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PROMOTION AND DEVELOPMENT OF TIME-USE SURVEY

Valuation of unpaid work by women and men in Estonia

Submitted by Statistics Estonia

I. DEFINITION OF UNPAID WORK ACCORDING TO EUROSTAT
RECOMMENDATIONS CONCERNING THE SATELLITE ACCOUNTING OF
HOUSEHOLD PRODUCTION

1. The concept of unpaid work covers productive activities which are market-oriented and in which the supplier and the beneficiary of services are different persons. Such activities are defined in accordance with the extended definition of accounting. Productive activities are distinguished from non-productive activities by the so-called third-party criterion: an activity is considered productive if it can be performed by another person (e.g., babysitting) and non-productive if the third-party criterion is not satisfied (e.g., eating).

2. This means that if another person could carry out that activity for you it is classified as productive, whereas, if only you can carry out an activity then it should be excluded. For example taking care of a child is productive according to the third person criteria sense, as you

can pay someone else to look after your child, while eating is not as nobody else can do this for you.

3. As outlined in the Eurostat working paper „Proposal for a Satellite Account of Household Production“, household production has five principal functions. These are providing housing, providing nutrition, providing clothing, providing care and education, and voluntary work. Each of these principal functions has an output, which involves a principal activity plus various ancillary activities. For example, if the principal function is providing housing, the output is accommodation for members of households. These include a number of ancillary activities than repairs of dwelling, making, repairing and maintaining equipment and so on. In following tables each of the codes in the pre-coded diaries has been allocated, where possible, to five production headings. There are some codes, which could not be allocated in this way. They have, for the time being, been put in a „Other Productive Activities“ category.

Table 1. Time Use Average Minutes per Day by Activity in Estonia, 1999-2000

Principal activities	Outputs (products)	All	%	Male	Female
Providing Housing	Accommodation for members of households; services produced by owner-occupied dwelling	52	4	55	47
Providing Nutrition	Meals, Snacks, drinks for the members of households; inc.gardening	93	6	55	125
Providing Clothing	Clothes and their care of the members of households	19	1	1	32
Providing Care	Care services to the children, the sick, and the elderly	21	2	8	31
Voluntary work	Goods and services for other institutions	14	1	17	13
Other "Productive" Activities	Shopping, management, travel; Hunting, fishing	50	3	48	53
Unpaid work (minutes per day)		249	17	184	301
Paid work		196	14	234	167
Non "Productive" Activities		995	69	1022	972
Total day		1440	100	1440	1440

Source: Statistics Estonia. Time Use Survey, 1999-2000

4. Table 1 shows the resultant figures for the total average minutes per day in Estonia for the household satellite account production headings, paid work and non-productive activities during year (1999-2000). Paid work has been shown separately for description total work amount (included unpaid and paid work), but paid work is already included in the National Accounts. The category “non-productive activities” contains all other time use activities including personal care, spare time.

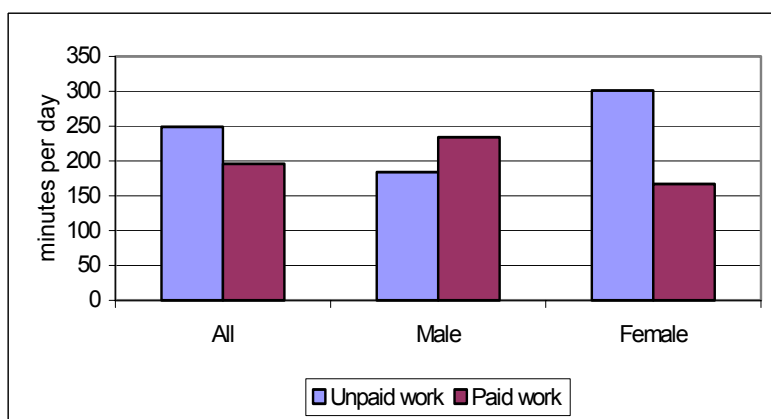
5. The average time spent on household production in 1999-2000 is 249 minutes per day and for 17 % of the day on average. In total women spent more time on household production than men, difference 1,6 times for women. From the table it can be seen that men spent more time than women on providing housing and on voluntary work. The biggest difference between men and women is in spending time on providing nutrition, where women spent over one hour more than men.

Figure 1. Percentage of Time Use in Total Work by Gender



Source: Statistics Estonia. Time Use Survey, 1999-2000

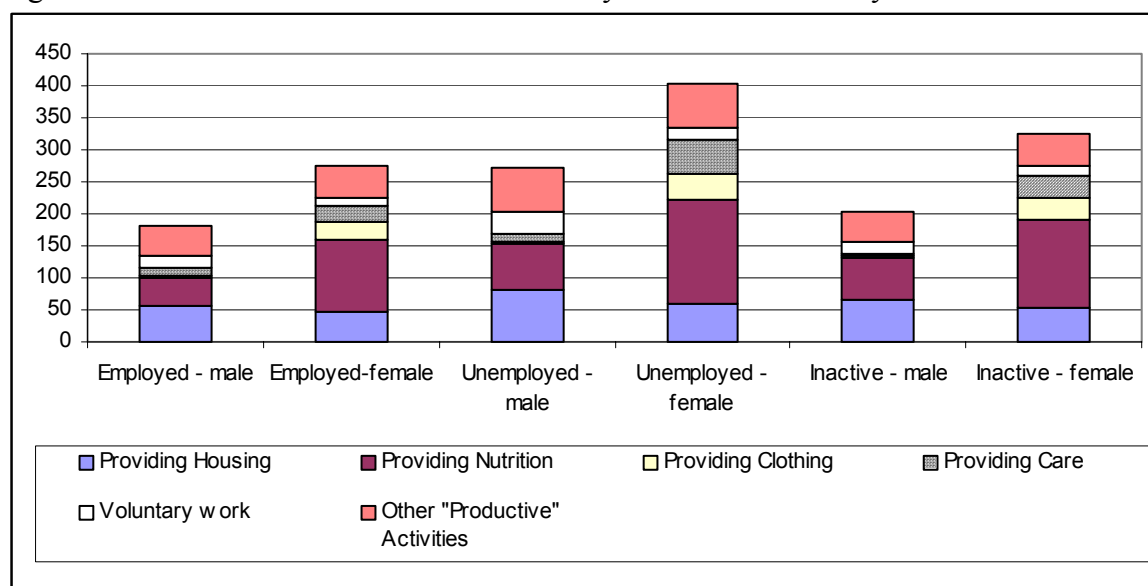
Figure 2. Time Use in Unpaid Work and Paid Work by Gender



Source: Statistics Estonia. Time Use Survey, 1999-2000

6. The figure 1 shows the percentage of unpaid and paid work from total amount of work. Here it can be seen that unpaid work accounted for 56% of the total amount of work per day. From figure 2 it can be seen that women spent more of their time on average on unpaid work than on paid work. Comparing men's and women's total time spent on paid and unpaid work it can be seen that women spent approximately 50 minutes more time on average on the work per day than men.

Figure 3. Time Use in Household Production by Social Status and by Gender



Source: Statistics Estonia. Time Use Survey, 1999-2000

7. The main production categories are broken down by social status in figure 3. According to the social status time spent on household production is varied. Figure 3 shows that unemployed people spent much more time on household production than employed or inactive people did. The average time spent on household production by unemployed people is 329 minutes per day compare with employed people - 228 minutes per day and with inactive people - 277 minutes per day. According to the survey, household production by unemployed and inactive people accounted for 42% of the day on average. The figure 3 shows that the difference between men by social status is on the smaller scale than between women. The unemployed women pattern differs from employed and inactive women pattern. The total amount of unpaid work for unemployed women is 1,4 times and 1,2 times more than for employed and inactive women. The main amount from unpaid work for unemployed women is providing nutrition (40%), providing care (13%) and providing housing (15%). The unemployed women spent much more time on providing nutrition and providing care than employed or inactive women did.

II. PROBLEMS RELATING TO THE MEASUREMENT OF PAID AND UNPAID WORK.

8. In Time Use Surveys, problems arise in connection with different methods of measurement in case of paid and unpaid employment. Ideally, paid work should only include the time that a person spends at work (in his/her workplace) performing activities defined in his/her employment contract. In reality, however, the time measured as working time includes not only productive time, but also several non-working periods such as the time spent making personal phone calls, smoking, talking with colleagues, etc. Thus, in case of paid work, the gross volume of work is measured, which frequently includes also the time spent on getting to work and getting home from work and lunch breaks. In these cases, the gross volume of paid work has

been overestimated by the inclusion of time not related to productive activities (non-working time).

9. In case of unpaid work, however, all episodes are coded as different activities. For example, if a person stops working to have a cup of tea, the episode is not included in unpaid work but coded as a personal activity. The same holds for activities like talking with other household members (coded as spare time), smoking (spare time), making phone calls (spare time), etc. The volume of unpaid work thus includes only productive activities while all other activities are classified according to the purpose of the activity (as, e.g., personal activities or spare time). In case of unpaid work, the net volume of work is measured.

III. IMPUTATION OF MONETARY VALUE TO UNPAID WORK.

10. Unpaid work is performed by household members who produce goods and services for the household's own consumption. The time spent on household work - measured by the Time Use Survey - is assigned a monetary value, which forms the basis for the measurement of the monetary value of the work performed by household members. International studies have revealed that using different wage standards leads to significant differences (up to 100%) in total values. It should be noted, however, that the imputation of monetary values for working time on the basis of the Time Use Survey is the only possibility for measuring both the monetary and temporal volumes of unpaid work.

11. Unpaid work can be valued in a number of ways. Here the three methods of measurement are used:

- Opportunity cost method;
- Replacement cost method - the "specialist" approach;
- Replacement cost method - the "generalist" approach.

12. The main issues here are:

- which wage standards should be used,
- whether the imputation should be based on gross or net wages.

13. The opportunity cost method is based on consumer theory. A rational consumer is assumed to divide his or her time between leisure, housework and market work in such a way as to gain maximum utility. It is true when the value of housework time equals the market wage rate of that person, it is his or her opportunity cost of time. In this estimation, the average wages by sex have been used for valuing the opportunity cost.

14. Replacement cost method – the “specialist” approach. This method assesses unpaid work based upon wages paid to occupations perform similar activities as are done in households. It has been pointed out that this method is affected by a disparity in productivity between people engaged in unpaid work and occupation due to differences in economies of scale and in the capital equipment ratio.

Table 2. The average hourly wages by activities

Principal activities	Outputs (products)	All (EEK)	Male (EEK)	Female (EEK)
Providing Housing	Accommodation for members of households; services produced by owner-occupied dwelling	20.50	22.20	18.80
Providing Nutrition	Meals, Snacks, drinks for the members of households; inc. gardening	19.33	20.93	17.73
Providing Clothing	Clothes and their care of the members of households	17.78	20.42	15.14
Providing Care	Care services to the children, the sick, and the elderly	17.96	19.85	16.06
Voluntary work	Goods and services for other institutions	21.03	24.08	17.98
Other "Productive" Activities	Shopping, management, travel; Hunting, fishing	27.37	31.07	23.67

Sources. Statistics Estonia

15. Table 2 shows the specialist replacement cost method, based on the wage standards for different specialist areas.

16. Replacement cost method – the “generalist” approach. This method assesses unpaid work based upon wages of housekeepers. One problem pointed out with this method is that housekeepers do not perform all unpaid work and this method may not be appropriate for assessing volunteer work. Here the wages of generalists in categories 9131 according to ISCO – 88 (International Standard Classification of Occupations) have been used.

17. In this research gross wages have been used. The main indicators that wage statistics are based on are gross wages. Here hourly wages are used, which include compensation for holiday, sick leaves etc.

IV. MONETARY VALUE OF UNPAID WORK: ANALYSIS OF THE RESULTS.

18. The monetary value of unpaid work was estimated by using wages based upon the number of hours spent on such activities.

Value of unpaid work = per capita hours of unpaid work x hourly wages x population.

19. In this estimation, the monetary value of unpaid work was computed using three different types of wages in accordance with the following three concepts.

- 1) Opportunity cost method
- 2) Replacement cost method, which is divided for two:
 - 2.1) Specialist approach
 - 2.2) Generalist approach

20. The analysis shows that different methods of measurement yield significantly different results also in Estonia.

Table 3. Assessed monetary value of unpaid work, million kroons

	Total	% of GDP	Men	Women	Women/Men
Replacement cost method "specialist approach"	36 559,0	38	15 520,0	23 608,0	1,52
Opportunity cost method	55 807,0	58	21 376,0	31 664,0	1,48
Replacement cost method "generalist approach"	25 826,0	27	8 941,0	16 525,0	1,85

Sources. Statistics Estonia, Wage statistics

21. The data appear to be consistent with international reports: the use of the opportunity cost method, based on the average hourly wages for occupations and the generalist replacement cost method, based on the average hourly wages for housekeepers, leads to a 100% difference in measurement results. The specialist replacement cost method yields medium results between the other two approaches.

22. Although there are significant differences between the wages payable to men and women - according to wage statistics, women's wages account for only 75% of men's wages -, the measurement results show that the monetary value of women's unpaid work exceeds that of men by 1.5 to 1.8 times, irrespective of the method of measurement.

23. In 1999-2000, the total assessed value of unpaid work in Estonia amounted to around 38 billion to 53 billion kroons. Unpaid work accounts for a relatively large share of the gross domestic product: up to nearly 60% in case of the opportunity cost method and 27% to 38% in case of the replacement cost methods, which is comparable to other countries. In Finland, for example, unpaid work accounts for 45% of the GDP (the generalist replacement cost method). According to Sääntti (1982), the results may vary between 42 and 49%, depending on the method. The larger variance in Estonia's results is due partly to the higher degree of heterogeneity in wages as the total time volume of unpaid work is somewhat larger in Estonia than in other countries, and partly to the fact that the Estonian data derive from a single source (Wage Statistics) as there are no other adequate data sources available.

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