

FOREWORD

The need for improved knowledge of the unrecorded non-market sector of the economy and its interrelationships with the market sector is today widely recognised. Household production is accountable for a large share of this non-market production. It remains largely excluded from the core accounting framework of the System of National Accounts (SNA).

At their annual meeting in 1991, the OECD National Accounts Experts proposed that the Secretariat act as a “clearing house” for the exchange of information on national experiences and practices in the measurement of household production, as a first step towards improving the international comparability of estimates. An information network has been developed for that purpose.

Information on household production and unpaid activities has multiple policy uses. The Working Party on the Role of Women in the Economy, the Working Party on Employment and Unemployment Statistics and the Working Party on Social Affairs of the Employment, Labour and Social Affairs Committee have expressed an interest in the work.

This volume describes the attempts which have been made by the statistical offices in OECD countries to measure household production. Part one points to some of the issues that impinge on the international comparability of the diverse national estimates. Description of time use surveys for the measurement of unpaid work and of methods of establishing monetary valuations of household production are presented on a country by country basis in separate sections of part two.

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TABLE OF CONTENTS

Introduction	7
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Part I

DEFINITIONS, SOURCES AND METHODS

A. DEFINITIONS	11
Household work	11
Household production	12
B. DATA SOURCES	12
Time use surveys	12
Household surveys other than time use surveys	14
C. MONETARY VALUATIONS OF TIME INPUTS	15
The opportunity cost method	15
Market replacement cost of a “global substitute”	15
Market replacement cost of “specialised substitutes”	16
References	17

Part II

COUNTRY TABLES

A. TIME USE SURVEYS	21
Australia	21
Austria	23

Canada	25
Denmark	27
Finland	29
France	31
Germany	33
Italy	35
Netherlands	37
New Zealand	39
Norway	41
Sweden	43
 B. MONETARY ESTIMATES OF HOUSEHOLD PRODUCTION	 45
Australia	45
Canada	47
Denmark	49
Finland	51
France	52
Germany	53
New Zealand	55
Norway	57

INTRODUCTION

This study reviews national experiences in OECD countries in conducting time use surveys and producing official estimates of the size of unpaid work and non-market household production. It is important at the outset, to make a distinction between household work and household production. Household work refers to the unpaid labour which household members expend in producing goods and services for their own consumption. Household production refers to the goods and services produced within the household by its members – and consumed by them – by combining their unpaid labour and consumption goods – durable and non-durable – purchased on the market. Household work is one input, amongst others, into the household production process and represents the net value-added generated through this process. It is identified with reference to a set of activities considered to produce economic value in the same way as paid activities. Household production is identified on the basis of a number of goods and services which could be bought on the market.

Imputing a money value to household work and household production is a way of enabling a direct comparison with economic activity measured by national accounts aggregates. The 1993 System of National Accounts (SNA) (United Nations, 1993) defines a production boundary which includes all goods produced by households for own consumption and leaves out all services except the housing services which owner-occupiers of dwellings are considered to provide to themselves and the services produced by paid domestic staff. The 1993 SNA does however explicitly state that the production of services for own final consumption within the household makes an important contribution to economic welfare of households.

Estimates of the size of household production are relevant for economic analysis because they lead to alternative assessments of growth, levels of consumption and income distribution. Movements in national accounts aggregates over time do not necessarily reflect accurately changes in well-being. For instance, shifts of activities from the conventional productive sphere to the household sector can offset, to a certain degree, a recorded fall in consumption, because households produce services which they no longer buy on the market. Conversely, an observed rise in consumption may to a certain extent be due to the fact that home-produced services are being replaced by services provided by the market. Total consumption,

including consumption of home-produced services, would then have grown less than statistics show.

Estimates of the size of household production are based on measures of time and other resources spent on productive activities such as meal preparation, laundering, house-cleaning, shopping, maintenance and repairs, childcare and care of adults in the household, household administration. The productive attribute of activities is generally defined against the “third party” criterion but, as discussed below, the classification of some activities remains controversial.

Time use surveys, which provide measures of time devoted to household work, also provide information on a broad range of issues with important implications for social policy and in relation to gender equality and the role of women in the economy: time use patterns according to age and activity status; time devoted to childcare, care of the elderly and the disabled; and the division of paid and unpaid work between men and women.

Several OECD Member countries are presently involved in conducting nationally representative time use surveys, in measuring unpaid work and producing estimates of the money value of both household work and household production as shown in Table 1.

Part I of this inventory provides a brief general discussion of definitions, sources and methods used for the measurement of household work and household production. Part II provides a review, on a country by country basis, of national statistical offices’ estimates of time spent on household work and of household production in OECD Member countries based on their most recent time use surveys.

Table 1. Household production estimates in OECD countries based on most recent time use surveys

	Time use survey	Monetary estimates of household production
Australia	1992	1992
Austria	1992	
Canada	1992	1992
Denmark	1987	1990
Finland	1987-88	1990
France	1985-86	
Germany	1991-92	1992
Italy	1988-89	
Netherlands	1988	
New Zealand	1990 (pilot)	1991
Norway	1990-91	1991
Sweden	1990-91	

Source: OECD.

Part I

**DEFINITIONS, SOURCES AND
METHODS**

A. DEFINITIONS

Household work

Physical quantity measures of unpaid household work are expressed in numbers of hours and minutes spent by household members on performing household productive activities. A prerequisite for the measurement of household work is the establishment of a criterion to define which unpaid household activities are to be considered as economically productive.

The “third party” criterion is widely used to identify non-market productive activities (Hill, 1979). According to this principle, an activity which can be performed by some other economic unit is assumed to be productive. This criterion enables a distinction between household productive work, personal care and leisure.

Application of the third party criterion is not sufficient in some cases to provide an uncontested classification of some activities which are analysed differently in the various country studies. A controversy exists as to whether the following categories of activities should be considered as productive:

- i)* Travel: travel associated with the transport of goods for the household and taking another member of the household from one place to another can clearly be considered as productive according to the third party criterion. The problem raises with travel on one's behalf: it is not possible for instance to hire a substitute to travel to one's own workplace. The most usual practice is to treat finalised travel as a derived activity and classify it in the same category as the activity to which it is linked. When travel is considered as an independent activity different criteria may apply to determine which travel is productive.
- ii)* Some activities performed for oneself as sole beneficiary such as a meal prepared by oneself for oneself, are productive according to the third party criterion, but should they be considered as part of household production since the product is not destined to other members of the household? Views differ in this matter.
- iii)* Voluntary and community work is unpaid but often performed outside the household and the output of such work is consumed by individuals who do not belong to the household. Here again views differ as to whether the product should be classified as part of household production.

- iv) Several do-it-yourself activities, such as carpentry, gardening, knitting, although productive of goods and satisfying the third party criterion, may alternatively be considered as work or leisure. This may also be the case of some activities with children (such as playing with children).

Another difficulty arises to separate household work from other activities. This is the case when professional work and household work are performed on the same premises by self-employed persons and unpaid family workers. Drawing a clear-cut line between market production and non-market household production is difficult, since both may take place concurrently. The difficulty of allocating resources between professional work and household work applies not only to time but also to goods and services used in the production process.

Household production

Physical measures of non-market household production are expressed in quantities of goods and services produced by household members for their own consumption. These are for instance kilogrammes of food products, linen laundered, square metres of floors cleaned, numbers of meals prepared. Not all kinds of output lend themselves easily to measures in physical quantities and it may be difficult to define a standard unit of output. This is particularly true of tailor-made services such as care services. Time input data are then taken as a proxy for output measures although they do not account for the type and quality of services produced. Due to statistical limitations, in practice, few output quantity measures are available, however superior they may appear from a theoretical standpoint.

B. DATA SOURCES

Time use surveys

The population sample of this type of household survey is usually structured according to socio-demographic variables which significantly affect time use patterns of individuals. These are mainly sex, age, marital and labour-market status, and the number of children and presence of other adults in the household. Where the unit surveyed is the whole household rather than a single individual, time use patterns can be established at the household level as well.

Various data collection methods are used: diaries, direct interviews and questionnaires. Most of the time, several methods are combined.

The diary system presents the advantage of producing a more accurate description of activities. Three factors are important: the level of disaggregation of the activity list; the type of coding applied to activities; the length of the time blocks for recording activities. Free description and post-coding of the activities usually produce a more accurate description than when a pre-coded list is ticked. Short-time

blocks (5 to 15 minutes) make routine activities easier for interviewees to recall. Diaries also allow for the reporting of composite activities, those which involve performing two or more activities at the same time, in order to give a more comprehensive picture of housework performed. On the other hand, diaries may present a risk of inducing low response rates or unreliable answers if they are too burdensome to keep, which may be the case when they have to be filled in during several days or a full week. Combining the diary method with direct interviews is useful in order to check the accuracy of diary answers and also serves to obtain some information on non frequent activities.

Time use surveys usually cover all days of the week. They are also often spread out over several consecutive months, different periods of the year or over the whole year in order to account for the seasonality of household production which may be important, due to holidays, or climatic factors for instance.

Table 2 records the most recent time use studies carried out by national statistical offices in OECD Member countries and specifies the size and the age range of the population sample surveyed.

Table 2. Time use surveys: reference population

	Year	Sample size	Age range
Australia	1992	4 400 households	15 and over
Austria	1992	23 000 households	10 and over
Canada	1992	9 000 households *	15 and over
Denmark	1987	3 577 individuals	16-74
Finland	1987-88	10 574 individuals	10 and over
France	1985-86	16 047 households **	15 and over
Germany	1991-92	7 200 households	12 and over
Italy	1988-89	19 728 households	3 and over
Netherlands	1988	7 434 households	12 and over
New Zealand	1990 (pilot)	627 households	12 and over
Norway	1990-91	4 862 individuals	16-79
Sweden	1990-91	5 300 individuals	20-65

* Only one person per household.

** One or two (couple) persons per household.

Source: OECD.

Table 3 presents some additional characteristics of these surveys: number of days during which the diary is kept, the method used for recording activities, the duration of the survey period, and the length of time blocks used for reporting the

different activities. A more detailed description of the time use surveys is shown in the country tables in Part II, Section A.

Table 3. **Time use surveys: data collection methods**

	Diary	Activity coding	Survey period	Length of activity blocks
Australia	2 days	post-coding	4 times a year	5 minutes
Austria	1 day	post-coding	2 times a year	day: 15 minutes night: 30 minutes
Canada	1 day	post-coding	whole year	free declaration
Denmark	1 day	precoded list	March	15 minutes
Finland	2 days	post-coding	whole year	day: 10 minutes night: 30 minutes
France	1 day	post-coding	whole year	5 minutes
Germany	2 days	post-coding	4 times a year	5 minutes
Italy	1 day	post-coding	whole year	free declaration
Netherlands	2 days	precoded list	whole year	15 minutes
New Zealand	2 days	post-coding	August	5 minutes
Norway	2 days	post-coding	whole year	day: 15 minutes night: 30 minutes
Sweden	2 days	post-coding	September to May	10 minutes

Source: OECD.

Household surveys other than time use surveys

Other kinds of household surveys provide data on household production and frequencies of the performance of household productive activities. “Food surveys” for example – such as the annual survey conducted in France – give statistics on the quantities of home-grown food, the number of meals prepared at home, expenditure on meals taken in restaurants or canteens and their respective prices. This supplies information for the valuation of household production of meals. The Household Work Study conducted in Finland in 1980 showed that it was possible to obtain data on quantities of outputs for a much wider range of goods and services. The Finnish survey gives data not only on food and meal production but also on the kilogrammes of laundry washed, and the number of square metres of dwellings cleaned which are used as indicators of output for the corresponding activities. It also records the number of young children (under the age of 7) and the number of handicapped or chronically ill persons requiring special care as a basis for the estimation of the output of care services.

Output quantity indicators may also be derived from health surveys, household budget surveys or other specific surveys focusing on various areas in which household production takes place. Such surveys are useful sources for estimating household production but are in fact little used, mainly because they provide partial information which is not collected consistently from one survey to another.

Household expenditure surveys are of great interest to establish the intermediate consumption entering household production; they complement very usefully the information provided by National Accounts on final consumption. A few countries have undertaken establishing input-output tables of household production. The bulk of efforts remains however concentrated on the valuation of household work.

C. MONETARY VALUATIONS OF TIME INPUTS

There are three general methods for imputing a money value to household work: the opportunity cost, the market replacement cost of a global substitute and the market replacement cost of specialised substitutes. Whether hourly wage rates are calculated on the basis of normal hours or effective hours worked and taken gross or net or whether total labour costs are used can introduce considerable differences in the results. Estimates are usually established using several methods in parallel. The market replacement cost methods are the most consistent with National Accounts in that they apply observed market prices to all activities.

The opportunity cost method

Housework time is valued at the wage rate which household members are entitled to expect on the labour market, given their sex, age and qualifications. For those individuals engaged in the labour force, wages can be observed. Wage rates of employees are sometimes also applied to own-account workers and persons out the labour force, for lack of alternative data. It is frequently argued that this method overestimates the value of housework because it is not considered to require high qualifications.

Market replacement cost of a “global substitute”

A “global substitute” is considered to be someone able to perform all the activities of the household members who do housework. The same wage rate is used to estimate the market value of each household member’s time; it is some kind of average wage of domestic helpers.

Market replacement cost of “specialised substitutes”

This method assumes that different persons are hired for each specific category of housework tasks – cooking, sewing, nursing, etc. – for the performance of which they have received specialised training. The specific substitute specialist occupations and the level of qualification considered appropriate for each occupation are defined differently in country studies.

Table 4 indicates the methods which have been used by statistical offices of OECD Member countries to produce monetary estimates of housework on the basis of the most recent time use surveys. Further details are given in the country tables in Part II, Section B.

Table 4. **Methods applied to estimate the value of household work**

	Opportunity cost	Global substitute cost	Specialised substitutes costs
Australia (1992)	X	X	X
Canada (1992)	X	X	X
Denmark (1990)	X	X	
Finland (1990)	X	X	
Germany (1992)	X	X	X
New Zealand (1991)	X	X	X
Norway (1991)		X	X

Source: OECD.

The respective advantages and shortcomings of these different methods and their variants are discussed, *inter alia*, in Chadeau (1992) and Goldschmidt-Clermont (1993). One remark applies however to all methods. The use of market wages to estimate the money value of housework means that the lower value of women's paid work in the labour market – due mainly to the existing occupational gender segregation – will translate in a similar underestimation of household work and women's contribution to household production. Sensitivity tests to different definitions of household production and methods of valuation of unpaid work and to changes in the gender characteristics of the labour market are an important aspect of the work being developed.

REFERENCES

- CHADEAU, A. (1992), "What is households' non market production worth?", *OECD Economic Studies*, No. 18, Spring.
- GOLDSCHMIDT-CLERMONT, L. (1993), "Monetary valuation of non market productive time – Methodological considerations", *The Review of Income and Wealth*, Vol. 39, No. 4, pp. 419-433.
- HILL, T.P. (1979), "Do-it-yourself and GDP", *The Review of Income and Wealth*, Vol. 25, No. 1.
- UNITED NATIONS (1993), *The System of National Accounts 1993*, New York.

Part II

COUNTRY TABLES

A. TIME USE SURVEYS

AUSTRALIA

Organisation: Australian Bureau of Statistics.

Reference years:

- 1987 Pilot Survey.
- 1992 first national survey, planned every 5 years.

1992 TIME USE SURVEY

Publications: Australian Bureau of Statistics (1993), *How Australians Use Their Time*, cat. No. 41530, Canberra.

Castles, I. (1994), *Unpaid Work and the Australian Economy 1992*, Occasional Paper, Australian Bureau of Statistics, cat. No. 5240.0.

1. Reference population

Size of the sample: 4 400 private households (8 300 persons).

Geographical coverage: national, by state and by metropolitan/non metropolitan area.

Age range: 15 years and over.

2. Data collection methods

- Household and individual questionnaires.
- 48-hour diary.
- Survey period: February/March, May/June, August/September, October/November.
- Length of activity blocks: 5 minutes.
- Post-coding of activities.

3. Activities

Level of disaggregation: 31 household activities.

Specific activities:

- Travel activities: YES, associated with each major group.
- Assistance to other households: YES.
- Volunteer and community work: YES, separate major group.

Recording of:

- Simultaneous activities: choice of a primary activity; possible record of two secondary activities.
- Presence or help of other persons: unpaid and paid help for childcare.

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 15 years and over	Women	Men
Total unpaid work	35:42	19:04
<i>of which:</i> volunteer and community work	2:10	2:06

AUSTRIA

Organisation: Austrian Central Statistical Office.

Reference years:

- 1981 (special programme of the microcensus).
- 1992 (special programme of the microcensus).

1992 TIME USE SURVEY

Publication: “Zeitverwendung 1981 und 1992”, *Statistische Nachrichten*, No. 2-6.

1. *Reference population*

Size of the sample: 23 000 private households.

Geographical coverage: national.

Age range: 10 years and over.

2. *Data collection methods*

- Household and individual questionnaires.
- Direct questions on paid and unpaid help, childcare, presence of handicapped persons.
- 24-hour self-administered diary (or filled by the interviewer).
- Survey period: March and September (half of the sample each time).
- Length of activity blocks:
 - 15 minutes between 5.00-23.00
 - 30 minutes between 0.00-5.00 and 23.00-24.00.
- Post-coding of activities.

3. *Activities*

Level of disaggregation:

- 205 detailed activities, without travel.
- 5 major groups, of which: domestic work (39 activities); handicraft (9 activities); childcare (25 activities).

Specific activities:

- Travel: YES, associated with the different groups of activities or major groups (4 types of transport).

- Assistance to other households: YES, “activity done only/also for other households”.
- Volunteer and community work: YES, sub-group of “Free time“ activities.

Recording of:

- Simultaneous activities: choice of a main activity; possible record of one secondary activity.
- Presence or help of other persons: YES, “with whom” coding (six different groups).

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

	Women	Men
Household activities, childcare and care for other persons		
– all persons 19 years and older	38:30	15:10
– all persons 10 years and older	34:11	13:25

CANADA

Organisation: Statistics Canada.

Reference years:

- 1986 (General Social Survey).
- 1992 (General Social Survey), planned every 5 years.

1992 TIME USE SURVEY

Publication: Paillé, B. (1994), *Estimating the Volume of Unpaid Work Activities in Canada, 1992: An Evaluation of Data from the General Social Survey*, General Social Survey Working Paper No.10, Statistics Canada.

1. *Reference population*

Size of the sample: 9 000 private households; only one person per household is surveyed.

Geographical coverage: national and ten provinces.

Age range: 15 years and over.

2. *Data collection methods*

- Basic questionnaire.
- “Yesterday” diary (24 hours) recorded by telephone.
- Direct questions on time spent on childcare, housework, household maintenance, unpaid help to others.
- Survey period: throughout the whole year.
- Length of activity blocks (in minutes): start and end time for each activity.
- Post-coding of activities.

3. *Activities*

Level of disaggregation:

- 167 detailed activities.
- 10 major groups, of which: domestic work; care giving for household members; shopping and services; organisational, voluntary and religious activity.

Specific activities:

- Travel: YES, associated with the destination-related activity.
- Assistance to other households: YES, subgroup of “organisational, voluntary and religious activity”.
- Volunteer and community work: YES, specific activity under “organisational, voluntary and religious activity”.

Recording of:

- Simultaneous activities: only primary activity is recorded (supplementary questions on childcare).
- Presence or help of other persons: YES, “with whom” coding (5 categories).

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 15 years and over	Women	Men
Total unpaid work	31:42	18:18
<i>of which:</i> volunteer and community work	2:48	2:42

DENMARK

Organisation: Danish Institute for Social Research.

Reference years: 1964, 1975, 1987.

1987 TIME USE SURVEY

Publication: Viby Mogensen, G. *et al.* (1990), *Time and Consumption*, Danmarks Statistik, Rockwool Foundation Research Unit, Copenhagen.

1. *Reference population*

Size of the sample: 3 577 persons.

Response rate: 72.5%.

Geographical coverage: national.

Age range: 16 to 74 years.

2. *Data collection methods*

- Household and individual questionnaires.
- “Yesterday” diary recorded by telephone (24 hours).
- Survey period: March.
- Length of activity blocks: 15 minutes.
- Pre-coded list of activities.

3. *Activities*

Level of disaggregation: 39 detailed activities.

Specific activities:

- Travel: YES, associated in the major activity.
- Assistance to other households: NO.
- Volunteer and community work: NO.

Recording of:

- Simultaneous activities: NO.
- Presence or help of other persons: NO.

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 16 to 74 years	Women	Men
Domestic work, household maintenance, shopping and services, childcare	21:42	11:19

FINLAND

Organisation: Statistics Finland.

Reference years:

- 1979.
- 1987-88.

1987-88 TIME USE SURVEY

Publication: Niemi, I. and Pääkköme, H. (1990), *Time Use Changes in Finland in the 1980s*, Central Statistical Office of Finland, studies 174, Helsinki.

1. **Reference population**

Size of the sample: around 10 000 persons in private households.

Response rate: 74.4%.

Geographical coverage: national.

Age range: 10 years and over.

2. **Data collection methods**

- Background questionnaire.
- 2-consecutive-day diary.
- Survey period: throughout a whole year (April to March).
- Length of activity blocks:
 - day time: 10 minutes
 - from midnight to 5.30.
- Post-coding of activities.

3. **Activities**

Level of disaggregation: 141 detailed activities.

Specific activities:

- Travel: YES, associated with each sub-group.
- Assistance to other households: YES, specific activity.
- Volunteer and community work: YES, sub-group “participative activity”.

Recording of:

- Simultaneous activities: choice of main activity; possible record of one secondary activity.
- Presence or help of other persons: YES, “with whom” coding.

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 10-64 years	Women	Men
Domestic activities, childcare, maintenance, shopping and errands	25:05	14:07

FRANCE

Organisation: INSEE.

Reference years:

- 1975.
- 1985-86.

1985-86 TIME USE SURVEY

Publication: Grimler, G. and Roy, C. (1987), *Les emplois du temps en France en 1985-86*, Premiers résultats No. 100, June, INSEE.

1. *Reference population*

Size of the sample: 16 047 households; one or two persons (in the case of a couple) per household (24 000 persons).

Geographical coverage: national; urban and rural.

Age range: 15 years and over.

2. *Data collection methods*

- 24-hour diary.
- Direct questions on participation in activities over a longer period.
- Survey period: throughout the year.
- Length of activity blocks: 5 minutes.
- Post-coding of activities.

3. *Activities*

Level of disaggregation: 199 detailed activities.

Specific activities:

- Travel activities: YES, associated with each major group.
- Assistance to other households: YES, “for whom” coding.
- Volunteer and community work: YES, “for whom” coding.

Recording of:

- Simultaneous activities: choice of a main activity, possible record of one secondary activity.
- Presence or help of other persons: YES, “with whom” coding.

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 15 years and over	Women		Men	
	active	inactive	active	inactive
Domestic work, shopping, maintenance, care	32:55	43:10	18:50	27:40

GERMANY

Organisation: Federal Statistical Office.

Reference years:

- 1991/92.

1991/92 TIME USE SURVEY

Publication: Ehling, M. and Schweitzer, R. (1991), *Zeitbudgeterhebung der amtlichen Statistik*, Heft 17 der Schriftenreihe “Ausgewählte Arbeitsunterlagen zur Bundesstatistik, (hrsg. vom Statistischen Bundesamt), Wiesbaden.

1. *Reference population*

Size of the sample: 7 200 private households (16 000 respondents).

Geographical coverage: West and East Länder.

Age range: 12 years and over.

2. *Data collection methods*

- Introductory and final interview.
- Direct questions on paid and unpaid help, childcare, persons in need of care.
- 2-successive-day diary.
- Survey period: 4 periods over the year (October, January, April, July).
- Length of activity blocks: 5 minutes.
- Post-coding of activities.

3. *Activities*

Level of disaggregation:

- 200 detailed activities.
- 10 major groups, of which: housekeeping activities; handicraft activities; honorary function, social services; care and attendance of persons.

Specific activities:

- Travel activities: YES, associated with each major group.
- Assistance to other households: YES, “for whom” coding.
- Voluntary activities in social organisations: YES, “for whom” coding.

Recording of:

- Simultaneous activities: choice of a main activity; possible record of one secondary activity.
- Presence or help of other persons: YES, “with whom” coding (8 categories).

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 12 years and over	Women	Men
Total unpaid work	35:14	19:08
<i>of which:</i> voluntary activities	0:56	1:24

ITALY

Organisation: ISTAT.

Reference years:

- 1988-89 (Indagine Multiscopo).

1988-89 TIME USE SURVEY

Publication: Sabbadini, L.L. and Palomba, R. (1994), *Tempi diversi – L'uso del tempo di uomini e donne nell'Italia di oggi*, ISTAT.

1. **Reference population**

Size of the sample: 19 728 private households (40 000 persons).

Response rate: 68.5%.

Geographical coverage: national.

Age range: 3 years and over.

2. **Data collection methods**

- Questionnaire.
- 1-day time diary.
- Survey period: throughout the whole year (June to May).
- Length of activity blocks: start and end time for each activity.
- Post-coding of activities.

3. **Activities**

Level of disaggregation: 150 detailed activities.

Recording of:

- Simultaneous activities: choice of a main activity; possible record of one secondary activity.
- Presence of other persons: YES, “with whom” coding.

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 14 years and over	Women	Men
Domestic activities, care, shopping	38:30	8:24

NETHERLANDS

Organisation: Central Bureau of Statistics.

Reference years:

- 1986 Pilot Survey.
- 1987.
- 1988.

1988 TIME USE SURVEY

Publications:

Stoop, I.A.L. and Oudhof, J. (1989), “Designing a time use survey on informally productive activities”, *CBS Select, 5; Statistical Essays*, Netherlands Central Bureau of Statistics, Voorburg/Heerlen.

Exel, J. (1993), *A Survey on Time Use in the Netherlands. General Results 1988*, Report BPA No. H 2095-93-S5, Netherlands Central Bureau of Statistics, Voorburg/Heerlen.

1. **Reference population**

Size of sample: 7 434 private households.

Response rate: 53% (3 909 households, 6 443 persons).

Geographical coverage: national.

Age range: 12 years and over.

2. **Data collection methods**

- Individual and household questionnaires.
- Direct questions on work for other households, voluntary work and services received from other households.
- 2-day diary.
- Survey period: throughout the whole year (January to December).
- Length of activities blocks: 15 minutes.
- Pre-coded list of activities.

3. Activities

Level of disaggregation:

- 106 detailed activities.
- 9 major groups, of which: domestic work; shopping and services; childcare; household maintenance; organisation and voluntary activities.

Specific activities:

- Travel: YES, associated with each major group.
- Assistance to other households: YES, “for whom” coding.
- Volunteer and community work: YES, “for whom” coding.

Recording of:

- Simultaneous activities: no secondary activities recorded.
- Presence or help of other persons: YES, direct questions.

4. Main results

Average daily hours spent in unpaid work (in hours and minutes):

Persons 12 years and over	Women	Men
Total unpaid work	4:53	2:33
<i>of which:</i> organisation and voluntary activities	0:15	0:20

NEW ZEALAND

Organisation: Department of Statistics.

Reference year: 1990 Pilot Survey.

1990 TIME USE SURVEY

Publication: Department of Statistics (1991), "Testing Time", *Report of the 1990 Time Use Pilot Survey*, Wellington.

1. *Reference population*

Size of the sample: 627 private households: one or two (in the case of a couple) persons per household.

Response rate: 45%.

Geographical coverage: national.

Age range: 12 years and over.

2. *Data collection methods*

- Questionnaire, interview.
- 48-hour diary.
- Survey period: August.
- Length of activity blocks: 5 minutes.
- Post-coding of activities.

3. *Activities*

Level of disaggregation:

- 254 detailed activities.
- 12 major groups, of which:
 - domestic work and household administration;
 - childcare and helping/caring for other household members;
 - unpaid work in the community;
 - unpaid production of goods.

Recording of:

- Simultaneous activities: choice of a main activity; possible record of three secondary activities.

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 12 years and over	Women	Men
Domestic work, care of children and other household members, unpaid work in the community	33:36	20:10

NORWAY

Organisation: Central Bureau of Statistics.

Reference years:

- 1971/72.
- 1980/81.
- 1990/91.

1990/91 TIME USE SURVEY

Publication: Central Bureau of Statistics (1992), *Tidsbruk og tidsorganisering 1970-90* (The Time Use Surveys 1970-90), NOS C 10, Oslo.

1. Reference population

Size of the sample: 4 862 persons.

Response rate: 64%.

Geographical coverage: national.

Age range: 16 to 79 years.

2. Data collection methods

- Questionnaires.
- 2-day diary.
- Survey period: throughout the whole year.
- Length of activity blocks:
 - 15 minutes during the day
 - 30 minutes at night.
- Post-coding of activities.

3. Activities

Level of disaggregation:

- 91 detailed activities.
- 5 major groups of which: household work and family care (30 activities).

Specific activities:

- Travel: YES, associated with each major group (4 means of transport).
- Assistance to other households: YES, specific activity.
- Volunteer and community work: under “other leisure”.

Recording of:

- Simultaneous activities: secondary activities are registered on just one of the diary days.
- Presence or help of other persons: YES, “with whom” coding (5 categories).

4. Main results

Average daily hours spent in unpaid work (hours and minutes):

Persons 16-79 years	Women	Men
Household work and family care	4:22	2:37

SWEDEN

Organisation: Statistics Sweden.

Reference years:

- 1984-85 Pilot Survey.
- 1990-91.

1990-91 TIME USE SURVEY

Publications:

Rydenstam, K. (1992), *I tid och otid* (At all times), Living conditions, Report No. 79, Statistics Sweden.

SCB (1992), *The Swedish Time Use Survey*, Living conditions, Report No. 80, Statistics Sweden.

1. **Reference population**

Size of the sample: 5 000 persons supplemented by 300 single mothers.

Response rate: 75%.

Geographical coverage: national.

Age range: 20-65 years.

2. **Data collection methods**

- Individual and household questionnaires.
- 2 day diary.
- Survey period: September to May.
- Length of activity blocks: 10 minutes.
- Post-coding of activities.

3. **Activities**

Level of disaggregation:

- 140 detailed activities.
- 5 major groups, of which: household work (domestic work; maintenance; childcare and other care; purchasing goods and services; other household work; travel in relation to household work).

Specific activities:

- Travel: YES, associated with each major group.
- Assistance to other households.
- Volunteer and community work: YES, separate activity “participation in organisations”.

Recording of:

- Simultaneous activities: choice of main activity, possible record of one secondary activity.
- Presence of other persons: YES, “with whom” coding.

4. Main results

Average weekly hours spent in unpaid work (in hours and minutes):

Persons 20 to 65 years	Women	Men
Total unpaid work	34:00	21:03
<i>of which:</i> community and volunteer work	0:43	0:54

B. MONETARY ESTIMATES OF HOUSEHOLD PRODUCTION

AUSTRALIA

Organisation: Australian Bureau of Statistics.

Reference years: 1986/87, 1992.

Method: net value added (labour inputs).

1992 ESTIMATES

Publication: Castles, I. (1994), *Unpaid Work and the Australian Economy 1992*, Occasional Paper, Australian Bureau of Statistics, cat. No. 5240.0.

1. Volume ESTIMATES

Data source:

Labour inputs: national Time Use Survey 1992 (see Section A).

2. Monetary ESTIMATES

Methods of valuation of labour inputs:

- Preferred: market replacement cost with specialised substitutes (SP).
- For comparative purposes:
 - market replacement cost with a global substitute (GL)
 - net opportunity cost (NOC)
 - gross opportunity cost (GOC).

Wage rates used:

- SP: average national wage rates of full-time, non-managerial workers in “equivalency” groups of occupations; 10 different functions.
- GL: average national wage rate of a professional housekeeper.
- GOC: average national wage rates applicable for each group in the population.

- NOC: as above (GOC), minus income tax and some other taxes (*e.g.* medicare levy), minus work-related expenses, plus employer's on-costs.

3. Main results

Value of unpaid work (% of GDP):

	GOC	NOC	GL	SP
Total unpaid work	69	52	54	58
<i>of which:</i> unpaid household work	64	48	49	53
Women's share (%)	66	66	66	65

CANADA

Organisation: Statistics Canada.

Reference years: 1971, 1981, 1986, 1992.

Method: net value added (labour inputs).

1992 ESTIMATES

Publication: Chandler, W. (1994), "The value of household work in Canada, 1992", *National Income and Expenditure Accounts: Quarterly Estimates*, Statistics Canada, Cat. No. 13 001, Fourth Quarter 1993.

1. **Volume ESTIMATES**

Data source:

Labour inputs: 1992 General Social Survey on Time Use (see Section A).

2. **Monetary ESTIMATES**

Methods of valuation of labour inputs:

- Opportunity cost:
 - gross (GOC)
 - net (NOC).
- Market replacement cost with specialised substitutes (SP).

Wage rates used:

- GOC and NOC:
 - Hourly earnings by province and sex, based on Census information.
 - Before tax (GOC) and after-tax (NOC).
- SP:
 - average hourly earnings by province of people employed full-year/full-time in occupations within each equivalency group, weighted by the number of people employed in each occupation.
 - equivalency groups for 44 household activities.
 - hourly earnings for each occupation: weighted average of earnings for men and women.

3. **Main results**

Value of unpaid work (% of GDP):

	GOC	NOC	SP
Domestic work, care-giving for household members and shopping	46.3	30.6	41.4
Women's share (%)	57.6	61.7	63.4

DENMARK

Organisation: Statistics Denmark.

Reference years: 1970-90.

Method: net value added (labour inputs).

1970-90 ESTIMATES

Publication: Jensen, P.R. and Mollgaard, E. (1995), *On the Measurement of a Welfare Indicator for Denmark 1970-1990*, The Rockwool Foundation Research Unit, Statistics Denmark.

1. **Volume estimates**

Data sources:

- Labour inputs: Time Use Surveys held in 1964, 1975, 1987 (see Section A).
- Linear interpolation for other years.

2. **Monetary estimates**

Method of valuation of labour inputs:

- Opportunity cost (OC).
- Market replacement cost with a global substitute (GL).

Wage rates used:

- OC: average hourly wages for white- and blue-collar workers by sex; imputed wages for self-employed; wages for unemployed or outside the work force : wages of unskilled blue-collar workers.
- GL: wages of a professional cleaner and wages of an undeclared cleaner.

Wage composition:

After-tax wage, using the 1980 average income tax rate for all of the years.

3. Main results

Value of unpaid work (opportunity cost method using 1980 wages):

	1970	1980	1990
Domestic work, childcare, maintenance, shopping (transport not included) (millions of DKK)	89 393	97 036	103 137
Women's share (%)	79	67	60

FINLAND

Organisation: Statistics Finland.

Reference years: 1980, 1990.

Method: input based (output: sum of inputs).

1990 ESTIMATES

Publication: Vihavainen, M. (1995), *Calculating the Value of Household Production in Finland in 1990*, Statistics Finland, Working Papers, No. 6.

1. Volume estimates

Data sources:

- Labour inputs: Time Use Survey 1987-88 (see Section A).
- Intermediate and capital consumption: National Accounts and Household Expenditure Survey, 1990.

2. Monetary estimates

Methods of valuation of labour inputs:

- Market replacement cost with a global substitute (GL).
- Opportunity cost (OC).

Wage rates used:

- GL: average wages per hour of a municipal home helper.
- OC: average wages for all employees exclusive of overtime.

Wage composition:

Wages plus employers' compulsory contribution to social security schemes and holiday compensation.

3. Main results

Value of unpaid work (% of GDP):

	OC	GL	
Domestic work, childcare, shopping and errands	59	45	
Share of labour in total household output (%)		76	<u>51</u>

FRANCE

Organisation: INSEE.

There is no published estimate based on the most recent time use survey (1985-86). Methods and results of an earlier estimate based on the 1975 time use survey of the urban population can be found in: A. Chadeau and A. Fouquet (1981), "Le travail domestique: essai de quantification", *Archives et documents*, No. 32, INSEE, Paris, August.

GERMANY

Organisation: Federal Statistical Office.

Reference year: 1992.

Method: input based (output: sum of inputs).

1992 ESTIMATES

Publication: Schaefer, D. and Schwarz, N. (1994), "Wert der Haushaltproduktion 1992", *Wirtschaft und Statistik*, 8/1994.

1. Volume estimates

Data sources:

- Labour inputs: Time Use Survey 1991/92 (see Section A).
- Intermediate and capital consumption: National Accounts.

2. Monetary estimates

Methods of valuation of labour inputs:

- Market replacement cost with a global substitute (GL).
- Market replacement cost with specialised substitutes (SP).
- Opportunity cost (OC).

Wage rates used:

- GL: wages of a qualified housekeeper.
- SP: average wages of specialist occupations (reflecting the mix of qualifications of the occupation).
- OC: average wages of insured full-time employees.

Wage composition:

- Effective wages including unregular payments.
- Net wages and total labour cost (labour cost: net wage plus labour tax plus employer's and employee's social security contributions).

Hourly wage rates calculation:

Based on actual working hours (actual hours: normal hours minus paid leave, public holidays and absence).

3. **Main results**

Value of unpaid work (% of GDP):

	OC	GL	SP
Net wages	96	32	34
Total labour costs	100	68	72
Share of labour in total household output (%)		62	

NEW ZEALAND

Organisation: Department of Statistics, National Accounts Branch.

Reference year: 1991.

Method: net value added (labour inputs).

1991 ESTIMATES

Publication: Department of Statistics (1992), *Options for the Valuation of Unpaid Work in New Zealand 1991*, Wellington.

1. Volume estimates

Data sources:

Labour inputs: 1990 Pilot Time Use Survey (see Section A).

2. Monetary estimates

Methods of valuation of labour inputs:

- Opportunity cost (OC).
- Market replacement cost with a global substitute (GL).
- Market replacement cost with specialised substitutes (SP).

Wage rates used:

- GL: average hourly wage of an housekeeper.
- SP: selection of wage rates for individual fonctions.
- OC (2 valuations):
 - OC I: legal adult minimum wage.
 - OC II: average ordinary time wage rates.

Wage composition:

- Ordinary pay.
- Gross wage rates (before tax).

3. Main results

Value of unpaid work (% of GDP):

	OC		GL	SP
	I	II		
Total unpaid work	29	66	42	51
Women's share (%)	65	60	65	63

NORWAY

Organisation: Central Bureau of Statistics.

Reference years: 1972, 1981, 1990.

Method: net value added (labour inputs).

1990 ESTIMATES

Publication: Dahle, A.B. and Kitterod, H. (1992), *Time Use Studies in Evaluation of Household Work. The Norwegian Experience*, Central Bureau of Statistics.

1. Volume estimates

Data sources:

Labour inputs: Time Use Survey 1990/91 (see Section A).

2. Monetary estimates

Valuation methods of labour inputs:

- Market replacement cost with a global substitute (GL).
- Market replacement cost with specialised substitutes (SP).

Wage rates used:

- GL: wages of qualified full-time municipal home helpers.
- SP: wages of persons employed in the market equivalent activities.

Wage Composition:

Including employers' national insurance contribution.

3. Main results

Value of unpaid work (% of GDP):

	GL	SP	
Household work and family care	38	37	
<i>of which:</i> Men's contribution	13	13	
Women's contribution	25	24	<u>57</u>