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Women's relative position and the division of household work: A study of French couples

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1. Introduction

The modeling of the decision-making of the family is one of the fields in which the economic theory brought new and interesting elements in the recent years. New windows of empirical applications have been opened that provide new and increasingly realistic results enabling us to apprehend the processes of household decision making. With the availability of increasing number of time use and household surveys in different countries, we are able now to make international comparisons of household division of work leading to development of new models related to household decision making.

The participation rate of women in the labour market which was low in most of the countries at the beginning of the 20th century (Marchand & Thélot, 1991, Thévenon, 2008) has been observed to strongly increase during the second half of the century. Besides this massive participation of women in the labour market in most of the developed countries, the sharing of time among men and women between market work and household work is still highly gender specific (Goldschmidt-Clermont and Pagnossin-Aligisakis, 1995, Rizavi and Sofer, 2008). A report of the European Commission (Winqvist, 2004) shows that European women share roughly about 60 to 70% of household work and the rest, 30 and 40% is shared by men. About the division between market work and household work, European women, in these countries, spend roughly between 60 and 70% of their working time doing household work and between 30 and 40% working in the market, while men devote between 55% and 65% of their working time to market work and thus between 35% and 45% only to household work, with a total working time nearly always higher for women than for men. Though it may be thought that observed individual characteristics of men and women, such as wages, might explain, at least partly, that women invest less than their partner in the labour market and more in the family (Becker, 1981), the gender division of labour still is an unsolved issue for economists. Studies show that education, wages or other measurable variables have a very small impact, if any, upon the sharing of household work (Hersch and Stratton, 1994, Anxo & Carlin, 2004, Aronsson et al, 2001, Rapoport and Sofer, 2005).

When the division of the labour in the market and within the household is analyzed, the choice to work in the market or household also should be taken into consideration. These choices are the central part of gender studies and are at the heart of the equality between men and women. Economic models, at least those which integrate the household production (Becker, 1981, Gronau, 1977, Kooreman and Kapteyn, 1987, Apps and Rees, 1997, Chiappori, 1997) provide predictions about the sharing of work (either market or household

work) which are far from being totally met in the real world, especially when considering household work.

In this paper, we first show, using existing international comparisons (Winqvist, 2004), that some regularities can be found in the sharing of total work between men and women. We then try to find which, if any, economic variables can explain the sharing of household work. To do this, we look at those couples where the relative economic position of women is better than average, using a battery of criteria. The aim is at highlighting the variables that most likely influence the division of labour within the household (Rapoport and Sofer, 2005, Rizavi, 2006, Sofer, 1999). We use French data from the INSEE (Survey “Emploi du Temps”), which gives information on the allocation of time for both partners in couples and simultaneously estimate the household work of both partners looking at the influence of a good relative position of the wife as defined along several criteria.

What we find is that women who are in a better economic position, especially relative to their partner do less household work and, conversely, that their partners do more¹. But there is no reversal: women always do more household than their husband, whatever their relative position in the labour market.

We first present in section 2 some stylized facts about the division of work within the household and in the market in Europe. In the next section, we survey briefly different economic approaches to household decision making. Section 4 is devoted to the presentation of the data we use. The results of the estimations are given in section 5. Section 6 concludes.

2. A few stylized facts

2.1 Labour force Participation

The remarkable increase in the labour force participation of women in Europe during the twentieth century is reshaping, although not very speedily, not only the gender division of labour within the household but the gender division of total work (including both paid and unpaid work) as a whole. Thévenon (2008) shows that the female employment continues to increase even beyond the 1990s. In the earlier 15 members of the European Union, we can observe a very sharp increase during that period in case of women (7.7%) as compared to men (0.4%). The data presented by Thévenon (2008) that was taken from the European Union

¹ This is an opposite result to what is found for the U.S (see Bittman et al, 2001), where high paid women tend to do *more* household, not less.

Labour force surveys also shows that the gap between men's and women's labour force participation has narrowed considerably.

2.2 The gender division of household work

Table 1 below shows how much men and women share the household work in the countries under consideration, and shows the total time spent in household work by men and women aged 20 to 74. It seems that the sharing of household work between men and women is remarkably stable among the different countries of Europe. European women, in these countries share about 60 % to 66 percent of household work. Sweden and the Nordic countries (Norway and Finland) are the most egalitarian with a sixty-forty sharing. Conversely, France is the country where inequality is the highest (with men doing only 34% of all domestic work, but note that more southern European countries, like Italy or Greece, are not included here).

Table 1: Household work of persons aged 20 to 74 in 10 EU countries

	BE	DE	EE	FR	HU	SI	FI	SE	UK	NO
Hours and minutes per day										
Women	4:32	4:11	5:02	4:30	4:57	4:57	3:58	3:42	4:15	3:47
Men	2:38	2:21	2:48	2:21	2:39	2:39	2:16	2:29	2:18	2:22
Both	7:10	6:32	7:50	6:51	7:36	7:36	6:14	6:11	6:33	6:09
Share of total time spent by women and by men %										
Women	63	64	64	66	65	65	64	60	65	62
Men	37	36	36	34	35	35	36	40	35	38

Source: Winqvist, 2004 (Tables 1.1 & 1.2)

We cannot ignore the fact either that this unequal sharing also corresponds to a strong specialization among domestic tasks, with women rather specialized in laundry and cooking, for example, and men rather in repairs. Only a few tasks, like shopping and gardening, are shared quite equally according to the same report. Also we can note the differences between countries in the total number of hours spent on domestic tasks, with much more time spent in eastern countries (Estonia, Slovenia and Hungary) than in Nordic Countries where it is the lowest.

2.3 The gender division of total work

Note : Gainful work includes hours worked in first and second jobs, overtime, work brought home, training during working hours and business trips. Working hours do not include lunch breaks and daily travel to and from work. Domestic work includes work done for own household. Source : Winqvist, 2004, tables 1.1 & 1. 2

It is clear that in spite of the now massive participation of women in the labour market, the gender division of labour, though it generally does not imply anymore a complete specialization still remains highly differentiated by gender. Is it only a result obtained on average, possibly due to average differences in women's and men's wages, for example? Or are usual economic variables of little help in explaining this phenomenon?.

3. Some theoretical considerations

The earlier unitary model of household (Becker, 1965), based on assumptions like income pooling and that the income from all sources is also pooled, had some inherent weaknesses. Families were treated like single decision-making units (Becker, 1981). The maximization of a common utility function is constrained by considering a total family income that is a sum of incomes from all sources. The division of the labour and the distribution of consumption between partners (as well as the consumption of the children) which results from the maximization of the so called household utility function should thus depend only on the value of this total income, and not of who is the provider of income of any type. In other words, the transfer of non-labour income of a spouse to the other (for example of the family benefits) should have no effect on the equilibrium of the household. However this result was empirically refuted in a nearly all the tests run. (Thomas, 1990, Schultz, 1990, Fortin and Lacroix, 1997, Lundberg, Pollak and Wales, 1997, inter alia). In Becker's analysis, the sharing of work in household production is driven only by efficiency, i.e. by cost and productivity considerations. This is also true in more recent and realistic models, which acknowledge the fact that the household is composed of individuals with different tastes and preferences. Cooperative models (Manser and Brown, 1980, Horney and Mc Elroy, 1981, Mc Elroy, 1990) and collective models of the household (Chiappori, 1988, 1992,) take into account that several decision makers exist, or even compete within the household, and that a process of negotiation takes place. A few of these models only include household work and draw predictions about its sharing (see Apps and Rees, 1997, Chiappori, 1997, Aronsson et al, 2001, Rapoport, Sofer, Solaz, 2009). All of them are based upon the efficiency of household production again (like in Becker), which implies that if two partners have the same productivity in household production, the one who has the lowest production costs (the lower

hourly wage) should devote more time to household production than his/her partner. As we shall see, our results challenge either the equal productivity or the efficiency assumption.

4. The Data

The latest available time use survey in France is the French Time-Use survey (Enquête Emplois du temps) conducted by INSEE in 1998-99. It aims at measuring daily activities as precisely as possible. It was conducted throughout the year in successive stages to avoid seasonal effects. On the day of the interview, the respondents wrote down their activities, indicating the time spent on each activity where time was divided in 10-minute periods. As several activities may be performed at the same time, the survey allowed two activities to be listed, one being considered as the main activity and the other as secondary. All household members above 15 were surveyed.

The survey includes a base of 8,186 households, of which 7,460 are complete. This gives 20,370 individuals, among whom 16,442 are at least 15-year old. The activities contain one observation per completed booklet line, with 316,097 observations where 144 different types of activities are listed regrouped by INSEE on the basis of activities being of the same type. For the purpose of this study, we use a reduced sample of couples (married or cohabitants) where both of them work in the labour market. Couples with and without children are included. Table 3 below gives a brief statistical description of the reduced sample of couples where both partners participate in the labour market activities.

It shows that, within our sample, both the hourly wage and monthly salary averages are greater for men as compared to women. This also holds true in case of the average minutes spent per day in the labour market. On the other hand, the average time spent in the household work by women in the sample is greater than that of men by 100 minutes per day. At least one fourth of the women and men in the sample have an education of Bac+2 and greater.

Table 3: Description of the sample of 1737 couples (French time use survey 1998)

Variable	Observations	Mean (weighted)	Standard Deviation
Male hourly wage (in FF)	1520	62.244	36.255
Female hourly wage (in FF)	1561	53.150	34.929
Male monthly salary (in FF)	1523	10913.500	5775.131
Female monthly salary (in FF)	1573	7641.064	4112.082

Employment in labour market in minutes per day (men)	1737	293.546	248.478	
Employment in labour market in minutes per day (women)	1737	237.665	227.451	
Time spent in household work in minutes per day (men)	1737	158.655	142.826	
Time spent in household work in minutes per day (women)	1737	259.282	157.652	
Number of children up to 3 years of age	1737	0.128	0.351	
Number of children from to 3 to 15 years of age	1737	1.209	1.068	
Age of husband	1737	41.343	8.983	
Age of wife	1737	39.239	8.777	
Percentage according to different dummy variables				
<i>Education</i>			Women	Men
Without diploma/CEP/DFEO			17.16	18.6
BEPC,CAP,BEP			38.23	43.75
BAC (general and technical)			15.83	12.61
Bac+2 and Greater			28.79	25.04

5. Empirical Results

5.1 Methodology

First, we try to identify the women whose relative position is better than her life partner or other women in her employment position. In relation to the partner, the survey we used provides data on individual monthly salaries, individual education levels and different levels

of individual occupational status. As far as women's relative position with respect to her partner is concerned, we create three dummy variables indicating (taking a value of 1) if a woman's monthly salary is greater than that of her partner, or if her diploma is higher than her partner's, or if her occupational position is higher than her partner's. The reason behind using the monthly salary here is simple. In fact, it may be the bargaining power of the woman that may affect the division of work within the household and that may not depend on the hourly wages as many women may work for fewer hours as compared to their partner and hence earn less. The details for the educational levels considered and for the ranking of occupational status are given in Appendix.

Another indicator, high wage/position, is not in relation to a woman's partner but with reference to her type of employment status. It is based on the same occupational status indicator mentioned above. We believe that a woman that exhibits a greater tendency to work in the market, that we may call career oriented, may be earning a higher hourly wage as compared to other women in her subgroup of occupational status. We create a dummy indicating if a woman earns an hourly wage more than the average plus standard deviations of women of her subgroup with respect to her occupational status. We can call it a 'Wage / Position' variables. This indicates that a woman is earning very high wage as compared to most of the women working in the same type of employment.

Using these variables, we first show below summary statistics.

In a second stage, we run an econometric estimation with the same sub-sample, using 2SLS to simultaneously estimate two equations with the household work of both partners as dependent variables. This is because the household work decisions of the partners in a couple are made simultaneously and are interdependent. As this is clearly an endogenous variable, we do not introduce market time of any partner among the independent variables.

5.2 Results

In Table 4 below, we show for the different indicators or value of dummy variables mentioned above the amount of household work spent by both partners in each case.

It can be seen that, on the average, when women's relative position is better than her partner's in terms of salary, education or her position in employment then she reduces the household work and the partner increases the household work.. An exception is in the case where we do not measure women's relative position to her husband but see where she stands relative to other women in her employment position. Here, too, she decreases her household work but the average household work of men does not increase in this case.

	Men			Women		
Women's relative position	0	1	Change	0	1	Change
High Wage by employment status	161.84	156.13	-5.7	266.27	222.70	-43.57
Salary>husband	161.28	173.23	11.95	264.96	238.08	-26.88
Diploma>husband	153.93	169.60	15.67	268.65	252.67	-15.98
status>husband	158.03	186.81	28.78	264.98	248.27	-16.11

The results of the estimations of men's and women's household work are shown in Table 5 below. Four models have been estimated, each of them including one of the four dummy variables defined above. In the fifth model, all the variables have been introduced in the equations. The dummy variables defined above are significant most of the time (but not in all cases), in models 1 to 4 and have the expected sign: women's relative position seems to be very important. In three out of four cases men significantly increase their household work. It may be noticed that these three significant cases are the ones where the women's relative position is compared with her partner. In model 5, when introduced together, they are not significant any more, very likely because they are highly correlated. The case where we find insignificant result is where we compare women to other women in her employment status. But this is true only in the man's household work equation. The coefficient of this indicator becomes significant in the women's household work where she reduces her household work by 33 minutes if she is one of the high earners in her sub-group of employment position. Looking at the women's equation, though the impact of the dummies is, as expected, always negative, we find a significant decrease only in the case just mentioned when she has a higher status relative to other women (in models 4 and 5), but also when she has a higher wage as compared with her partner (again, because of the correlation between variables, this variable is significant only in model 1).

Notice that, if we look at the statistical description, we can observe that the average difference in men's and women's household work is at least 100 minutes per day. It is clear from the results that we can expect a narrowing gap in the household work of men and women when the women is more educated or earns more than her partner but we do not observe a role reversal because the decrease in this difference is much less than the average difference.

Table 5: 2SLS Simultaneous estimations of household work of men and women

Equation 1 - Dependent Variable : Household Work of Men					
	1	2	3	4	5
Children < 3	42.65 *	37.27 *	39.21 *	42.39 *	44.41*
Children 3-15	12.29 *	9.85 *	10.92 *	12.52 *	12.84*
Rural	19.11 **	18.23 **	18.49 **	19.52 **	17.77**
Age (Man)	1.11 **	0.74 ***	0.71 ***	0.82 **	1.01**
Less than 'BEPC/CAP/BEP'	reference	reference	reference	reference	reference
BEPC,CAP,BEP (Man)	19.12 ***	21.17 **	11.98	17.84 **	20.02***
BAC (Gen & Technical) - (Man)	23.21 ***	21.69 ***	10.15	19.92	19.87
Bac+2 and Greater - (Man)	-1.43	6.98	-8.14	-2.60	2.4
Week Day	-68.05 *	-66.58 *	-70.78 *	-66.51 *	-70.66*
Salary>partner	15.51 ***				6.35
Diploma>partner		18.75 **			11.01
Position>partner			29.97 *		21.72
High wage/position				3.12	6.15
Constant	125.34 *	132.16 *	149.17 *	136.95 *	124.57*
Equation 2 - Dependent Variable : Household Work of Women					
	1	2	3	4	5
Children < 3	121.51 *	115.02 *	112.72 *	120.98 *	122.57*
Children 3-15	27.44 *	25.15 *	24.79 *	25.25 *	26.91*
Rural	8.14	13.65 ***	9.29	7.66	6.33
Age (Woman)	1.17 **	1.26 *	1.31 *	1.56 *	1.46*
Less than 'BEPC/CAP/BEP'	reference	reference	reference	reference	reference
BEPC,CAP,BEP (Woman)	-29.44 **	-21.21 **	-23.50 **	-21.61 ***	-26.25**
BAC (Gen & Technical) (Woman)	-35.94 **	-31.28 **	-31.23 **	-27.32 **	-32.05**
Bac+2 and Greater (Woman)	-45.94 *	-49.13 *	-51.42 *	-42.19 *	-43.46*
Week Day	-61.72 *	-57.75 *	-60.25 *	-57.37 *	-60.66*
Salary>partner	-17.09 ***				-13.33
Diploma>partner		-2.16			4.43
Position>partner			- 0.34		-2.29
High wage/position				-33.66 *	-31.58**
Constant	237.17 *	229.49 *	232.62 *	217.80 *	226.22*
Observations	1447	1737	1640	1573	1429

*significant at 1%, **significant at 5%, ***significant at 10%

A few other variables are observed exerting an effect upon household work. Children, of course, play an important role in the household work distribution. Both men and women tend

to increase their household work when they have children, particularly with children less than three years old. The increase in household work of women is much larger and significant in all cases, where the women put another 110 to 120 minutes into household work. Educational levels have different effect. Men tend to work a little bit more in the household with higher educational levels which is significant in some cases. On the other hand, women tend to reduce their household work with higher educational levels which may be due to increased participation in the labour market. As expected, both men and women work less, within the household, during the weekdays than during the week-ends. Finally, both men and women tend to work more in the household if they belong to a rural area. This result is significant in almost all cases for men and in most of the cases for women.

6. Conclusion

Besides the increased labour market participation of women, the household work sharing still remains highly gender specific. The present paper used the French Time Use Survey, where we considered the couples who are both working in the Labour market. We focused on household work of men and women and tried to see what happens when women are the bread-winners or are more educated or, presumably, more productive than their partner in the labour market. The presence of children and educational levels seem to be important in the household division of Labour. More educated men seem to work a little bit more in the household. On the other hand, highly educated women tend to work a little less within the household but clearly the decrease in household work corresponds to much larger increase in the labour market participation, increasing the total work load of women. Rural couples seem to work more than urban couples within the household.

We especially focused on women's relative position in the labour market. We show that this factor is important in determining the sharing of household work. Women's better relative situation in the labour market relative to his increases her partner's household work, and tend to decrease hers. She still works more at home than he does, though, whatever her situation compared to his, but. the gap in household work of women and men tends to narrow down significantly in this case. This results challenges the usual economic assumption of efficiency in household production. Our results show that policies aiming at improving the women's situation on the labour market, hence in many cases the women's relative position with reference to their partner may produce also a more egalitarian division of household work. But they also show that direct incentives towards an equal sharing of household tasks is

probably needed if one wishes to promote an equal division of work between men and women.

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Appendix

Education: We create four different levels of education based on the data provided by the survey; less than ‘BEPC/CAP/BEP’, ‘BEPC/CAP/BEP’, ‘BAC (Gen & Technical)’ and ‘Bac+2 and Greater’.

Professional position: The survey provides 9 different levels of occupational status as described in the following table. The professional position does not include independently working people so we created a separate category for them.

Category number in the survey	Professional position	Mapped to variable “status” which we use
0	Miscellaneous cases (other than 1 to 9) (only 1.4% in all survey)	1
1	Manoeuvre ou ouvrier spécialisé (OS1, OS2, OS3 etc.)	1
2	Ouvrier qualifié ou hautement qualifié (P1, P2, P3, TA, OQ etc.)	1
3	Agent de maîtrise dirigeant des ouvriers, maîtrise administrative ou commerciale	2
4	Agent de maîtrise dirigeant des techniciens ou d’autres agents de maîtrise	3
5	Technicien, dessinateur, VRP (non cadre)	4
6	Instituteur, assistant(e) social(e), infirmier(e) , et personnel de la catégorie B de la fonction publique	4
7	Ingénieur ou cadre	5
8	Professeur et personnel de la catégorie A de la fonction publique	5
9	Employé de bureau, employé de commerce, agent de service, aide soignant(e), gardienne d’enfants, personnel de la catégorie C ou D de la fonction publique	1
Independents		6