INTRA-HOUSEHOLD TIME ALLOCATION: GENDER DIFFERENCES IN CARING FOR CHILDREN

Inmaculada García Mainar (U. Zaragoza)

J. Alberto Molina Chueca (U. Zaragoza)

Víctor M. Montuenga Gómez (U. La Rioja y U. Zaragoza)

ABSTRACT

This paper analyses the intra-household allocation of time to show gender differences in caring for children. To that end, we formulate a collective model which allows us to characterise the position of each of the spouses in the bargaining process. This model is then estimated for three national samples, namely French, Italian and Spanish households, with these data being drawn from six waves of the European Community Household Panel-ECHP (1994-1999). Empirical results show that the highest inequality in caring for children appears in Spain. Moreover, panel data reveals that, in general, caring tasks are mainly influenced by the age difference between the spouses and the number of hours worked.

KEYWORDS

Intra-household time allocation, gender differences, caring for children, collective model.

JEL CODES: D13, J22, C33

INTRODUCTION

Despite the increasing trend towards an egalitarian sharing of the caring tasks between spouses within a household, important gender differences persist. For example, the number of hours per week (h/w) that wives dedicate to caring for family members is considerably higher than that of their husbands.[1] International data (European Household Community Panel 1994-1999) reveals that the average number of hours wives and husbands dedicate to caring for children is 42.21 h/w against 9.27h/w in the case of France, 36.77h/w against 8.25h/w in Italy and 53.35h/w against 9.16h/w in Spain, respectively.

Economists have proposed several theoretical approximations in order to explain intrahousehold allocation of time. In particular, families face a given endowment of time for carrying out activities such as leisure, paid-work outside the home and non-paid housework (caring for other family members, etc). Today, the predominant view is the collective model (Chiappori 1988, 1992), in which family decisions are adopted through a co-operative behaviour where the final agreement on the allocation of time within the family is Pareto-efficient. This means that family members negotiate the sharing of the different tasks, so that the final agreement leaves them in a better position than it would without bargaining. In deciding how to allocate time, personal and family characteristics are taken into account. Among the tasks that the family must decide how to share between the members, caregiving is increasingly prevalent in the empirical and theoretical studies.

In this article, we use the collective approach for modelling intra-household time allocation in order to show gender differences in caring for children To that end, we estimate the hours dedicated by each spouse to caring for children for three national samples, namely French, Italian and Spanish households, with the data being drawn from six waves of the European Community Household Panel-ECHP (1994-1999). The structure of the Panel,

which includes relevant information on the factors affecting the alternative uses of household time allows us to control for the unobservable heterogeneity problem, as well as to eliminate the bias derived from aggregation. In particular, we analyse the case of couples in which both spouses work outside the home and dedicate time to caring for children, comparing these results with those obtained from couples where only the husband is employed. The interest of the estimations lies in obtaining evidence on gender differences in the personal and family characteristics that influence decisions about the hours dedicated to such care.

THEORETICAL CONSIDERATIONS

Economists argue that the analysis of the intra-household allocation of time requires an adequate theoretical framework in order to properly model it. The traditional or unitary approach, which assumes that a household, even if it consists of different individuals, acts as a single decision-making unit, is giving way in the economic literature to an alternative approach which considers that a household can be seen as a micro-society, consisting of several individuals with their own rational preferences. The early attempts in the literature to account for the fact that households may consist of different individuals with their own preferences are Samuelson (1956) and Becker (1974a, 1974b). However, the work of both remains within the traditional approach: in the first case, through an aggregation utility function achieved by consensus among the individuals; and, in the second, by assuming the utility function of a benevolent head of the family taking into account the preferences of all household members.

The unitary or traditional approach used in modelling intra-household allocation of time suffers from a number of methodological and empirical weaknesses. Thus, from the methodological perspective, the idea that subjective preferences are inseparable from individual behaviour leads to an alternative approach which explicitly takes into account the notion that a household is a group of individuals, with different preferences, and among whom an intra-household decision-making process takes place. As regards empirical weaknesses, the most relevant appears in the context of the welfare analysis, since the unitary model leaves

no room to determine the intra-household allocation of consumption or time and, consequently, of welfare. As a result, knowledge of the intra-household decision process may be important for the design of policy programs whose aim is to contribute to the development of family members, and thus of the household as a whole.

In response to these limitations, two fruitful approaches have emerged in the literature which explicitly take into account several decision-makers in a household by using game theory elements. The first of these approaches models household behaviour in a non-co-operative framework, in such a way that the Nash equilibrium implies that family members maximise their utility, taking the other individuals' behaviour as given (see, for example, Weiss and Willis, 1985; Konrad and Lommerud, 1995). The second approach incorporates elements of co-operative game theory in a household model, specifically that of axiomatic bargaining theory, in such a way that household members reach the Nash or the Kalai-Smorodinsky solutions after trying to agree on how to divide the gains of co-operation, that is to say, the benefits of living together (see Manser and Brown, 1980; McElroy and Horney, 1981). Despite the clear relevance of these two game theory approaches, one important drawback they share is that if the empirical implications are rejected, it is impossible to determine whether the choice of a particular bargaining concept, or the bargaining approach itself, is rejected.

Against this background, Chiappori (1988, 1992, 1997) adopts, as an alternative, and increasingly more accepted approach, the collective model, which is used as our general framework for the analysis of care giving.[2] This model considers that household demand functions are derived from an intra-family decision process whose only requirement is that it must lead to Pareto-efficient allocations. That is to say, the demands must be such that individual welfare cannot increase without reducing the welfare of the other family member. This supposes the optimisation of a weighted "family" utility function composed of each family members' utility function, weighted by a factor reflecting the relative bargaining power of each. This factor is assumed to depend on wages and on the family non-labour income. The demand functions for time dedicated to caring for children are, consequently, found to depend on

economic variables, such as the labour and non-labour income, and on a set of exogenous variables affecting bargaining power, but not affecting individual preferences.

DATA AND DESCRIPTIVE ANALYSIS

Data used in this work, the first six waves of the EHCP (1994-1999), provide abundant information about both the personal and labour characteristics of individuals, with this information being homogenous across the sample countries, given that the questionnaire is the same and the statistical analyses are coordinated by EUROSTAT. We have selected families in which the spouses are of working age, that is to say, between 20 and 64 years old, constructing two samples from them: in the first we include the families in which both spouses work, and in the second we include those families in which only the husband works. The use of both samples will allow us to compare the results between both types of family.

The dependent variable is the number of weekly hours dedicated to caring for children, each of them considered for each spouse (*ChildCareHusband*, *ChildCareWife*, *OtherCareHusband*, *OtherCareWife*). A number of factors are considered to influence the total amount of time devoted to this activity. We distinguish between variables affecting the bargaining power of the spouses (or attitudes towards care-giving tasks) and those representing the resources available to the family.

As regards the former, we begin by including two variables that refer to the ages of the spouses. First, the average age of the spouses (*AverageAge*) is an indicator of the attitude of the family to the division of family work, deriving from the different traditional or modern roles of the spouses. Secondly, the age difference between the spouses (*AgeDifference*) will likely negatively influence the housework activities of the husband, and positively those of the wife. This could be an indication of the higher bargaining power of the former in the family decision-making process, whenever husbands are older than their wives. Furthermore, we include two other variables which refer to the presence of children in the household and which will affect the time dedicated to caring. The first of these variables, *Children<16*, indicates the number

of children under 16 who live with the family, while the second, *Children<12*, is a dummy variable which indicates that there is a child under 12 living with the family.

As for the economic variables, it is to be expected that the total family income (*FamilyIncome*) will influence negatively the time dedicated to care-giving by both spouses. This is so because such tasks can easily be done by hired help. With respect to the hours of remunerated work of the spouses as a contribution to the family income (*WorkedHusband*, *WorkedWife*), it is very likely that the greater the number of hours worked by the individual, the lesser the hours of care-giving activities, and the greater the number of hours required from the spouse.

Table 1 shows the average and the standard deviation of each of the variables used in the analysis for the pooled data. Note that considerations are given in turn, and with respect to each of the three countries in question, first to all the families, then to families in which both spouses work and, finally, to families in which only the husband works outside the home.

(Table 1)

With respect to the dependent variable, caring for children, it is clearly observed in the three samples that wives dedicate more hours than husbands, between four and six times more, to this activity. We can further appreciate that Spain is the sample where this difference is the greatest, 53.35h/w for wives against 9.16h/w for husbands, while Italy exhibits the lowest, 36.77h/w for wives as against 8.24h/w for husbands. In this line, we also note that Spain is the country where both spouses spend the most time on caring for children, while Italy shows the lowest hours per week. When distinguishing between the cases where both spouses work and where only the husbands work outside the home, these differences decrease by around two thirds in the first case, and increase between seven and ten times in the second. Moreover, we can note that wives dedicate less time to caring for children when both spouses work, as compared to the case where only the husband works, with the opposite applying to the husbands.

As regards the explanatory variables, we start with the age variables, *AverageAge* and

AgeDifference. We can first see that the average age varies between 41.54 for French and 43.64 for Italian households, with this average being similar in the two sub-samples. In all three countries the average age of the couples is higher in those families in which only the husband works than in those in which both spouses work, which may indicate a kind of cohort effect, so that younger couples are more likely to have both spouses working. With respect to the *AgeDifference* variable, we can note that the average age of husbands is between three and four years more than that of wives, with the highest difference appearing in Italy, 3.88 and the lowest in Spain, 3.22. We can also see, again in all three countries, that this variable is higher when only the husband works than when both spouses work. This may reflect a higher bargaining power for husbands, so that a traditional division of work is in effect.

We can also observe in all three countries that wives show greater percentages at the primary level of education than husbands and, further, that husbands exhibit either the same or greater percentages than wives at the higher education level. If we now compare countries, we find that Spain stands out because of its high percentage of individuals with primary education, with France at the opposite extreme. Additionally, for all three countries we can observe a greater percentage of individuals with only primary education in those families in which only the husband works, and a greater percentage of individuals with higher education in those families where both spouses work. This allows us to establish that the level of education when only the husband works is lower than when both husband and wife work.

With respect to the two variables referring to the presence of children in the family, *Children<16* and *Children<12*, we can observe that the number of children under 16 oscillates around 1, reaching 1.16 in France and only 0.96 in Italy. We can also note that, in general, this number is higher in families where only the husband works; and that these husbands are also the oldest. As regards the presence of children under 12, we can see that around 50% of families have a child under 12, with this percentage being somewhat higher in France. In this case, note that this value is lower for Italian and Spanish families where only the husband works, with this situation not arising in the case of French families.

The next variable to be considered is *FamilyIncome*, measured in thousands of euros per

year. First, we can appreciate that the highest mean value appears in France, 36.40, whilst the lowest is found in Spain, 20.77. Secondly, we can note the obvious difference between the families in which only the husband works and those in which both spouses work. Here, the smallest differences appear in the cases of France and Italy, where the average income of the families in which only the husband works is more than 75% of the income of the families in which both work, while the largest difference appears for Spain, where this proportion decreases to 60%.

Finally, we have also included those variables which refer to the hours dedicated to working outside the home. Note that the average number of hours worked by husbands is around 43 in France and Italy, whereas it is somewhat higher, 46, in Spain. We can also appreciate that there appear to be no significant differences when both spouses work, compared to when only the husband works. With respect to wives, France shows the highest average value, around 21h, while Spain presents the lowest, 12.7h., with these significantly increasing when both spouses work, reaching around 35h. in the cases of France and Italy, and almost 39h. in that of Spain.

A first assessment of gender differences in the number of hours dedicated to care-giving can be obtained from two indicators proposed by Haddad and Kanbur (1990). These indices, commonly known as HK and IR, provide an inequality measure from the individual values indicated for each of the spouses. In particular, HK is the ratio between the difference of the two values for both spouses and their sum, whilst IR is computed as the ratio between the lower and the higher value for each of the variables. In Table 2 we present the values of both indicators, with these being calculated for the total number of families, as well as for those in which both spouses work, and those in which only the husband works. Both inequality measures oscillate between 0 and 1, with HK indicating the maximum equality when it is 0 and the maximum inequality when it is 1, and IR being interpreted in the opposite way.

(Table 2)

Given that the interpretation of the two indices is analogous, we focus here on describing the results derived from the first indicator, HK. Considering first the total number of families, the highest inequality in caring for children appears in Spain, HKc = 0.79, respectively, while France and Italy exhibit somewhat lower values. We also note that this inequality is higher in all cases when only the husband works, than in the case where both spouses work outside the home.

MULTIVARIATE ANALYSIS

In this section we present and interpret the results of the estimation of the hours dedicated by each of the spouses to caring for children and we then propose some policy implications.

As indicated previously, the dependent variable IS regressed against the aforementioned explanatory variables. In carrying out this exercise, a number of simplifying assumptions are made. First, given that the ECHP data base does not include information on the time spent on housework, we have had to include this in our leisure time, an activity not considered in our analyses. Secondly, the panel data structure allows us to apply techniques that help to control the unobservable heterogeneity, in such a way that we will suppose linear behaviour functions. Thirdly, both wage incomes and non-wage incomes are expressed in one unique variable, with this representing the total earnings of the family in the period considered. Finally, a series of exogenous variables influencing individuals' decisions are added to the empirical specification.

The estimation procedure is structured as follows. First, we estimate each equation corresponding to the hours dedicated by each spouse using aggregated data. We then use the panel data structure to estimate the equations, considering individual effects, both fixed and random. The LM test allows us to choose between the pool estimation and the panel estimation, while the Hausman test is applied to choose between the fixed and the random effects models.

We can see in Table 3 the Specification tests, with they first confirming the joint significance

of the parameters in all the models for the three sample countries and, secondly, they indicate the choice of the selected model. With respect to the latter, we can note for husbands that, when both spouses work, the random effects model is preferred, while when only the husband works the selected model is that of fixed effects. As regards wives, we can observe that, when both spouses work, a panel model is preferred (fixed effects for France and random effects for Italy and Spain), while when only the husband works, the fixed effects model is selected for France and Italy, and the pool model is chosen for Spain.[3]

(Table 3)

After being selected the best specification, we now describe the estimation of the parameters presented in Table 4. Some differences can be appreciated between the three sample countries. Thus, the *AverageAge* variable is always significant, with its signs indicating that increasing age implies lower hours dedicated to childcare, with this indicating that as couples get older it is likely that children leave the home. With respect to the *AgeDifference* variable, the significant coefficients for French and Spanish wives reveal that the bargaining power of husbands increases, when this variable increases, so that more time is dedicated to childcare by wives.

(Table 4)

As regards the children variables, the positively significant coefficient of *Children<16* reveals that increases in this variable also increases the hours dedicated to childcare by French and Italian husbands, but only in the case where both spouses work. With respect to the effect on time dedicated by wives, we can note that increases in the number of children under 16 also increase the time dedicated to this task in the three sample countries. Another variable that we have included in the analysis is *Children<12*, with this indicating, in general, that their presence implies more time dedicated to childcare on the part of both husbands and wives, with greater effects for the latter.

As regards the remaining independent variables, we can first note that the *FamilyIncome* variable does not, in general, affect the time spent on childcare. As regards the *WorkedWife*

variable, when this increases, wives spend less time on childcare and, simultaneously, more time is dedicated by their husbands, with these results appearing in all three sample countries. Analogous results appear with respect to the *WorkedHusband* variable, that is to say, when this increases, so husbands dedicate less time to childcare and more time is dedicated by their wives; the exception is France, where more time dedicated by husbands to work outside the home does not imply that their wives dedicate more time to childcare.

Our results suggest that full equality in task sharing would require the passage of some time and that it is mainly prompted by female participation in the labour market. As a consequence, policy recommendations aimed at achieving more gender equality should be directed towards providing more facilities for education, as well as greater job flexibility and measures aimed at making family and work tasks more compatible. Specifically, flexible time schedules that allow childcare during working time and the establishment and growth of kindergartens at the job center with adjustable timetables. At the same time, it appears that increasing the prevalence of women in part-time jobs would not result in a more balanced sharing of the caring tasks.

SUMMARY AND CONCLUSIONS

The objective of this work has been to analyse the gender differences in the allocation of time spent caring for children. To that end, we have considered a collective model to derive demand functions for hours of care-giving, which has been estimated for three national samples, namely French, Italian and Spanish households, drawn from six waves of the European Community Household Panel-ECHP (1994-1999).

Before carrying out the econometric analysis, we first provided a body of descriptive evidence which clearly points to the specialisation of wives in caring for children in all three sample countries. The inequality indicators show that the highest inequality in caring for children appears in Spain.

The econometric results first confirm the joint significance of the parameters in all the models for the three sample countries and, secondly, that panel models are preferred in all

cases, save for the case of Spanish wives when it is only the husband who works outside the home. As regards the explanatory variables, we can, in general, offer a number of results for all three sample countries. First, we have observed that the increasing age of the families implies fewer hours dedicated to childcare and, furthermore, that when the age differences increase, then less time is dedicated by husbands, and more time dedicated by wives, to childcare. Secondly, we have noted that the education variables corresponding to the wives show greater significance than those corresponding to their husbands. Thirdly, the presence of children implies, in general, more time dedicated by both husbands and wives to childcare and, finally, that when there is an increase in the time dedicated by each spouse to work outside the home, then one of them dedicates less time to childcare and the other dedicated more, that is to say, husband and wife childcare times are substitutes.

Summing up, policy recommendations aimed at increasing gender equality should be based on an egalitarian education system and on the sharing of household tasks, with this requiring the introduction of greater flexibility in the workplace, as well as measures designed to encourage greater compatibility between family and work activities.

NOTES

[1] This is a common result across developed and poor countries, e.g., see Climo (2000) and Eaton (2005) for the case of elder care, and van den Brink and Groot (1997) and Miller and Mulvey (2000) for the case of child care. The inequality between men and women in the time devoted to these tasks has an important effect on the differences in labour supply, as Sirianny and Negrey (2000) have shown.

[2] The literature focused on families' care arrangements includes Wolf and Soldo (1994) who rely on Becker's model of the family, Pezzin and Schoene (1999) who incorporate game-theoretic bargaining into the model, within a cooperative view, and Lundberg and Pollak, (2003), who, among others, adopt a non-cooperative approach.

[3] In the cases in which some of the regressors disappear because of mean-differencing in the fixed effects model, we refer to estimates obtained in the pool or random effects specifications.

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Table 1 Averages and standard errors of the variables

Variables	France			Italy			Spain		
	Total	Both work	Only the husband works	Total	Both work	Only the husband works	Total	Both work	Only the husband works
Dependent									
ChildCareHusband	9.27	11.95	5.59	8.25	10.90	6.24	9.16	15.04	6.31
	(14.16)	(15.39)	(11.27)	(12.04)	(13.47)	(10.39)	(15.23)	(18.07)	(12.70)
ChildCareWife	42.21	35.10	50.91	36.77	32.68	39.95	53.35	43.54	58.11
	(25.33)	(21.97)	(26.61)	(20.01)	(17.16)	(21.38)	(24.48)	(20.68)	(24.77)
OtherCareHusband	2.82	2.48	3.10	4.35	5.20	3.81	3.90	4.88	3.61
	(6.11)	(4.31)	(7.06)	(9.02)	(8.95)	(9.02)	(10.81)	(11.35)	(10.63)
OtherCareWife	9.90	7.63	11.76	16.13	12.00	18.61	32.68	24.90	34.99
	(14.23)	(10.38)	(16.77)	(15.30)	(11.65)	(16.65)	(25.56)	(20.55)	(26.44)
Independent									
AverageAge	41.54	41.06	42.25	43.64	42.56	44.48	43.36	41.80	44.13
	(8.60)	(8.13)	(9.32)	(8.43)	(7.82)	(8.80)	(8.87)	(7.88)	(9.22)
AgeDifference	3.37	3.24	3.61	3.88	3.72	4.00	3.22	3.17	3.25
	(3.31)	(3.21)	(3.48)	(3.05)	(3.02)	(3.07)	(2.89)	(2.93)	(2.86)
PrimEducHusband (%)	0.33	0.29	0.42	0.54	0.44	0.62	0.62	0.48	0.68
	(0.48)	(0.46)	(0.49)	(0.50)	(0.50)	(0.48)	(0.49)	(0.50)	(0.47)
SeconEducHusband(%)	0.42	0.45	0.37	0.36	0.42	0.31	0.16	0.18	0.15
	(0.49)	(0.50)	(0.48)	(0.48)	(0.49)	(0.46)	(0.37)	(0.39)	(0.36)
HighEducHusband(%)	0.25	0.26	0.21	0.10	0.14	0.06	0.22	0.34	0.17
	(0.43)	(0.44)	(0.41)	(0.30)	(0.35)	(0.24)	(0.42)	(0.47)	(0.37)
PrimEducWife (%)	0.39	0.31	0.51	0.57	0.38	0.72	0.67	0.46	0.78
	(0.49)	(0.46)	(0.50)	(0.50)	(0.49)	(0.45)	(0.47)	(0.50)	(0.42)
SeconEducWife (%)	0.36	0.38	0.32	0.35	0.48	0.25	0.16	0.20	0.14
	(0.48)	(0.49)	(0.47)	(0.48)	(0.50)	(0.43)	(0.37)	(0.40)	(0.35)
HighEducWife (%)	0.25	0.31	0.17	0.08	0.14	0.03	0.17	0.34	0.08
	(0.43)	(0.46)	(0.37)	(0.27)	(0.35)	(0.18)	(0.37)	(0.47)	(0.27)
Children<16	1.16	1.06	1.31	0.96	0.95	0.97	1.03	1.03	1.03
	(1.12)	(0.98)	(1.28)	(0.95)	(0.89)	(0.99)	(0.97)	(0.93)	(0.99)
Children<12	0.51	0.50	0.52	0.46	0.47	0.45	0.49	0.51	0.48
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)
FamilyIncome	36.40	39.44	29.91	24.38	25.63	20.47	20.77	24.20	14.71
	(27.35)	(29.80)	(20.90)	(12.62)	(11.98)	(13.48)	(12.96)	(13.33)	(9.64)
WorkedHusband	43.90	43.52	44.63	43.03	43.03	43.04	46.14	46.18	46.12
	(10.73)	(10.26)	(11.43)	(9.91)	(10.10)	(9.73)	(12.03)	(12.49)	(11.80)
WorkedWife	21.20	35.44	0.00	15.53	35.29	0.00	12.69	38.57	0.00
	(19.11)	(10.26)	(0.00)	(18.82)	(10.38)	(0.00)	(19.39)	(12.03)	(0.00)
Number of observations	11,545	6,568	4,977	13,781	6,011	7,770	11,143	3,666	7,477

Table 2 Inequality measures

Inequality measures	France			Italy			Spain		
	Total	Both work	Only the husband works	Total	Both work	Only the husband works	Total	Both work	Only the husband works
HK	0.73	0.63	0.86	0.74	0.64	0.82	0.79	0.63	0.87
	(0.34)	(0.37)	(0.25)	(0.33)	(0.37)	(0.28)	(0.32)	(0.39)	(0.25)
IR	0.22	0.31	0.10	0.20	0.29	0.13	0.17	0.31	0.10
	(0.31)	(0.34)	(0.20)	(0.28)	(0.32)	(0.22)	(0.28)	(0.36)	(0.20)

Note. Standard errors in brackets

Table 3 Specification tests

	Husbands						Wives					
	Both work			Only the husband works			Both work			Only the husband work		
Variables	Pool	Fixed effects	Random effects	Pool	Fixed effects	Random effects	Pool	Fixed effects	Random effects	Pool	Fixed effects	Random effects
FRANCE												
Adjusted R^2	0.1000	0.0133	0.0108	0.0508	0.0091	0.0000	0.1339	0.0313	0.0267	0.2009	0.0193	0.0247
F-test p		0.0000 (0.00)			0.0000 (2.53)			0.0000 (2.37)			0.0000 (1.97)	
LM-test p			0.0000 (286.97)			0.0000 (104.08)			0.0000 (153.82)			0.0000 (45.32)
Hausman-test p		0.0260 (0.00)			0.1184 (14.11)			0.4062 (10.40)			0.4154 (9.24)	
ITALY												
Adjusted R^2	0.1514	0.0078	0.0051	0.1036	0.0036	0.0019	0.1445	0.0179	0.0165	0.1187	0.0098	0.0080
F-test p		0.0000 (2.93)			0.0000 (2.40)			0.0000 (2.56)			0.0000 (1.79)	
LM-test p			0.0000 (940.14)			0.0000 (138.26)			0.0000 (470.53)			0.0000 (32.05)
Hausman-test p		0.0006 (31.12)			0.6337 (7.03)			0.0275 (20.19)			0.2591 (11.25)	
SPAIN												
Adjusted R^2	0.1191	0.0015	0.0012	0.0760	0.0058	0.0026	0.1294	0.0171	0.0104	0.1254	0.0254	0.0096
F-test p		0.0000 (1.68)			0.0000 (1.66)			0.0000 (1.69)			0.0037 (1.30)	
LM-test p			0.0000 (98.51)			0.0000 (33.02)			0.0000 (36.67)			0.7059 (0.14)
Hausman-test p		0.0000 (37.50)			0.1409 (14.76)			0.0405 (18.98)			0.3043 (11.72)	

Notes. *:the coefficient is significant at 10%. **:the coefficient is significant at 5%.

Table 4 Parameters estimated

	FRANCE				ITALY				SPAIN			
	Husbands		Wives		Husbands		Wives		Husbands		Wives	
	Both work	Only the husband works	Both work	Only the husband works	Both work	Only the husband works	Both work	Only the husband works	Both work	Only the husband works	Both work	Only the husband works
Variables	Random effects	Fixed effects	Fixed effects	Fixed effects	Random effects	Fixed effects	Random effects	Fixed effects	Random effects	Fixed effects	Random effects	Pool
Constant	27.31**	-2.75	12.37*	24.79**	21.06**	8.12**	44.72**	27.93**	42.28**	6.83	66.04**	82.58**
	(4.33)	(4.10)	(6.83)	(9.11)	(2.59)	(3.04)	(3.46)	(6.90)	(4.69)	(5.29)	(5.73)	(6.97)
AverageAge	-0.37**				-0.31**		-0.39**		-0.64**		-0.71**	-0.90**
	(0.07)				(0.05)		(0.06)		(0.09)		(0.11)	(0.12)
AgeDifference	-0.04				-0.13		-0.02		-0.27*		0.57**	-0.30
	(0.12)				(0.09)		(0.12)		(0.16)		(0.20)	(0.24)
SeconEducHusband	0.58				0.23		1.15		2.27*		1.71	-4.34*
	(0.89)				(0.59)		(0.78)		(1.30)		(1.58)	(2.33)
HighEducHusband	-0.06				-0.15		0.16		3.13**		1.61	-1.66
	(1.2)				(0.88)		(1.23)		(1.29)		(1.61)	(2.55)
SeconEducWife	-1.75*				1.01*		-0.73		1.28		-0.23	2.66
	(0.97)				(0.60)		(0.80)		(1.27)		(1.53)	(2.18)
HighEducWife	0.87				1.95**		0.95		4.38**		-0.59	5.52**
	(1.19)				(0.93)		(1.25)		(1.27)		(1.59)	(2.63)
Children<16	0.86*	0.42	7.77**	6.09**	1.76**	0.37	2.29**	-1.64	0.46	2.89	2.33**	1.08
	(0.61)	(0.91)	(1.51)	(2.03)	(0.35)	(1.03)	(0.47)	(2.34)	(0.65)	(2.24)	(0.79)	(1.05)
Children<12	3.00**	2.16	6.35*	11.42*	3.45**	1.22	5.22**	5.59	2.56*	-2.19	5.50**	5.44**
	(1.49)	(2.67)	(3.78)	(5.92)	(0.69)	(1.65)	(0.92)	(3.70)	(1.43)	(3.04)	(1.67)	(2.62)
FamilyIncome	0.00	0.00	0.00	0.00	0.02**	0.00	0.00	0.05	0.01	-0.01	0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.05)	(0.01)	(0.03)	(1.00)	(0.01)
WorkedHusband	-0.25**	0.16**	0.14	0.08	-0.16**	-0.05	0.10**	0.17	-0.28**	-0.02	0.10**	0.05
	(0.04)	(0.06)	(0.09)	(0.14)	(0.02)	(0.06)	(0.03)	(0.14)	(0.04)	(0.06)	(0.05)	(0.06)
WorkedWife	0.15**		-0.09		0.12**		-0.19**		0.10**		-0.29**	
	(0.04)		(0.10)		(0.03)		(0.03)		(0.04)		(0.05)	

Notes. Standard errors in brackets. *:the coefficient is significant at 10%. **:the coefficient is significant at 5%.