Parental Employment and Time with Children in Spain

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Abstract

This paper studies the relationship between parental employment and time with children in Spain. We find that there are large differences across genders in basic primary and secondary childcare, but not in quality primary childcare. The analysis shows that there are no significant differences in quality primary childcare across employment status. Furthermore, and irrespectively of parental gender, the results indicate that more educated parents allocate more time to primary care. Based on our findings, two policy strategies that could raise the time allocated to childcare by working parents include: establishing a working timetable that finishes no later than 6pm, and creating a system of vouchers exchangeable for household services. Both policies would free time for childcare.

JEL Classification: J13, J22

Keywords: childcare time and employment

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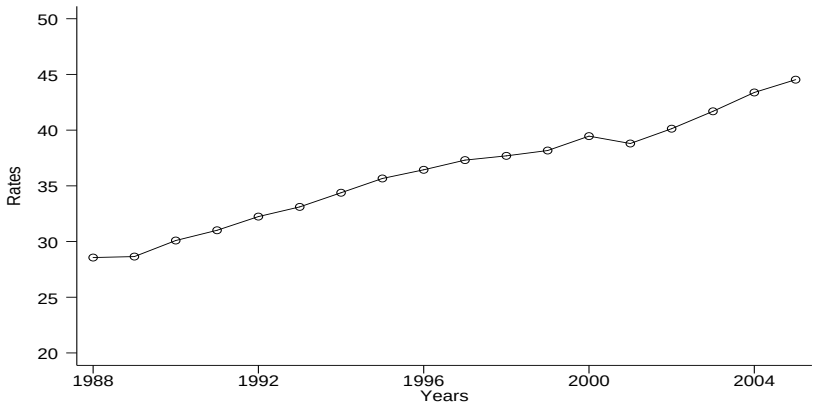
1 Introduction

Over the last century, many countries experienced a significant rise in female labour force participation, especially women with young children. Spain was no exception and female activity rates increased remarkably in the last two decades (Figure 1).

Figure 1: Activity Rates of Spanish Married Women 1988–2005



Source: INE.

There are clear advantages of freeing maternal time for paid work such as maintaining mothers' human capital, and facilitating the future well-being of the children since employed mothers are more able to invest in extra education than non-employed mothers (Hansen et al. (2006)).

But the generalised increase in maternal employment has brought in a debate on whether this phenomenon may have deleterious consequences for children. This is because higher mothers' employment rates necessarily require a reallocation of time across different daily activities, including childcare time. For example, there exists the possibility that these mothers may have to reduce significatively the time they spend with children, compared to the non-working mothers, and this may have adverse effects on children's cognitive ability.

Following this debate, there has been some effort in the literature to calibrate whether the rapid rise in mothers' labour force participation had a negative impact on children's development. Although some studies find small negative effects on cognitive and behaviour outcomes when the mothers' employment occur before the first year of the child (Han et al. (2000) for the US) or employment occurs when the child was aged 0–5 (Ermisch and Francesconi (2002) for the UK), the overall reading of the literature is mixed and suggests that the effects are negligible (Greenstein (1995)). Interestingly, some studies point out that the impact of maternal

employment on children's academic achievement depend on the type of substitute care. Gregg et al. (2005) find evidence in the UK that full-time employment in the first 18 months after a birth by mothers who predominantly use informal substitute care from relatives or friends leads to poorer cognitive development for children. However, they find no evidence that part-time working or full-time working with more formal care substitution leads to any adverse cognitive outcomes.

The apparent lack of pervasive effects of mothers' employment on child development could possibly be explained by a number of factors. For example, working parents giving more quality time to their children (Nock and Kingston (1988)). Or employed mothers' childcare time being not that different to non-employed mothers (Sandberg and Hofferth (2001)). Bianchi (2000) points out that despite the upward trend in maternal employment, mothers' time with children has remained very similar over time in the US. This finding a priori might seem puzzling. How is it possible that the dramatic change in female time in the labour market was not accompanied by a significant drop on the time children receive? Bianchi (2000) outlines several possible reasons. First, we tend to overestimate maternal time with children in the past, assuming that housewives dedicated most of their time to children and not to other household or leisure activities. Second, we disregard the effort working mothers do to protect the investment in children. Third, even children of non-working mothers are currently spending more time in preschool. Fourth, there has been a simultaneously increase in men's involvement in child rearing.

In general, therefore, the literature for the US and the UK brings up a favourable balance for maternal employment since childcare time appears to be hardly affected by this factor.

This paper investigates parental employment and time with children in Spain. For the analysis, it is crucial sorting childcare time into its various categories. This is because the degree of human capital enrichment in each activity will have different effects on child outcomes. Zick et al. (2001)) show, for example, that more parental involving in reading/homework activities decreases behavioural problems and improves grades of the children. Based on the survey we classify childcare as follows: *Primary Childcare* when the main activity was reported to be childcare, *Secondary Childcare* when childcare was mentioned as secondary use of time, and *Passive Childcare* in which a parent reported any activity (cooking or other) "with children" under 10 years old present. *Primary Childcare* is subsequently divided into basic (e.g. feeding) and quality primary care (e.g. reading).

We focus on a sample of individuals aged 17 years old and over, who are married or live in cohabitation, and who have at least a child under the age of 17. The study examines whether childcare time allocation varies across employment status and across certain characteristics such as education, income and origin. Although this will not provide us a straightforward answer about the relationship between employment and child development, it will definitely help to assess the magnitude of the overall possible effects. We also analyse whether job characteristics matter for the amount of childcare time that working parents allocate to their children.

The main results are the following. First, there are large differences across gender in the allocation of childcare time. Females spend much more time in overall childcare than males, no matter their employment status, and despite the two genders having similar education levels. For example, working mothers spend almost three times as much time in basic primary childcare and twice as much in secondary childcare time than working fathers. However, the differences in the allocation of childcare are insignificant in quality primary childcare, which suggests that males leave basic and secondary childare to their partners, and concentrate their family duties on quality primary childcare. Fathers and mothers also differ in when they devote time to children, fathers being more involved over the weekend and mothers spending relatively more time during the working week.

Second, education is a crucial factor. The higher the level of education, the longer time spent in primary childcare, for both fathers and mothers, and for both working and non-working individuals. Therefore, more education is not only beneficial for the individual per se, but also for their descendants. Interestingly, males increase their childcare time if their partners have higher levels of education or are working. By contrast, females are more or less unaffected by their partners' education and employment status.

Third, there is some positive association between non-labour income and childcare time. This possibly reflects that higher income levels allow to pay for certain activities that free time for childcare. Related to this idea, we find that, for working individuals only, receiving extra help to deal with some household duties (e.g. cleaning) increases primary childcare time.

Finally, regarding the relationship between certain job characteristics and childcare time, we find that for the same number of hours of work, individuals who finish working after 6pm reduce significantly the time spent in all types of childcare. This suggests that eliminating large breaks at noon and finishing work earlier could be

beneficial for children's development. Longer hours seem to be prejudicial for childcare time for both working mothers and working fathers.

2 Data

We use the 2002–2003 Spanish Time Use Survey (STUS) for the empirical analysis. The STUS is part of the Harmonized European Time Use Surveys (HETUS) launched by the EU Statistics Office (Eurostat). The survey contains information on daily activities through the completion of a personal diary. It also comprises a household and individual questionnaires. The sample of 20,603 household is evenly distributed over the year in order to accurately represent time use patterns. Half of the households were assigned a day between Monday to Thursday and half were assigned a day from Friday to Sunday.

All members of the household who are 10 years old and over complete an activity diary of a selected day. The diaries time frame is 24 consecutive hours and it is divided into 10 minute intervals. In each of the intervals, the respondent records a main activity and a secondary activity (carried simultaneously with the primary activity), and whether the activity was performed in company of a child under 10 years old. Activities are coded according to a harmonized list of activities established by Eurostat.

Activities related to childcare involve children below age of 17. The data allow us to construct three definitions of childcare: time when the main (or primary) activity was reported to be childcare (*Primary Childcare*), time when childcare was mentioned as secondary use of time in response to the query "Were you doing anything else?" (*Secondary Childcare*), and time in which a parent reported any activity (cooking or other) "with children" under 10 years old present (*Passive Childcare*). Primary care is more likely to be closer to genuine childcare since it requires a higher degree of parental involvement.

For primary activities, the survey asks individuals further detail of specification. For example, within childcare, respondents can choose between 7 alternatives: non-specified childcare; physical needs such as feeding, dressing them up, bathing and custody; learning activities such as helping them doing the homework and teaching them specific issues; read, play, talking to children; and other. We use these subcategories to classify primary care into two: *"Basic" Primary Childcare* which

Table 1: Summary Statistics

Characteristics	*Married*[1] *Males*		*Married Females*	
	Mean	*Std. Dev.*	*Mean*	*Std. Dev.*
Employed	0.91	0.28	0.49	0.50
Age	41.21	7.24	38.52	6.56
Health	0.81	0.39	0.82	0.38
Spanish	0.97	0.18	0.96	0.19
Education				
Primary and Under	0.54	0.50	0.54	0.50
Secondary	0.12	0.33	0.12	0.32
Tertiary	0.17	0.38	0.16	0.37
University Degree	0.17	0.38	0.18	0.38
Number of Chidren				
Age 0-1	0.17	0.39	0.17	0.38
Age 2-5	0.35	0.54	0.35	0.55
Age 6-9	0.36	0.55	0.36	0.55
Age 10-16	0.70	0.71	0.70	0.71
Age 0-16	1.58	0.68	1.57	0.68
Dishwasher	0.45	0.50	0.45	0.50
External Help	0.31	0.46	0.31	0.46
Flat Owner	0.84	0.37	0.84	0.37
Observations	4734		4760	

NOTE: Statistics based on the sample of individuals aged 17 and older, who have at least a child under the age of 17, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.
[1]Married stands for both married and cohabitation.

encompasses activities related to children's more essential needs (e.g. feeding) and *"Quality" Primary Childcare* which entails activities linked to children's educational and cultural development (e.g helping with the homework). This is important since we are especially concerned on the effect of maternal employment on children's development, and this will depend on the type of childcare that working mothers opt to reduce. It will also help us to identify whether there are differences between males and females in the sort of childcare provided.

Although we focus on childcare time defined as primary activity we also explore the other two definitions to reach a better consensus on the differences in childcare allocation across mothers' employment patterns. Secondary childcare time may be an important fraction of total childcare time. Zick and Bryant (1996a), for example, find that such secondary childcare time comprises about one-third of all parental

childcare time.

We select the final sample for our analysis on the basis of the following criteria: individuals of 17 or more years old with at least a child under the age of 17, who cohabit or are married, and from whom we have information for all the variables used in the study (4734 males and 4760 females). The number of observations for single parents is small, which makes it difficult to get a robust description of their patterns. For this reason, we disregard them from the analysis.

Table 1 presents the sample summary statistics for the key variables used in the analysis. The employment rate of mothers and fathers with at least a child under the age of 17 is 49% and 91%, respectively. The average number of children under the age of 17 is 1.57, and it differs slightly by the employment status (not reported in the table). For males, the average number of children under 17 is 1.58 and 1.53 for those who are working and not working, respectively. For females, the equivalent rates are 1.55 and 1.62. The percentage of individuals with Spanish nationality is 96%. Qualification rates are very similar between males and females, with around 50% of individuals not having reached more than a primary degree. Almost half of the sample have a dishwasher at home and around one third receive some sort of external help to manage the household.

3 Descriptive Statistics

Table 2 shows the average number of minutes per day devoted to childcare per child under 17, either as primary activity (basic and quality) or secondary activity. The table displays the rates for males and females, and by their employment status. Since the age of the children is crucial in the sort of childcare that it is likely to be provided, we report this information for two subsamples: individuals with children aged under 10 (Table 3) and individuals whose children are aged between 10 and 16 (Table 4). This also allows us to explore passive childcare, which is only available for children under the age of 10.

We observe in Table 2 that there are substantial differences in the provision of childcare per child under 17 between males and females, especially concerning basic primary childcare. Females take clearly the lead in basic childcare, with three times as much time as males, irrespectively of their employment status. It is worthwhile pointing out that primary quality childcare is similar across genders (between 10 and 12 minutes), with females spending on average around 1–2 more minutes a day

Table 2: Time Devoted to Childcare per Child Under 17, by Employment Status

Childcare Type	*Married*[1] *Males*		*Married Females*	
Working	*Yes*	*No*	*Yes*	*No*
Primary Childcare				
Basic	15.40 (36.18)	16.73 (43.76)	44.07 (67.66)	53.43 (72.19)
Quality	9.59 (24.82)	10.13 (24.88)	10.75 (26.27)	11.83 (26.57)
Total	24.95 (48.55)	26.86 (57.78)	54.82 (78.24)	65.26 (82.40)
Secondary Childcare	6.01 (25.64)	5.70 (22.58)	11.71 (37.72)	13.52 (46.57)
Total Childcare	30.96 (59.47)	32.55 (67.14)	66.53 (95.90)	78.78 (106.08)
Observations	4319	415	2338	2422

NOTE: Standard deviations in brackets. Statistics based on the sample of individuals aged 17 and older, who have at least a child under the age of 17, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.
[1]Married stands for both married and cohabitation.

than males.

Another degree of comparison is across working status. Focusing on men, it is interesting to observe that the time spent in primary care for children under 17, for both basic and quality, is very similar between males who work and do not work. Therefore, on average, non-employed fathers are not generally using their extra free time to increase their allocation of primary childcare time.

Working mothers spend 10 minutes a day less in primary childcare than non-working mothers, although most of the difference is driven by basic primary childcare. In fact, for quality primary childcare, there is only one minute difference across employment status.

As expected, comparing the average times by age groups (Table 3 and 4) we see that parents allocate much more time to the care of children under 10 than to the 10 to 16 years old. Working females spend around 20–25% less time in total primary childcare than non-working females, in both age groups. Working males devote around 25% less time in total primary childcare than non-working males for the under 10 years old, but the gap is reduced to 8% for the 10–16 years old. It is important to emphasise that the differences in quality primary childcare time across employment status and gender are small, especially for the 10–16 years old.

Focusing on individuals with younger children, Table 3 shows that females spend more than twice as much time in basic primary care than males, no matter the employment status. Females spend more time in both secondary and passive care,

which suggests that women tend to do more activities in the presence of children than males. Both men and women spend more time in secondary and passive childcare when they do not work.

Interestingly, Table 3 shows that non-employed fathers spend an extra 15 minutes a day caring for children under 10 than employed fathers. The fact that we do not observe such a difference when looking at children under 17 (Table 2) suggests that non-employed males contribute more in childcare than their employed counterparts only when their children are young.

There is evidence that more quality primary care has a positive effect on child's cognitive development (Zick et al. (2001))). Hence, the finding that quality primary childcare is very similar across working status is encouraging since it relaxes the negative implication that higher female employment rates might have a negative impact on children education.

The link between passive childcare time and child development is less straightforward since it depends on the type of activity that the individual is doing in the presence of children. On the one hand, for example, our data shows that males spend 24 and 38 minutes a day watching TV in the presence of children, for working and non-working fathers, respectively. The equivalent averages for females are 15 and 26 minutes a day. Non-working individuals are therefore clearly spending more time watching TV in the presence of children, which depending on the show is probably not the most productive way to spend time with children. In this situation, passive childcare might not be very beneficial. On the other hand, there are no differences across employment status in passive care devoted to cultural activities such as going to concerts, cinema, theater and museums. For example, the average time attending cultural events in the presence of children under 10 is 2.58 and 1.98 for working and non-working males respectively. The average is 2.57 and 2.87 for working and non-working females.

The similarity of quality primary childcare across employment status differs from the results in Ichino and Sanz de Galdeano (2004) who find a substantial loss in quality primary childcare for working mothers in Italy and Germany. The authors argue that, in both countries, working mothers prioritise basic childcare over quality childcare. By contrast, and more in line with our results, they also find slightly higher means of quality primary childcare for working mothers relative to non-working mothers in Sweden. Other studies such as Zick et al. (2001) are more consistent with ours. They find that in the US employed mothers engage in reading/homework

Table 3: Time Devoted to Childcare per Child Under 10, by Employment Status

Childcare Type	*Married*[1] *Males*		*Married Females*	
Working	*Yes*	*No*	*Yes*	*No*
Primary Childcare				
Basic	28.89 (47.73)	39.35 (63.88)	80.12 (82.01)	100.75 (82.70)
Quality	16.87 (32.28)	22.03 (35.00)	17.40 (33.41)	19.61 (33.28)
Total	45.76 (62.20)	61.38 (81.99)	97.52 (93.38)	120.37 (92.18)
Secondary Childcare	11.20 (35.63)	14.24 (35.34)	20.46 (50.85)	26.87 (67.13)
Total Childcare	56.96 (76.49)	75.62 (94.16)	117.98 (115.54)	147.24 (125.16)
Passive Childcare	170.37 (193.87)	245.38 (67.14)	219.46 (199.58)	289.98 (228.41)
Observations	1926	143	1081	1002

NOTE: Standard deviations in brackets. Statistics based on the sample of individuals aged 17 and older, with at least a child below 10 and no child aged 10–16, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.
[1]Married stands for both married and cohabitation.

Table 4: Time Devoted to Childcare per Child Aged 10–16, by Employment Status

Childcare Type	*Married*[1] *Males*		*Married Females*	
Working	*Yes*	*No*	*Yes*	*No*
Primary Childcare				
Basic	3.26 (16.31)	4.27 (21.21)	7.37 (22.04)	10.87 (33.42)
Quality	2.56 (13.49)	2.32 (12.08)	4.21 (16.76)	4.79 (18.74)
Total	5.82 (22.01)	6.59 (25.19)	11.58 (28.76)	15.66 (41.78)
Secondary Childcare	1.33 (11.09)	0.76 (5.92)	2.40 (14.27)	2.77 (14.44)
Total Childcare	7.15 (25.44)	7.36 (26.40)	13.98 (32.98)	17.93 (46.07)
Observations	1523	196	823	910

NOTE: Standard deviations in brackets. Statistics based on the sample of individuals aged 17 and older, with at least a child aged 10–16 and no child below 10, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.
[1]Married stands for both married and cohabitation.

activities with their children more often than do non-employed mothers. We need, however, to be cautious in driving comparisons across countries since the choice of activities, as well as the definition of each childcare type, are likely to differ.

It is interesting to compare childcare time between a working day and a weekend. For example, do working individuals catch up a bit in terms of childcare time over the weekend? Are there differences across genders? Table 5 shows a quite distinctive pattern between males and females. Working fathers have higher means for all types

of childcare time over the weekend. Remarkably, non-working fathers have lower primary childcare over the weekend than from Monday to Friday and, although they have higher childcare time than working fathers over the working week, this pattern is reversed over the weekend.

Mothers, both employed and non-employed, reduce their primary childcare time over the weekend, being the reduction greater for the latter group. This reduces the difference across employment status for females. In fact, we observe in Table 5 that working mothers still spend less primary basic childcare time than non-working mothers over the weekend, but the opposite holds for both quality primary and secondary childcare time. This indicates some compensation of quality primary childcare amongst working mothers over the weekend.

Table 5: Time Devoted to Childcare per Child Under 17, by Employment Status, by Day of the Week

Childcare Type	*Married*[1] *Males*		*Married Females*	
Working	*Yes*	*No*	*Yes*	*No*
		Monday to Friday		
Primary Childcare				
Basic	14.00 (34.55)	19.33 (49.23)	47.13 (70.16)	58.79 (73.37)
Quality	8.05 (21.39)	11.77 (26.91)	11.24 (26.81)	13.66 (27.32)
Total	22.05 (43.82)	31.10 (64.08)	58.36 (80.47)	72.45 (84.74)
Secondary Childcare	4.82 (23.41)	6.63 (23.34)	11.26 (35.97)	14.84 (51.96)
Total Childcare	26.87 (53.91)	37.73 (73.84)	69.63 (97.86)	87.30 (112.12)
Observations	2826	275	1554	1558
		Weekend		
Primary Childcare				
Basic	18.06 (38.96)	11.61 (29.80)	38.01 (62.02)	43.82 (68.99)
Quality	12.37 (30.07)	6.92 (20.03)	9.78 (25.15)	5.59 (24.86)
Total	30.43 (56.02)	18.52 (41.76)	47.80 (73.18)	52.42 (76.41)
Secondary Childcare	8.28 (29.73)	3.85 (20.96)	12.60 (40.98)	11.11 (34.69)
Total Childcare	38.71 (68.12)	22.37 (50.19)	60.39 (91.65)	63.43 (92.35)
Observations	1493	140	784	865

NOTE: Standard deviations in brackets. Statistics based on the sample of individuals aged 17 and older, who have at least a child under the age of 17, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.
[1]Married stands for both married and cohabitation.

Finally, Table 6 shows whether there are differences in behaviour according to education. That is, do more educated individuals experience smaller or greater difference in the means of childcare across their employment status? How different is the ef-

fect of education across genders? We observe that the degree of education plays a crucial role for both mothers and fathers, no matter if they work or not, and for all types of childcare, with individuals with higher education spending significatively more time in childcare. For males, the gains in primary childcare time for higher levels of qualifications are substantial and even larger for non-working fathers, which suggests that highly educated non-working males use more of their extra free time in childcare than do less educated non-working males. The gains in primary childcare time for highly educated mothers are similar across employment status, being around 30 minuts per child a day.

Table 6: Time Devoted to Childcare per Child Under 17, by Employment Status, by Qualifications

Childcare Type	*Married*[1] *Males*		*Married Females*	
Working	*Yes*	*No*	*Yes*	*No*
Secondary, Primary and Under				
Primary Childcare				
Basic	11.60 (30.32)	14.69 (37.59)	32.27 (54.84)	47.72 (68.00)
Quality	8.38 (23.62)	8.96 (22.97)	7.45 (19.88)	10.32 (25.03)
Total	19.98 (42.40)	23.65 (48.79)	39.72 (62.45)	58.03 (78.02)
Secondary Childcare	4.66 (21.51)	4.99 (21.81)	8.01 (32.65)	10.13 (36.38)
Total Childcare	24.64 (51.62)	28.64 (58.01)	47.72 (76.42)	68.17 (95.47)
Observations	2756	349	1254	1869
Tertiary and University				
Primary Childcare				
Basic	22.11 (43.90)	27.5 (67.04)	57.72 (77.80)	72.79 (81.10)
Quality	11.59 (26.69)	16.34 (32.75)	14.57 (31.69)	17.02 (30.70)
Total	33.70 (56.78)	43.84 (90.40)	72.29 (90.16)	89.81 (91.65)
Secondary Childcare	8.41 (31.50)	9.39 (26.17)	15.99 (42.45)	24.91 (69.68)
Total Childcare	42.11 (69.87)	53.23 (100.89)	88.28 (110.48)	114.71 (129.69)
Observations	1563	66	1084	554

NOTE: Standard deviations in brackets. Statistics based on the sample of individuals aged 17 and older, who have at least a child under the age of 17, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.
[1]Married stands for both married and cohabitation.

The descriptive statistics in this section outline four main patterns. First, there are significant differences across genders, with mothers spending between double and triple time in all types of childcare, except for quality primary care. Second, the under tens get much more time than the 10 to 16 years old. Third, working fathers significantly catch up in childcare time over the weekend. Working mothers

also catch up slightly, especially in quality primary care. Fourth, higher levels of education are associated with much more time spent in childcare.

Clearly, however, some of the factors might be driven by other aspects such as, for example, highly educated individuals receiving more extra help for other household activities that relieve time for childcare. To investigate this possibility, in Section 4 we analyse the effect of different interrelated factors on childcare time. We also evaluate whether there are job characteristics that are positively associated with the time devoted to childcare for the working group, for both males and females.

4 Econometric Model and Variables

This section analyses the allocation of childcare. Before estimating the relationship between individual characteristics and the quantity of time devoted to childcare, there are three points to take into account. First, there are a number of parents who report spending no time in particular types of childcare. This indicates the presence of zeros in the dependent variable, which means that a Tobit rather than ordinary least squares (OLS) regression should be used to estimate the model.

Second, the time spent in childcare by mothers and fathers is interdependent since it is decided jointly in the household (García-Crespo and Pagán-Rodríguez (2005)). This means that a bivariate tobit model that estimates the choice of childcare time by both mothers and fathers jointly would possibly be better than estimating the two equations separately since the latter implies a lost of efficiency.

Third, we are interested in the relationship between employment status and childcare time. But hours of market work (or employment status) and parental family care time are endogenously determined, which implies that the error term in the childcare time equation will be correlated with actual hours of market work (Zick and Bryant (1996a), Baydar et al. (1999) and Zick and Bryant (1996b)). As a result, standard estimating techniques would generate biased and inconsistent parameter estimates. For this reason, it is necessary to estimate the model using instrumental techniques. That is, first we estimate the number of hours work (or employment status) and use the estimates to predict this variable for all individuals, either for those who work or do not work.[1] Then, we use these expected hours (or expected employment status) as an instrumental variable in the main estimation of childcare time. The use of

[1]The regressors are the same than in the main estimated equation, but we also add region dummies and a health dummy, which are used to identify the model.

expected hours rather than actual hours reduces (if not eliminates) the simultaneous equations bias that may arise if hours of market work are jointly determined with parents' childcare time.

Addressing points two and three simultaneously is cumbersome. We opt for estimating an equation for males and females separately but taking into account the fact that employment and childcare time are endogenously driven.[2]

Following McDonald and Moffitt (1980), the specific equation estimated is:

$$\begin{aligned} y_i = X_t\beta + u_i \quad if \quad X_i\beta > 0 \\ y_i = 0 \quad if \quad X_i\beta \leq 0, \end{aligned} \tag{1}$$

i=1,2,...,N,

where N is the number of observations, y_i is the dependent variable (the number of minutes a day that each individual spent on childcare), X_i is a vector of independent variables, β is a vector of unknown coefficients, and u_i is an independently distributed error term assumed to be normal.

We estimate equation 1 for various definitions of childcare: basic primary childcare, quality primary childcare and secondary childcare. The explanatory variables are the following:[3] *Age* and its square; *Weekday*=1 if calendar time refer to a day from Monday to Friday; *Health*=1 if the individual reports having good health; seven regional dummies, the omitted region corresponding to the north-west; the number of children in age groups 0–1, 2–5, 6–9 and 10–16; *Spanish*=1 if the individual has the Spanish citizenship; *Dishwasher*=1 if the household owns a dishwasher; *Flat Owner*=1 if the individual lives in an own flat; *External Help*=1 if the household receives some sort of external help to manage the tasks; four dummies for the non labour income (household income minus the individual employment wage), being the dummy with zero non labour income the reference category; four individual qualification dummies (*Primary and Under*, *Secondary*, *Tertiary*, *University Degree*), being the lower level the omitted variable; partner qualification dummies, following the same categories; *Working Partner* = 1 if partner is employed; the expected number of hours work (*Expected Hours*) or the expected employment status (*Expected*

[2]We also estimated a bitobit model for working couples. This estimation takes into account the join household decision. We restricted our sample to households where both members responded the diary, were working and did not have missing variables (1720 observations). We found that the effect of the job characteristics was similar to the results obtained in Section 5.2, but the positive and significant effect of education on childcare time disappeared. This could be however due to the large sample selection and the choice of very specific households.

[3]More details can be read in Appendix A.

Employment), alternatively, since we try both variables as instruments.

We also undertake the analysis focusing on those individuals who are in paid work only with the aim to investigate the linkbetween some job characteristics and time spent in childcare. In this regression, we add the following explanatory variables: ten occupation dummies; *Public Sector*=1 if the individual is employed in the public sector, 0 if he/she is any type of self-employed, employed in the private sector or other; *Continued*=1 if individual does not have a break in his/her working day; *Working After 6pm* = 1 if the individual reports working after 6pm, 0 if he/she if finishes work before 6pm; *Hours at Work* the number of hours at the workplace.

5 Results

5.1 Parental Employment and Time with Children

Table 7 presents the results of the Tobit analysis for males for basic primary childcare, quality primary childcare and secondary childcare. Table 8 shows the equivalent results for mothers. The units of the coefficients are minutes a day. Because it is a Tobit equation, the coefficients relate both to the probability of spending any time at all in childcare activities and the time spent if any time is spent. Accordingly, the interpretation of the coefficient on father's education in the father's basic primary childcare time in equation in Table 7 is that fathers with a *University Degree* spend about 28.91 more minutes in basic primary childcare than fathers with a *Primary and Under* degree.[4]

Table 7 shows that fathers focus all types of childcare time over the weekend. By contrast, we observe in Table 8 that mothers spend relatively more time in primary and secondary care during the working week.

Unsurprisingly, both sexes spend longer time in childcare for the age groups 0–1, 2–5 and 6–9 than for the age group 10–16. Regarding basic childcare, the gap between 0–1 years old and older children groups is much more pronounced for females than for males.

A priori, we expect that higher levels of technology in a household will liberate time that could possibly be spent in primary childcare. We proxy the degree of household

[4]However, we do not know how much of these 28.91 minutes is that a higher fraction of individuals with *University Degree* would spend any time at all in basic primary childcare activities, and how much is that amongst those who spend any time, they would spend more time than their less educated counterparts.

Table 7: Tobit Parameter Estimates of Basic Primary Childcare, Quality Primary Childcare and Secondary Childcare, Fathers

Variable	*Basic Primary*	*Quality Primary*	*Secondary*
Age	-1.16 (2.61)	-5.38 (3.33)	0.40 (5.07)
Age square	-0.01 (0.03)	0.04 (0.04)	-0.04 (0.06)
Weekday	-6.64* (3.48)	-9.63** (4.42)	-22.61*** (6.48)
Number of children			
Nchild01	74.24*** (4.63)	44.62*** (5.93)	40.88*** (8.46)
Nchild25	45.67*** (3.70)	41.63*** (4.77)	43.72*** (6.98)
Nchild69	23.27*** (3.42)	29.16*** (4.37)	20.08*** (6.41)
Nchild1016	-12.41*** (3.25)	-14.28*** (4.22)	-23.10*** (6.60)
Spanish	18.09* (9.60)	1.49 (11.83)	27.78 (19.15)
Dishwasher	8.75** (3.84)	-4.99 (4.93)	-6.90 (7.34)
External Help	1.84 (4.12)	-12.25** (5.41)	5.26 (7.86)
Non Labour Income (Omitted category *Nonlabinc0*)			
Nonlabinc1	10.14 (7.86)	37.48*** (10.03)	-4.10 (15.12)
Nonlabinc2	15.97 (13.91)	69.11*** (17.89)	2.15 (27.03)
Nonlabinc3	60.90* (31.73)	137.87*** (41.66)	2.53 (62.56)
Qualifications (Omitted category *Primary and Under*)			
Secondary	29.71*** (5.46)	14.42*** (7.05)	22.97** (10.50)
Tertiary	15.07*** (5.01)	-2.90 (6.44)	18.81** (9.43)
University Degree	28.91*** (5.50)	15.98** (7.09)	32.58*** (10.34)
Partner's Qualifications (Omitted category *Primary and Under*)			
Secondary	14.04** (5.74)	4.11 (7.39)	11.80 (11.01)
Tertiary	11.81** (4.89)	12.60** (6.24)	12.10 (9.25)
University Degree	22.57*** (6.05)	8.87 (7.79)	29.47** (11.41)
Flat Owner	-1.77 (5.17)	-4.18 (6.57)	14.56 (9.98)
Working Partner	16.67*** (6.08)	-16.21* (7.77)	15.98 (11.72)
Expected Employment	56.68 (39.80)	204.86*** (51.24)	18.03 (77.81)
Observations		4734	

*$p < .1$; **$p < .05$; ***$p < .01$.

NOTE: Standard errors in brackets. Regression based on the sample of individuals aged 17 and older, who have at least a child under the age of 17, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.

technology with the variable *Dishwasher*. We observe that "better technology" somehow increases the primary childcare for males, being significant for basic care. But it does not have any impact on females' childcare time.

There could also be a positive relationship between receiving external help in the household and childcare time. The variable *External Help* captures, although not perfectly, this effect. The estimates, however, do not corroborate this expectation. We also tried an alternative proxy, having a cleaner or not in the household, and it

also turned out insignificant.

In general, there is a positive relationship between non-labour income and childcare time. This could be due to the fact that parents with higher rents might be able to pay for other services that free them time for their families, the effect of which has not been picked up by the variable *External Help*.

Table 8: Tobit Parameter Estimates of Basic Primary Childcare, Quality Primary Childcare and Secondary Childcare, Mothers

Variable	*Basic Primary*	*Quality Primary*	*Secondary*
Age	8.14*** (2.19)	7.12* (2.90)	13.63** (5.30)
Age square	-0.15*** (0.03)	-0.12*** (0.04)	-0.21*** (0.07)
Weekday	34.87*** (2.97)	21.87*** (3.76)	12.41* (7.00)
Number of children			
Nchild01	149.46*** (5.13)	38.53*** (6.72)	48.50*** (12.39)
Nchild25	64.99*** (3.68)	31.01*** (4.83)	38.40*** (8.97)
Nchild69	35.44*** (3.04)	24.31*** (3.89)	23.85*** (7.29)
Nchild1016	-9.99*** (2.65)	-7.62** (3.45)	-17.86*** (6.57)
Spanish	16.24** (7.33)	-19.10** (8.86)	34.89** (17.33)
Dishwasher	0.34 (3.72)	-8.87 (4.84)	8.72 (9.25)
External Help	1.42 (6.33)	-22.22** (8.66)	68.07*** (16.58)
Non Labour Income (Omitted category *Nonlabinc0*)			
Nonlabinc1	18.28** (8.23)	-11.10 (10.66)	46.56** (20.24)
Nonlabinc2	18.85** (7.34)	23.32** (9.32)	-10.40 (17.69)
Nonlabinc3	20.93** (10.02)	28.66** (13.19)	-36.59 (24.87)
Qualifications (Omitted category *Primary and Under*)			
Secondary	15.46 (5.68)	2.65 (7.30)	65.91*** (14.21)
Tertiary	15.41 (4.85)	-1.11 (6.31)	61.02*** (12.06)
University Degree	22.42 (7.61)	2.29 (10.16)	119.11*** (19.76)
Partner's Qualifications (Omitted category *Primary and Under*)			
Secondary	-2.64 (4.82)	2.98 (5.99)	6.88 (11.64)
Tertiary	-4.44 (4.12)	-2.67 (5.20)	35.80*** (9.71)
University Degree	1.31 (4.94)	6.87 (6.10)	26.48*** (11.69)
Flat Owner	2.80 (3.98)	-1.77 (5.00)	-8.36 (9.30)
Working Partner	9.47* (5.41)	10.76 (7.07)	11.74 (13.28)
Expected Employment	-26.85 (21.23)	96.05*** (29.96)	-229.18*** (57.64)
Observations		4760	

*$p < .1$; **$p < .05$; ***$p < .01$.

NOTE: Standard errors in brackets. Regression based on the sample of individuals aged 17 and older, who have at least a child under the age of 17, who are married or cohabiting, and from whom there is complete information of all the variables used in the analysis.

The higher the level of education, the more time both fathers and mothers dedicate to childcare, especially to primary childcare. It is interesting to observe that males

with highly educated partners spend longer time in childcare. By contrast, there is no clear association between females and their husband's level of education.

Finally, we observe in Table 7 that the expected employment status (used as an instrument for the endogenous variable being at work or not) raises primary childcare, especially quality time, for males. Interestingly, for females, the estimates in Table 8 show that there is a positive relationship between being predicted to be at work and quality primary childcare time. But the relationship is very negative for secondary childcare and negative although insignificant for basic primary childcare. This corroborates the fact that working mothers prioritise spending quality time with their children over other sort of childcare time.

Alternatively, we have also estimated the Tobit equation using the expected number of hours worked after being purged of its endogeneity with childcare time (not reported). We find that there is no clear-cut pattern for fathers since the expected number of hours is insignificant for basic primary childcare, it has a positive relationship with quality primary childcare, while it has a negative relationship with secondary childcare. This could be signalling that males who work longer hours focus on quality primary childcare time and disregard the others. Focusing on mothers, we find that the longer the expected hours females spent working, the lower the overall allocation of childcare. Interestingly, the expected number of hours do not affect significatively quality primary childcare, which suggests once more that working mothers prioritise this sort of childcare amongst others.

The main results are summarised as follows. First, the Tobit analysis confirms that fathers concentrate their childcare time over the weekend and mothers during the working week. Results also show that working mothers compensate slightly quality primary childcare over the weekend. Second, non-labour income is positively associated with overall time in childcare. Third, higher levels of education are crucial for both sexes, especially regarding primary childcare. Fourth, while females do not respond significatively to their partners' education, males increase their childcare time allocation if their partners are highly educated. Finally, there is evidence that working mothers prioritise spending quality time with their children over other sort of childcare time.

5.2 Job Characteristics and Time with Children

Tables 9 and 10 report the results of estimating equation 1 for working fathers and mothers, respectively. We restrict our sample to those individuals who completed

their diary during the week since we want to capture the pattern of their working hours.[5]

As expected, we observe that the number of children and its age is crucial in determining the quantity of childcare time, for both males and females.

Interestingly, there is a positive effect of receiving external help on overall childcare time in this subsample of working individuals. This positive association is especially remarkable for basic primary childcare for males, and quality primary childcare for females (14 minutes). Therefore, receiving help to deal with household duties free time for childcare for working individuals. This suggests that a system that would distribute governmental vouchers for cleaning may increase the allocation of primary childcare time amongst working individuals.

Regarding non-labour income, the pattern is less clear-cut. It looks like for working fathers, higher non-labour income in general has a negative association with childcare time, while the opposite holds for mothers. But the estimates are rather unstable and insignificant.

The higher the level of education, the higher the time spent in primary childcare for both sexes. For working males, the level of education of their partners is important, while this is not significant for working females. Working fathers also increase their childcare time whenever their partners are in paid work, but mothers do not significantly change their childcare time allocation depending on their partners employment status. This suggests that non-employed males tend to contribute little in childcare, independently of their partners working or not. This is in line with some of the results by Fernández and Sevilla-Sanz (2006). For example, they observe that in Spain wives who earn more than their husbands still undertake more than 50% of childcare.

Focusing now on the effect of the job characteristics, we observe that the occupation dummies do not show a clear pattern. Working continuously rather than having a large break at noon increases the time spent in all types of childcare only for fathers. For mothers, results reveal that not working after 6pm is crucial for spending more time with children. This suggests that there are clear gains in childcare time of implementing a working hours timetable that has no long breaks at noon and that

[5]We have also estimated the model for employed males and females who complete their diary both during the week and over the weekend to analyse the effect of the weekend on childcare time. In this estimation, we do not control for job characteristics that can only be constructed by diaries completed during the week. Results from this estimation confirm that working males spend longer time with their children over the weekend, and working females spend longer time during the week.

Table 9: Tobit Parameter Estimates of Basic Primary Childcare, Quality Primary Childcare and Secondary Childcare, Working Fathers

Variable	*Basic Primary*	*Quality Primary*	*Secondary*
Age	3.28 (2.97)	2.06 (3.48)	4.35 (6.25)
Age square	-0.05 (0.04)	-0.05 (0.04)	-0.08 (0.07)
Occupation (Omitted category *Occ0*)			
Occ1	-25.46 (18.22)	-10.35 (25.18)	25.25 (47.09)
Occ2	-1.47 (17.34)	5.46 (21.76)	39.77 (43.17)
Occ3	-1.40 (17.13)	10.28 (21.57)	42.61 (43.02)
Occ4	-19.25 (17.79)	20.97 (22.30)	54.93 (43.68)
Occ5	-7.39 (17.14)	12.33 (21.63)	26.23 (43.42)
Occ6	-21.96 (23.72)	-3.71 (29.38)	-12.67 (58.23)
Occ7	-12.28 (17.16)	23.29 (21.58)	34.84 (43.17)
Occ8	-24.32 (17.45)	11.54 (21.92)	22.07 (43.70)
Occ9	-22.77 (17.85)	28.32 (22.17)	29.40 (44.23)
Continued	14.20*** (4.64)	0.03 (5.50)	16.80 (9.25)
Work After 6pm	-6.43 (5.51)	-22.81*** (6.70)	-10.45 (10.96)
Public Sector	0.11 (5.68)	2.14 (6.85)	-26.56** (11.46)
Number of children			
Nchild01	62.38*** (4.98)	33.57*** (6.90)	27.15** (11.58)
Nchild25	38.12*** (3.86)	29.64*** (5.23)	32.76*** (8.98)
Nchild69	19.46*** (3.63)	23.80*** (4.93)	17.67** (8.44)
Nchild1016	-13.24*** (3.60)	-9.90** (4.95)	-11.80 (8.47)
Spanish	16.68 (12.52)	13.51 (14.49)	38.80 (27.42)
Dishwasher	10.32*** (4.64)	2.77 (5.59)	-12.01* (9.35)
External Help	7.83* (4.16)	1.62 (5.73)	15.20* (9.31)
Non Labour Income			
Nonlabinc1	-0.99 (5.87)	-8.45 (6.99)	-12.59 (11.68)
Nonlabinc2	-3.68** (8.26)	-8.85 (10.08)	-7.81 (16.27)
Nonlabinc3	-2.27 (32.62)	-24.69 (41.81)	-669.34 (.)
Qualifications (Omitted category *Primary and Under*)			
Secondary	18.46*** (7.17)	15.78* (8.06)	13.88 (14.64)
Tertiary	9.80* (5.95)	2.10 (7.11)	12.25 (11.78)
University Degree	13.61* (8.59)	20.12** (10.24)	32.04* (16.96)
Partner's Qualifications (Omitted category *Primary and Under*)			
Secondary	15.62*** (6.83)	1.65 (8.25)	9.47 (13.93)
Tertiary	14.65** (6.09)	11.69* (7.17)	9.55 (12.09)
University Degree	24.49*** (6.85)	6.02 (8.32)	15.88 (13.75)
Flat Owner	9.23 (6.34)	1.27 (7.33)	21.05* (12.89)
Working Partner	18.23*** (6.01)	5.29 (7.22)	28.25** (12.12)
Hours at Work	-4.51*** (0.75)	-2.96*** (0.88)	-1.51 (1.51)
Observations		2140	

*$p < .1$; **$p < .05$; ***$p < .01$.

NOTE: Standard errors in brackets. Regression based on the sample of individuals aged 17 and older, who responded during the week, who have at least a child under the age of 17, who are married or cohabiting, work and from whom there is complete information of all the variables used in the analysis. Regression also includes region dummies, not reported.

Table 10: Tobit Parameter Estimates of Basic Primary Childcare, Quality Primary Childcare and Secondary Childcare, Working Mothers

Variable	*Basic Primary*	*Quality Primary*	*Secondary*
Age	10.71 (4.07)	4.86 (4.81)	16.94* (8.79)
Age square	-0.18** (0.05)	-0.09 (0.06)	-0.27** (0.12)
Occupation (Omitted category *Occ1*)			
Occ2	1.52 (19.93)	39.03 (25.34)	-23.95 (35.14)
Occ3	-5.92 (20.23)	25.36 (25.61)	-19.63 (35.58)
Occ4	-18.96 (20.73)	40.13 (26.06)	-36.47 (36.77)
Occ5	-9.21 (20.88)	27.99 (26.23)	-41.32 (37.14)
Occ6	-34.72 (41.99)	23.38 (49.44)	-668.76 (.)
Occ7	-20.88 (23.08)	22.10 (28.67)	-58.22 (42.79)
Occ8	-1.19 (24.60)	15.55 (31.18)	-67.80 (47.29)
Occ9	-2.32 (21.47)	23.58 (26.94)	-42.81 (38.62)
Continued	-1.24 (5.72)	0.41 (6.56)	31.25 (11.38)
Work After 6pm	-17.29*** (6.28)	-18.49*** (7.30)	18.89 (11.90)
Public Sector	-3.73 (6.02)	13.44** (6.76)	-7.59 (11.45)
Number of children			
Nchild01	121.13*** (7.34)	13.61* (6.16)	47.48*** (13.37)
Nchild25	55.71*** (5.42)	10.73* (6.05)	34.85*** (10.09)
Nchild69	21.12*** (4.99)	13.82** (5.73)	22.75** (9.46)
Nchild1016	-11.22** (4.89)	-6.05 (5.68)	4.86 (9.45)
Spanish	25.60* (14.86)	-15.53 (16.29)	6.43 (27.63)
Dishwasher	-9.15 (5.33)	-5.98 (6.09)	-18.64 (10.40)
External Help	7.36 (5.24)	14.24** (5.98)	21.09** (10.08)
Non Labour Income (Omitted category *Nonlabinc0*)			
Nonlabinc1	15.72 (12.60)	16.87 (15.43)	14.43 (25.57)
Nonlabinc2	7.58 (12.96)	27.72* (15.81)	20.50 (26.21)
Nonlabinc3	-1.71 (17.47)	-10.69 (21.74)	30.49 (33.29)
Qualifications (Omitted category *Primary and Under*)			
Secondary	28.35*** (8.65)	21.22** (9.85)	42.72*** (16.62)
Tertiary	30.21*** (7.45)	11.20 (8.69)	9.01 (14.80)
University Degree	27.65*** (9.64)	16.77** (10.87)	30.32 (18.42)
Partner's Qualifications (Omitted category *Primary and Under*)			
Secondary	9.31 (7.87)	0.79 (8.94)	8.44 (13.97)
Tertiary	-8.42 (6.83)	-8.28 (7.95)	27.09** (15.06)
University Degree	7.01 (7.69)	2.41 (8.67)	14.49 (14.66)
Flat Owner	18.15** (7.05)	0.99 (8.08)	-2.62 (13.44)
Working Partner	-0.38 (10.53)	-9.38 (12.29)	-24.18 (20.34)
Hours at Work	-6.83*** (0.86)	-1.34 (0.98)	-3.03** (1.66)
Observations		1245	

*$p < .1$; **$p < .05$; ***$p < .01$.

NOTE: Standard errors in brackets. Regression based on the sample of individuals aged 17 and older, who responded during the week, who have at least a child under the age of 17, who are married or cohabiting, work and from whom there is complete information of all the variables used in the analysis. Regression also includes region dummies, not reported.

finishes before 6pm. Working in the public sector has a positive association with quality primary childcare time, but for other sorts of childcare the pattern is unclear. Finally, longer hours at work, ceteris paribus, reduces time of childcare, especially basic care, for both genders.

To summarise, focusing on working individuals outlines the following patterns in the allocation of childcare time. First, receiving external help to deal with household tasks is positively associated with the overall time devoted to children by working fathers and mothers. Second, a continuous working timetable ending no later than 6pm has also a positive relationship with overall childcare time. Third, the higher the level of education, the more time spent in childcare. Males' childcare time has a positive association with their partners qualifications and working status, but females are unaffected by these factors. This suggests that working males with working partners participate more in family duties and hence compensate slightly for the lower overall childcare time that working mothers do.

6 Conclusions

This paper analyses the relationship between parental employment and time with children in Spain. More precisely, it studies whether there are differences between fathers and mothers, and across employment status. It also evaluates the relationship between the allocation of childcare time and individual and job characteristics. It considers four types of childcare: basic primary childcare, quality primary childcare, secondary childcare and passive childcare. Primary care refers to time where childcare is the first activity and secondary childcare when it is undertaken as the second activity. Passive activity involves any time where a parent is doing any other activity in the presence of a child under 10 years of age.

There is evidence that the allocation of childcare time will have a direct effect on children's wellbeing. We expect that the longer the time devoted to primary childcare, especially quality time, the better for children's cognitive development. The recent increase in mothers' employment rates raises the question of whether these higher rates may have adverse effects on children. Hence, getting a sense of the differences in childcare across employment status can provide us with useful information regarding the plausibility and magnitude of this effect. At the same time, a better understanding of which characteristics are associated with longer time devoted to childcare can give us some hints about the sort of policy that can

help in raising childcare time.

First, we find that, despite having similar levels of education, fathers and mothers differ substantially in the allocation of childcare time, except in quality primary childcare. This implies that the equalisation of human capital skills across genders has not been translated into an equalisation of family duties. For example, working mothers spend three times as much time in basic primary childcare and twice as much in secondary childcare than both working and non-working fathers. The finding that the differences in the allocation of childcare time are insignificant in quality primary childcare suggests that males clearly delegate basic, secondary, and passive childare to their partners, and concentrate their family duties in quality primary childcare.

Second, we find evidence that, although non-working mothers devote longer time to overall childcare, the difference across working status is not significant for quality primary childcare time. The econometric analysis confirms that working mothers prioritise quality primary childcare over other types of childcare, and they compensate slightly on quality time over the weekend. Furthermore, the fact that males' childcare time is positively associated with their partners employment indicates that there is also some compensation within the couple. Therefore, the overall effect of mothers taking up jobs on quality primary childcare is likely to be very small, a finding that is encouraging. Furthermore, although non-working mothers devote longer time to passive childcare, we observe that the main activity done in the presence of children is often rather unsatisfactory for child's development, for example, watching TV.

Third, the econometric analysis shows that higher levels of education, independently of income, are crucial in increasing primary childcare time. This finding suggests that reaching higher levels of education in the population will benefit not only the current generation but also their descendants, through increases in primary childcare time.

Finally, our evidence is consistent with the following policies that may potentially facilitate longer childcare time amongst working individuals: establishing a continuous working timetable ending no later than 6pm and creating a system of governmental vouchers that could be exchanged for household services. Both policies would relieve time for childcare.

A List of Variables

• Seven 0–1 regional dummies dummies. *NW* includes Galicia, Principado de Astrias and Cantabria, and it is the omitted category. *CM* is Comunidad de Madrid. *NE* includes Pas Vasco, Navarra, La Rioja and Aragón. *E* includes Catalunya, Comunidad Valenciana and Baleares. *C* includes Castilla Len, Castilla la Manxa and Extremadura. *S* includes Andaluca and Murcia. *OP* includes Canaries, Ceuta and Melilla.

• *Age* and its square.

• *Weekday*=1 if calendar time refer to a day from Monday to Friday.

• *Health*=1 if the individual reports having good health; seven regional dummies, the omitted region corresponding to the north-west.

• Four children dummies for ages 0–1, 2–5, 6–9 and 10–15 (*dchild01*, *dchild25*, *dchild69* and *dchild1015*), being the latter the omitted category.

• *Spanish*=1 if the individual has the Spanish citizenship.

• *Dishwasher*=1 if the household owns a dishwasher.

• *Flat Owner*=1 if the individual lives in an own flat.

• *External Help*=1 if the household receives some sort of external help to manage the tasks.

• Four dummies for the non-labour income (*Nonlabinc*), being zero the reference category. There are some missing values when individuals do not report the household income or when despite working, they do not report the wage. It is important to notice that the income and wage values are given within intervals, which makes it harder to construct accurate non labour income dummies. We build four dummies: *Nonlabinc0* = 1 when it is zero; *Nonlabinc1* = 1 when it is roughly between 0 and 1,000 euros, *Nonlabinc2* = 1 when it is between 1,000 and 1,500 euros and *Nonlabinc3* = 1 when it is more than 1,500 euros.

• Four 0–1 dummies that capture the highest education level achieved by each individual. (*Primary and Under*, *Secondary*, *Tertiary*, *University Degree*), with the omitted variable measuring the lowest level.

• Partner qualification dummies, following the same classification as the individual's qualifications dummies.

• *Working Partner* = 1 if partner is employed.

• Expected number of hours work (*Expected Hours*) or expected employment status (*Expected Employment*) used alternatively as instruments. The *Expected Hours* is estimated with a Tobit model for individuals who work and report the number of hours, using the same regressors as in the main equation, but including regional dummies and a *Health* dummy. We use the estimates of the parameters to predict the value of the working hours for all individuals, either those who work or do not work and these will be used in the main regression. The *Expected Employment* is estimated with a probit model using the same explanatory variables as in *Expected Hours*. The variables *Health* and region dummies do no appear in the main equation for the quantity of time spent in childcare. These are the variables that make that after including *Expected Hours* or *Expected Employment* as regressors, the equation is still identified.

• Ten 0–1 occupation dummies that correspond to the occupation of first job, following the CNO-94 classification: *Occ0* = 1 if military forces (reference category); *Occ1* = 1 if director of firms and public administration; *Occ2* = 1 if technicians, professionals and intellectuals; *Occ3* = 1 if technicians, professionals and intellectuals of support; *Occ4* = 1 if administrative workers; *Occ5* = 1 if commercial and restaurants workers; *Occ6* = 1 if qualified workers in fishing and agriculture; *Occ7* = 1 if handcrafters, qualified workers in mines and building; *Occ8* = 1 if operators; *Occ9* = 1 if non-qualified workers.

• *Continued* = 1 if the individual report to work without a break during his/her working day.

• *Public Sector* = 1 if the individual is employed in the public sector, 0 if he/she is any type of self-employed, employed in the private sector or other

• *Working After 6pm* = 1 if the individual reports working after 6pm, 0 if he/she if finishes work before 6pm

• *Hours at Work* = number of hours a day the individual spends at work

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