecified goods and services via the internet
- 3722 Shopping for and ordering food via the internet
- 3723 Shopping for and ordering clothing via the internet
- 3724 Shopping for and ordering goods and services related to accommodation via the internet
- 3725 Shopping for and ordering mass media via the internet
- 3726 Shopping for and ordering entertainment via the internet
- 3727 Banking and bill paying via the internet
- 3729 Other specified household management using the internet