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## Formal Childcare Use and Household Socio-economic Profile in France, Italy, Spain and UK

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### Abstract

In this article we explore the association between the time spent in formal childcare by very young children (0-2 years old) and the socio-economic characteristics of their households. The paper aims to evaluate the different impact of important household determinants of childcare use, given different policy measures in support of families, childcare and family-work reconciliation in France, Italy, Spain and UK. We use data from the EU-SILC. Our analyses show that employment status and economic condition are important factors that influence parental decision-making on the use of formal childcare. The effect of these factors differs by country and type of childcare arrangement (part- or full-time), and reflects cultural and institutional differences in childcare and family policies and labour market regulations. France, Italy and Spain follow a similar pattern: women are seen as the principal caregivers. In these countries, the mother's characteristics (i.e. education and employment) are identified as key factors. The results for the UK are not as straightforward. Apart from the mother's employment status, in the UK both the father's and the mother's earnings are relevant.

### Keywords

Early childcare, EU-SILC, France, Italy, Spain, UK, childcare in EU, childcare use and household characteristics

## 1. Introduction

Since the increase in female labour force participation, widely recognised for its role in decreasing the family poverty rate and increasing the family earning potential and economic well-being (Gornick et al. 1998), childcare issues have entered the political agenda of most EU countries and of the EU itself. In particular, there is major public concern about who should take care of young children while mothers are at work and to what extent public involvement is called for. The provision of formal childcare services certainly represents an option for employed parents, especially mothers, to combine family and work. The EU countries provide childcare arrangements for most children between age three and school mandatory age, but there is a clear lack of formal services for children aged 0-2. Despite the European Council guidelines laid down in Barcelona in 2002, to date very few EU members have reached the target of 33% childcare coverage for children below age three. The EU panorama is still rather heterogeneous in terms of family and childcare policies and social policies in general, reflecting different cultural, social and institutional legacies. This variability in policies results in different views on childcare for very young children; it also impacts the topic of family-work reconciliation. In particular, the public debate is concerned about whether these issues should be tackled within the private sphere or by public intervention, and to what extent.

In this paper we explore the association between the time spent in formal childcare by very young children (0-2 years old) and the socio-economic characteristics of their households. We aim to evaluate the different impact of important household determinants of childcare use, given different policy measures in support of families, childcare and family-work reconciliation in selected EU countries.

Using the EU-SILC<sup>1</sup> database (Eurostat 2009), we compare four EU countries—France, Italy, Spain, and UK—which adopt different policies in support of families, mirroring different attitudes toward early childcare arrangements. More specifically, France shows particular concern about family well-being and childcare, providing parents with a variety of childcare solutions. Italy's childcare services are highly subsidised but not readily available. Spain's childcare services are lacking and mostly not subsidised. The UK reserves targeted state intervention only for families in need, while childcare services are mostly regulated by the private market. We selected both Italy and Spain in order to explore whether, despite their well documented similarities, there are differences between them in childcare choices.

The present study extends previous research on the subject in two primary ways. First, it uses EU-SILC data that collects information on both childcare choices and socio-economic characteristics of household members and allows for comparison across many EU countries. To date, only a few studies have relied on EU-SILC data to study the determinants of childcare use across the EU countries. These studies focus mainly on the connection between childcare arrangements and the parents' (mothers') employment (cf. Nicodemo and Waldmann 2009; Erhel and Guergoat-Larivière 2010), while less attention is given to the impact of different household characteristics on childcare use. Second, the present study contributes empirical findings on how household determinants of formal childcare use vary in the four countries under study. Determinants of childcare use might not be the same in these countries nor have the same effect. Such differences might reflect the adoption of different policy measures in these countries.

The paper is structured as follows. Section 2 outlines the characteristics of family and childcare policies in European countries and in the four countries under study. In Section 3 we discuss the determinants of formal childcare use and put forward the hypotheses and research questions. Section 4 describes the data. The methodology is presented in Section 5. Section 6 focuses on the results. Conclusions are drawn in Section 7.

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<sup>1</sup> EU Statistics on Income and Living Conditions—cross-sectional release 2007.

## 2. Childcare and family policies

### 2.1 The European panorama

European countries differ considerably in terms of social policies. Since the 1990s there has been a systematic attempt to classify them on the basis of care and family policies (Anttonen and Sipila 1996; Gauthier 1996; Letablier and Hantrais 1996; Millar and Warman 1996; Esping-Andersen 1999). European countries perform differently with regard to the interaction between the care providers—family, state, market—and the organization of early childcare services (cf. Anttonen and Sipila 1996). Differences also exist according to the objectives of family policies, giving priority, for example, to the support of fertility, of family-work reconciliation, children's education, reducing family poverty or the promotion of a more equitable division of roles within the family between men and women (cf. Gauthier 1996 for a classification of OECD countries). Furthermore, European countries differ in the way they tackle the relationship between family and employment (Letablier and Hantrais 1996).

The provision of early childcare (in terms of availability, affordability and quality of the service) depends on the above-mentioned policies. Among others, it reflects a country's view on who should take care of children when they are very young, on women's employment and on family-work reconciliation. Across the EU, there is a noticeable gap between the provision of services for pre-school children (on average 3 to 5 years of age) and younger children. For the former, an extensive and almost universal coverage is found in most of the countries. For the latter, however, the coverage of formal services is critically low and made up of fragmented providers and solutions (De Henau et al. 2007; European Parliament 2007). The demand is often fulfilled through cash benefits to support parents in taking care of their children and withdrawing (temporarily) from the labour market (European Parliament 2007).

In the Anglo-Saxon countries, represented in this study by the UK, there is very limited public childcare coverage, mainly for children of economically and socially deprived households. It is assumed that families are self-sufficient and able to meet their own needs, relying on the private market. Childcare is a family responsibility causing movements in and out of the labour market, mainly for mothers (Letablier and Hantrais 1996). In these countries, high rates of women's employment are often observed. Further, countries like Austria, Germany and the Netherlands give substantial monetary support to families. In these countries family policies support the temporary withdrawal of the parents (usually the mother) from the labour market and provide the entitlement to paid leaves or other forms of support. In other countries, such as France (considered in this study) and Belgium, families are supported both by monetary transfers and formal childcare provision. The French model gives priority to the reconciliation between work and family rather than supporting the direct costs of having children (Letablier 2003). In countries like Italy, Spain, Portugal, Greece and Ireland the family itself represents the main source of assistance: the intergenerational support within the family plays an important role in sustaining parents in the care of children. In these countries a gender-driven division of roles is still prevalent. Women are the main caregivers and responsible for family tasks, even those in paid work. Consequently, these countries are characterised by lower women's participation in the labour market and very limited early childcare services. For this reason, formal childcare arrangements might represent here an important instrument for women to participate in paid employment (Nicodemo and Waldmann 2009). We will focus, in this study, on Italy and Spain, for which distinct characteristics are specified below.

Finally, compared to other European countries, the Nordic countries (not considered in our analysis) are characterised by an early childcare coverage above the European average, especially for children below age three: formal childcare is considered a legal right for every child (Millar and Warman 1996; De Henau et al. 2007). These countries show high female labour force participation and, on the basis of a more gender-equal public policy in favour of the dual-earner and dual-carer family, provide parents with more generous instruments favouring family-work reconciliation (Gornick et al. 1998). Due to different sampling strategies, these countries could not be included in our first explorative

analyses on the association between childcare use and household characteristics. Therefore, we decided to omit them from the study.

## 2.2 France, Italy, Spain and the UK

Focusing on the main aspects related to formal childcare and parental leaves policies as well as the labour market characteristics might help to better understand childcare choices in the very early years of life in the four countries under study.

### 2.2.1 Childcare

The four countries selected in this study represent different examples of family and childcare policies. Among the conservative, continental countries, France shows particular concern about family well-being and childcare. France invests 2.6% of its GDP on family and social policies (Table 1).

Table 1 – Main indicators related to childcare policy in France, Italy, Spain and UK

	France	Italy	Spain	UK
<b>Social expenditure on family and child policies</b>				
Cash (%GDP)	2.1	0.7	0.4	1.4
Services (%GDP)	0.6	0.4	0.2	0.4
Total (%GDP)	2.6	1.1	0.6	1.8
<b>Services for children aged 0-2 (Collective care)</b>				
Coverage	20% (+ 21% by regulated child-minders)	10% (+estimated 4% by non-regulated child-minders)	17.3%	26%
Costs	Highly subsidised	Highly subsidised	Not subsidised	Targeted subsidised
Cost/month (2001) (£PPP) <sup>(a)(1)</sup>	186	186	201	385
Cost/month (2001) (£PPP) <sup>(b)(1)</sup>	154	178	199	385
Public/Private	Public	Public and growing private	Mainly private	Mixed

Source: European Parliament (2007).

<sup>(1)</sup> Bradshaw and Finch (2002).

<sup>(a)</sup> Costs that a two-earner couple (average male + average female) would be expected to pay for the most prevalent form of full-time childcare in their country per month, after direct and indirect subsidies but before taxes and benefits.

<sup>(b)</sup> Costs that a two-earner couple (average male + average female) would be expected to pay for the most prevalent form of full-time childcare in their country per month, after direct and indirect subsidies and after taxes and benefits.

Compared to the other countries selected in this study, in France childcare services for children below age three are public and highly subsidised. Apart from public investments in collective facilities, since the 1980s France has developed alternative solutions such as care provided by child-minders or by nannies within the home. The consequence is that the high childcare supply results from a combination of these alternatives (European Parliament 2007). However, despite the efforts to develop such more flexible childcare solutions, women continue to be considered the principal caregivers (Fagnani 2001; De Henau et al. 2007). France shows the highest take-up rate (about 40%) overcoming thus the target of 33% coverage for children below age three determined for 2010 by the European Council in Barcelona in 2002<sup>2</sup> (Table 1).

The UK has been chosen as an example of the liberal welfare model with targeted state intervention towards families in need. The UK shows a relatively high amount of childcare coverage (about 26%—Table 1). However, in the UK the family is considered to be self-sufficient and able to “buy” the service in the private market. Indeed, childcare structures are mostly private and independent. In the UK the social expenditure on family and social policies adds up to 1.8% of the GDP (Table 1). The monthly costs of the service are highest among the four countries under comparison.

Italy and Spain belong to the same welfare model, but with some differences regarding the childcare system. Childcare coverage is about 10% in Italy and 17% in Spain (Table 1), with a noteworthy regional variability though (Istituto degli Innocenti 2002, 2006; Baizán 2009). In Italy, childcare facilities are highly subsidised and mostly public. However, the demand for formal childcare is not satisfied by the public sector and has triggered the increase of private childcare services as well (Istituto degli Innocenti 2002, 2006). Conversely, in Spain, childcare is mostly supplied by the private market and not subsidised (Bradshaw and Finch 2002; Borra 2006; Baizán 2009). In both countries regulated child-minders play a residual role. Intergenerational help within the family network, i.e. grandparents, represents the main source of support for parents with children (Del Boca and Pasqua 2005; Arpino et al. 2009; Borra and Palma 2009; Nicodemo and Waldmann 2009). The social expenditure on family and social policies is slightly higher in Italy (1.1% of the GDP) than in Spain (0.6% of the GDP). Monthly costs of the services are comparable in Italy and France, while Spain registers higher costs.

### ***2.2.2 Parental leaves***

France, Italy, Spain and the UK adopt different parental leave schemes (European Parliament 2007; Ray 2008). As in all EU countries, statutory maternity leaves are granted immediately before and after childbirth. A different scenario is observed in relation to the wage replacement rate of parental leave after the statutory period. Italy has the highest rate of 30%, while in the UK and Spain the parental leave is unpaid (apart from social contributions for the first year in Spain). In France the compensation is flat rate, but universal. The entitlement is related to paid work. In Italy non-standard workers have been entitled only since 2007 but the take-up is limited. Normally the duration of parental leaves is shortest in the UK (13 weeks), while in Italy parents can take up to six months each, for a maximum of 10 months per couple. In Spain parental leaves can last up to three years. Finally, in France the duration is of six months for the first child and three years for the second and any additional child.

### ***2.2.3 Women's employment***

The last aspect to be mentioned is how women's participation in the labour market is affected by the two previously analysed dimensions, i.e. childcare provision and parental leaves. Gornick et al. (1997, 1998) compared 14 OECD countries with respect to their provision of policies that support employment of mothers with children under school age and clustered the countries on the basis of composite policy indices. In their study, France was among the countries providing high support to

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<sup>2</sup> Plantenga et al. (2008) recently revisited the Barcelona targets and suggested that not only childcare services should be taken into account but the full care system, including parental leave policies. In this case, the situation regarding childcare coverage for the youngest age category improves considerably in all the EU countries.

mothers' employment, Italy medium and the UK low (Spain was not included in the analysis). Parental leaves, with particular regard to their duration and generosity of benefits, may have a different impact on women's participation in the labour market (cf. Del Boca and Pasqua 2005). On the one hand, they may represent only a temporary withdrawal from the labour market and favour the attachment to paid employment. On the other hand, they may strengthen women's role as caregivers e.g. in the absence of alternative childcare support, in case of generous benefits (cf. the French case in Del Boca and Pasqua 2005). Therefore, a combination of a satisfactory provision of both parental leaves and childcare services may support women's participation in paid employment (Gornick et al. 1998; cf. Plantenga et al. 2008).

The data on female employment in France, Italy, Spain and the UK reflect the adoption of different policies oriented to family-work reconciliation. In 2007 the highest female employment rate (women 20-49 years old) is found in France and the UK (74.9% and 73.6% respectively), followed by Spain (68.4%) and Italy (60.4%). Considering women with children (Table 2), differences in mothers' employment increase with the age of the youngest child. The mothers' employment rate is higher in France and the UK in comparison to the two Mediterranean countries. Noticeable differences between the four countries regard women's part-time employment. Part-time is particularly common among UK mothers, while it is less widespread in France, Italy, and Spain. In these latter two countries the labour markets are still highly regulated with rather strict rules regarding the hiring and firing of workers and permissible types of employment arrangements. Moreover, because of difficulties in re-entering the labour market after childbirth, employed mothers prefer to continue working full-time and thus necessarily have to rely on informal childcare support (Del Boca and Pasqua 2005).

Table 2 – Employment rate and part-time work (% of total employment) of women aged 20-49 with children, 2007

	Age of youngest child					
	Below age 6		Between age 6 and 11		Above age 12	
	Total	Part-time	Total	Part-time	Total	Part-time
France	64.5	35.3	79.1	35.8	81.5	29.3
Italy	53.0	37.3	57.2	38.1	57.3	28.2
Spain	59.4	30.7	64.3	27.0	67.2	24.8
UK	56.6	62.3	73.4	57.8	79.0	42.1

Source: LFS, Eurostat online database.

### 3. Determinants of formal childcare use, hypotheses and research questions

Different factors may influence the family decision to make use of formal childcare arrangements (e.g. Hofferth and Wissoker 1992; Johansen et al. 1996; NICHD 1997; Leslie et al. 2000; Duncan et al. 2004; Del Boca et al. 2005; Del Boca and Vuri 2007; El-Attar 2007; Gamble et al. 2008; Morrissey 2008; Borra and Palma 2009; Rose and Elicker 2010). As previously explained, childcare use depends on social policies, i.e. among others on the characteristics of the childcare services (such as availability, costs, quality), on parental leaves and labour market policies. At the household level, childcare use depends on family's/parents' needs, preferences and constraints, reflecting also different national/regional cultural legacies, institutional settings and policy strategies.

In the literature most studies on childcare use have paid attention to the relationship between childcare choices and women's labour force participation. For example, studies in the U.S., Canada, UK have focused mainly on the effect of childcare costs on the choice between private and informal childcare and on employment decisions (e.g. Heckman 1974; Blau and Robins 1988; Ribar 1992; Johansen et al. 1996; Kuhlthau and Mason 1996; Powell 1997; Blau and Robins 1998; Duncan et al. 2001; Duncan et al. 2004; Joesch and Hiedemann 2002; Michalopoulos and Robins 2002; Viitanen 2005). Further, exploring different childcare characteristics which affect the use of formal childcare arrangements in 15 EU countries, De Henau et al. (2007; cf also De Henau et al. 2006) distinguished two broad categories: a) the childcare coverage (including the proportion of children covered, public share in the

costs, opening hours of care facilities), and b) the child/staff ratio. The researchers then compared the EU countries according to their performance along these dimensions. They showed, for the EU countries, that childcare availability may be considered as the principal characteristic determining childcare use and consequently linked to women's labour force participation (cf. Kreyenfeld and Hank 2000). This seems to be particularly true in countries where public childcare prevails. In this case, it is usually highly subsidised, with long opening hours and high quality, factors that should attract families to use formal childcare. Chevalier and Viitanen's (2002) findings from the analysis of European data support the claim that women's labour market participation is constrained by the lack of childcare facilities. Childcare availability, or rather the rationing of the childcare supply, is stressed in various studies as one of the explanations to the limited use of public childcare (Gustaffson and Stafford 1992; Del Boca 2002; Del Boca et al. 2005; Del Boca and Vuri 2007).

Besides objective childcare characteristics, culturally-driven preferences may also influence the use of childcare (e.g. Duncan et al. 2004; El-Attar 2007). El-Attar (2007), for example, explains the variation of childcare use across European countries by pointing at cultural differences. In particular, she suggests that trust affects the choice of childcare type and, thus, it may also affect the decision of women to participate in the labour market. She concludes that "social policies affecting the cost and availability of childcare are not the only factor that facilitates the use of formal childcare and promotes labour market participation of mothers; trust and any policies affecting it also matter" (El-Attar 2007: 19).

In our study, we only implicitly address the effect of childcare characteristics, parents' culturally-driven preferences, labour market characteristics and social policy settings on childcare use. The impact of these contextual and ideational factors is roughly estimated in a pooled model through the country variable, once we control for selected household characteristics. Conversely, in our study we are more concerned with the effect of the child's and the family's characteristics which are also related to the use of formal childcare. We rely on some of these relevant determinants to present our hypotheses and research questions.

### **3.1. Hypotheses and research questions**

The child's age plays a central role in determining the care mode and the number of hours a child spends in formal care, regardless of the mother's employment status. Borra and Palma (2009) show for Spain that older children tend to be cared for at institutions while younger children by parents or relatives. *We hypothesise that the younger the child, the less likely the parents are to use formal childcare.*

Similarly, the availability of informal care, e.g. provided by relatives and friends, could also reduce the use of formal childcare for very young children, even if for different reasons, e.g. either because of lack of formal services or because of family preferences. *We hypothesise that the availability of informal childcare decreases the use of formal childcare.*

Parents' attributes are also relevant in determining the use of formal childcare. Different studies have highlighted the link between external childcare and women's employment. Childcare use is an important means allowing parents, specifically mothers, to engage in employment (Van Dijk and Siegers 1995; Kreyenfeld and Hank 2000; Uunk et al. 2005; European Commission 2008). Mothers, who are usually the ones responsible for family care, have to find an alternative care provider for the time they spend in employment (Van Dijk and Siegers 1996). To find a balance between family and labour market activities, women often have recourse to part-time jobs, or periods of unemployment (Hynes and Clarkberg 2005). Moreover, in contexts of scarce family-supportive policies, women may prefer, or may be obliged, to quit the labour force to devote their time to family care (Gornick et al. 1998).

According to the economists' perspective, formal childcare use and mothers' labour force participation are generally considered as simultaneous processes and modelled jointly (e.g. Del Boca et al. 2005 for

Italy; Viitanen 2005 for the UK). For example, the decision of working part-time and childcare use might be determined at the same time as a strategy of reconciliation (Stier et al. 2001). However, as mentioned by Borra and Palma (2009), other than economists, sociologists are more likely to see the two decisions as “hierarchical and influenced by gender norms” (Borra and Palma 2009: 325). As Craig (2007: 73) states, “if women value both paid work and attentive parenting, they will be reluctant to trade off childcare time for time in market work and will, instead, try to retain both”. Even though it is out of the question that women’s commitment to paid work outside the home certainly reduces time spent with the children and increases the need for non-parental childcare, time-use studies show that mothers do not reduce the amount of time they spend with children by the same amount of time as they spend in gainful employment. Non-parental childcare and maternal employment might, therefore, not be interchangeable measures. Non-parental care is used also to replace time that mothers spend in other activities than paid work and to facilitate the shifting and rescheduling of parental childcare time (Craig 2007). Following Bianchi (2000), Bittman et al. (2004) and Borra and Palma (2009), we believe that mothers’ employment influences the time spent by children in formal childcare, but we are reluctant to think that the more time children spend in formal childcare the more mothers invest in paid work. Therefore, we consider mothers’ employment as an exogenous explanatory variable. We expect that *mothers in part-time employment* have more time to devote to childcare and other activities and *need the use of formal services less* (e.g. the informal care provided by relatives and friends may be sufficient to cover the mother’s working hours). Conversely, *mothers employed full-time are hypothesised to have recourse to more hours of formal childcare*.

Parents’ education has also been addressed as an important determinant of childcare use. Highly educated parents might be more likely to use formal childcare because they might appreciate the opportunity of socialisation and the relationship with teachers (e.g. Del Boca et al. 2005; Del Boca and Vuri 2007). Parents who value developmental characteristics of care prefer centre-based services to informal care also for young children (Johansen et al. 1996). Despite its costs, they are more likely to prefer formal childcare to other arrangements, such as childcare provided by relatives or professional child-minders, or at least they do not renounce to use it as one of the alternative providers (Johansen et al. 1996; Rose and Elicker 2008). *We believe that highly educated parents are more likely to use formal childcare*.

Family structure might also impact the decision to make use of formal childcare arrangements. *The presence of other small children in the household might hamper the use of formal childcare: the burden of the housework increases as well as the economic effort to provide each child with a paid care provider*. Therefore, a strategy that reduces the mother’s commitment to work and favours the use of alternative informal providers may become more feasible (Blau and Robins 1988; Van Dijk and Siegers 1996). This is especially true when children are very young, and parental or in-home care is preferred to the formal one provided by day-care centres (Early and Burchinal 2001; Riley and Glass 2002; Rose and Elicker 2008).

The use of formal childcare depends also on household income, especially in countries with limited public subsidies. In this case, the higher the disposable household income, the more easily the household meets the costs of formal services when available (Kuhlthau and Mason 1996; NICHD 1997; Brandon 1999). Parents’ ability to “buy” formal childcare services depends clearly on their earnings. However, the link between parents’, and especially mothers’, earnings and the effective use of these services is not straight. Mothers have to find a balance between time and resources devoted to employment and childcare. Women with higher earnings may be less likely to reduce their commitment to work and devote more time to care. Such a solution would imply a relevant reduction of current earnings and possibly a decrease in future employment outcomes (Van Dijk and Siegers 1996). Conversely, women with low earnings may more easily reduce their working hours to spend more time with their children, because the consequent reduction in their earnings would not dramatically affect the economic condition of the household. However, when the costs of childcare services are higher than the mother’s earnings, to keep on working becomes a less appealing or feasible solution (Fox Folk and Beller 1993; Van Dijk and Siegers 1996). Therefore, besides childcare availability, which plays the main role in the European context (De Henau et al. 2007), affordability is



a relevant dimension in the parents' decision-making process about the use of formal childcare (e.g. Heckman 1974; Blau and Robins 1988; Ribar 1992; Johansen et al. 1996; Kuhlthau and Mason 1996; Powell 1997; Blau and Robins 1998; Duncan et al. 2001; Michalopoulos and Robins 2002; Joesch and Hiedemann 2002; Viitanen 2005). Controlling for parents' earnings, we take into account how much a couple would lose economically if they withdrew from the labour market to spend time with the children instead of relying on formal childcare. *We expect that the higher the earnings, the higher the probability of using formal childcare. This might be especially true if childcare is mostly regulated by the private market. However, if childcare is highly subsidised but scarcely available, parents' with higher earnings might have less chances to access formal services.*

The adoption of different social policy measures might cause that a combination of different factors affects the use of childcare in the four countries under study. Therefore, besides testing the aforementioned specific hypotheses, we would like to address the following research questions:

- 1) Are there any differences in the household determinants of formal childcare use across the four selected EU countries?

And in particular:

- a) Does the use of formal childcare represent a valuable support for working mothers in countries where flexible working arrangements are less widespread, or the labour market is less dynamic in terms of job entries and exits?
  - b) Do informal childcare arrangements, i.e. usually grandparents, represent a substitute for formal childcare in countries where the traditional gender division of roles prevails?
  - c) What is the role played by the household economic well-being in countries where childcare depends mostly on the family's interaction with the market?
- 2) In case of common determinants of formal childcare use across the four countries, does their effect on childcare use vary by country?

#### **4. Data**

In order to compare couples' use of formal childcare for young children in France, Italy, Spain and the UK, we use data from the EU-SILC (Eurostat 2009). This is a relatively new source of information for studying income, poverty, social exclusion and living conditions at the EU level. An important advantage of this source is that data are standardised and comparable across all countries where the survey is carried out. Thirty one countries joined the survey in 2007 (Eurostat 2010): Austria, Belgium, Bulgaria, Czech Rep., Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden, UK, Iceland, Norway, Switzerland and Turkey. The EU-SILC provides both cross-sectional and longitudinal information at household and individual level, for all household members aged 16 and over.

The countries adopt different sampling designs, i.e. sampling of dwellings/addresses, sampling of households and sampling of individuals (Eurostat 2010). Almost all countries used a single-stage or two-stage design. Countries have used different sources for lists, i.e. mostly population registers or census lists together with other sources. EU-SILC data is collected by an interview with the exception of seven countries where most or part of the information is administrative, gathered from national registers.

Focusing on the four countries included in the study, France, Spain and the UK adopt the sampling of dwellings/addresses, while in Italy the sampling of households is used (Eurostat 2010). They all use a two-stage design. The primary sampling units are the municipality in France and Italy, the census sections in Spain, and the postcode sector in the UK. The ultimate sampling units are the dwellings in France and Spain, the households in Italy, and addresses in the UK. In France, the sampling frame is

the 1999 Census together with the so-called “new” dwellings; in Spain they use the Municipal Register (population register); in Italy households are sampled from the Registers of the Municipalities; in the UK they rely on the small users Postcode Address File.

Indicators aimed at measuring unit non-response in EU-SILC distinguish between a) the address contact rate (Ra): the ratio of the number of addresses successfully contacted to the number of valid addresses collected; b) the household response rate (Rh): the ratio of the number of household interviews completed to the number of eligible households at the addresses contacted; c) the individual response rate (Rp): the ratio of the number of personal interviews completed to the number of eligible individuals in households completed (Eurostat 2010). On average, for the EU-27, 97% of selected addresses are successfully contacted in 2007. Once a household interview has been completed, 99% of the personal interviews in these households are also successfully completed. However, only around 80% of the interviews with contacted households are completed on average. The overall personal interview non-response rate ( $*NRp=1-Ra*Rh*Rp$ ) is 22%. In particular, the  $*NRp$  is 15% both in France and Italy, 24% in Spain and 26% in the UK (Eurostat 2010).

In the EU-SILC information about childcare<sup>3</sup> is collected for all current household members not older than 12 years and is provided in the cross-sectional User Data Base (UDB) only. Even though only marginal attention is devoted to the childcare topic in the EU-SILC, it allows comparisons across several countries and is rich in information on household socio-economic characteristics, such as parents’ economic resources and employment.

The UDB provides the following information on childcare, referred to a “usual week” (Eurostat 2009):

- Number of hours of education in pre-school (e.g. kindergarten, nursery school) or compulsory school. There is no distinction between public and private schools.
- Number of hours of childcare
  - by centre-based services. This category concerns only the children who are at pre-school or at school in the childcare reference period. Only hours of care before and after school are included.
  - in day-care centres. This category includes all kinds of care organised/controlled by a structure (public, private), e.g. centred-base day care, organised family day care, a crèche. It includes also the qualified child-minders organised and controlled by a structure, even if they are directly paid by the parents.
  - by a professional child-minder at child’s home or at child-minder’s home. This category includes care following direct arrangements between the carer and the parents, without any control by an organised structure. There is no guarantee neither about the qualification of the child-minder nor the quality of the service. Baby-sitters and “au pairs” are also included in this category.
  - by grandparents, other household members (besides parents), other relatives, friends or neighbours. This category refers to unpaid care (free or informal arrangements such as exchange of services).

We focus the analyses on children aged 0-2, who are living with both parents at the moment of the interview. Under these conditions we select a sub-sample of 779 children in France, 1169 children in Italy, 875 children in Spain and 632 children in the UK. As explained in the next section, we define *Use of formal childcare* as the dependent variable and consider the following explanatory variables: the child’s and mother’s age, presence in the household of other children between 0 and 5 years of age,

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<sup>3</sup> It should be noted that some concerns have arisen about the use of EU-SILC data on childcare. For example, Saraceno and Keck (2008) call the use of EU-SILC data on childcare problematic because a) the focus shifts from childcare provision (much more relevant for policy purposes) to actual use of the services, which is estimated on the basis of survey data collected for different purposes, in particular without any specific sampling of households with children below school age; b) there is no distinction between public or publicly subsidised and market services. Moreover, despite “the wide and somewhat imprecise notion of ‘formal care’ used in EU-SILC, differences between institutional data on coverage and survey data for some countries are striking and not easily explainable” (Saraceno and Keck 2008: 33).

father's and mother's schooling level, father's and mother's employment status, number of hours of childcare provided by relatives and mother's and father's earnings.

## 5. Methodology

We model the use of formal childcare according to parents' socio-economic characteristics. We consider formal childcare as the attendance of pre-school, centre-based services, day-care centres and care provided by a professional child-minder. Some clarification is needed in relation to the latter category. In fact, even if it may not represent an arrangement as stable and reliable as that provided by ad hoc centres (Lowe and Weisner 2004; Scott et al. 2005; Gordon et al. 2008), its omission may lead to biased results in two of the countries analysed, namely the UK and France. In both countries it turned out to be a non-negligible paid arrangement for 12% and 17%, respectively, of the cases.

We use a multinomial logit model (MNL) to analyse the impact of family's socio-economic characteristics on the time spent in formal care by children. We define a dependent categorical variable, *Use of formal childcare*, split in the following three categories: 1) the child does not use formal childcare (Reference category); 2) the child uses formal childcare for 1-20 hours in a usual week (part-time); 3) the child uses formal childcare for 21 hours or more in a usual week (full-time). Such a definition of categories allowed us to use the same dependent variable for all four countries included in the analysis (Table 3). In the UK in particular the majority of children use formal childcare arrangements for no more than 20 hours per week. Therefore we decided not to put a lower bound to the number of hours of childcare use which would heavily compromise the number of included cases for the UK, while it would not really make any significant difference in size for the other three countries.

Table 3 – Formal childcare use per week by country (%), children 0-2 years old

Childcare use	France	Italy	Spain	UK
No use	56.3	73.6	60.2	55.2
Use 1-20 hrs. per week	11.7	7.4	14.3	32.3
Use 21+ hrs. per week	32.0	19.0	25.5	12.5
Number of cases	779	1169	875	632

Source: Authors' own elaboration on EU-SILC data.

In the MNL model the probability that childcare arrangement type  $j$  ( $j=2,3$ ) is chosen takes the following form:

$$P(c = j / x, \beta) = \frac{\exp(x\beta_j)}{1 + \sum_{h=2}^3 \exp(x\beta_h)}, \quad j=2, 3 \quad [1]$$

where  $x$  is a set of explanatory variables and  $\beta_j$  is the coefficient vector associated with the childcare arrangement type  $j$ . Since the response probabilities must sum to unity, for identification the probability of the reference category ( $j=1$ ) is normalised to:

$$P(c = 1 / x, \beta) = \frac{1}{1 + \sum_{h=2}^3 \exp(x\beta_h)}.$$

The log-probability ratio is defined by:

$$\ln \frac{P(c = j / x, \beta)}{P(c = 1 / x, \beta)} = x\beta_j, \quad j=2, 3. \quad [2]$$

From expression (2) it follows that the change in the log-probability ratio due to a one unit change in the explanatory variable  $x_k$  is  $\beta_{j,k}$ . Hence, a positive estimate  $\beta_{j,k}$  implies an increasing relationship between  $x_k$  and the log-probability of preferred childcare arrangement  $c=j$  relative to the reference category of no use of formal childcare. By exponentiation of the multinomial logit coefficients we can obtain the relative risk ratios. According to the standard interpretation of relative risk ratios, for a unit change in the predictor variable the relative risk ratio of outcome  $c=j$  ( $j=2,3$ ) relative to the reference category is expected to change by a factor of the respective parameter estimate, given all other variables in the model are held constant.

Descriptive statistics for the variables included in the model are shown in Table 4.

The four countries do not show evident differences in the sample characteristics regarding the child's and the mother's age, and the presence of other children between 0 and 5 years of age. With regard to the schooling level, the majority of fathers have up to secondary level of education. The percentage of fathers with higher education is lowest in Italy. A large proportion of mothers hold a high degree in France, followed by Spain. In all four countries fathers are mostly employed. In comparison to the other countries, British mothers are more often employed part-time than full-time. The amount of hours of childcare provided by relatives is slightly higher in Italy. The annual gross income is higher for fathers than for mothers. It shows the lowest levels in Spain, followed by Italy, France and the UK.

## 6. Results

Model estimates for France (FR), Italy (IT), Spain (SP), and United Kingdom (UK) are shown in Table 5.

As expected, the older the child the more likely he/she is to attend some kind of part- or full-time childcare. This occurs in all four countries suggesting a certain degree of homogeneity in childcare arrangements during the very early months of life. Alternative strategies, such as parental leaves, may be considered more important when the child is very young, while the use of formal services becomes more appealing as soon as the child grows older.

Contrary to our hypothesis, the presence of other young children in the household significantly increases the chance to use formal childcare in Italy (part-time option), France and the UK (full-time option). This result might suggest that in these countries a certain degree of priority in accessing formal care is given to families with more than one small child.

Different country patterns emerge with regard to how parents' characteristics (especially education and employment) are associated with different typologies of formal childcare, especially in relation to the part-time childcare option. In particular, once we control for parents' earnings, the effect of education and employment might reflect parents' preferences which seem to differ among the countries under study.

Our expectation—that the higher the mother's educational level the more parents use formal childcare—is confirmed for France and Italy (part- and full-time option), and Spain (full-time option). For example, comparing mothers with secondary education with mothers with compulsory education, the relative risk of using part-time childcare solutions relative to no use of childcare is expected to increase in France by a factor of 4.91 (i.e.  $\exp(1.592)$ ) and in Italy by 2.91 (i.e.  $\exp(1.067)$ ). Furthermore, comparing mothers with higher education with mothers with compulsory education, the relative risk for using full-time childcare solutions relative to no use of childcare is expected to increase in France by a factor of 4.26 (i.e.  $\exp(1.449)$ ), in Italy by 1.78 (i.e.  $\exp(0.575)$ ) and in Spain by 2.51 (i.e.  $\exp(0.922)$ ).

Table 4 – Definition and basic statistics of the variables included in the model

Variable	Definition and reference category (REF)	FR	IT	SP	UK
		Mean (st.dev.)	Mean (st.dev.)	Mean (st.dev.)	Mean (st.dev.)
Child's age	Age of the child in years	1.04 (0.79)	1.06 (0.81)	1.06 (0.82)	1.06 (0.82)
Mother's Age	Age of the mother in years	32.56 (4.99)	33.54 (5.10)	33.57 (5.12)	32.69 (5.78)
Other children aged 0-5	0/1 No (REF)/Yes	0.53 (0.50)	0.67 (0.47)	0.62 (0.49)	0.54 (0.50)
Father's education	0/1 Compulsory (REF)	0.17 (0.38)	0.37 (0.48)	0.41 (0.49)	0.19 (0.39)
	0/1 Secondary	0.45 (0.50)	0.47 (0.50)	0.26 (0.44)	0.52 (0.50)
	0/1 Post secondary / tertiary	0.38 (0.49)	0.16 (0.37)	0.33 (0.47)	0.30 (0.46)
Mother's education	0/1 Compulsory (REF)	0.16 (0.37)	0.28 (0.45)	0.35 (0.48)	0.10 (0.30)
	0/1 Secondary	0.39 (0.49)	0.54 (0.50)	0.27 (0.44)	0.58 (0.49)
	0/1 Post secondary / tertiary	0.45 (0.50)	0.18 (0.38)	0.38 (0.49)	0.32 (0.47)
Father's occupation	0/1 Employed (REF)	0.92 (0.27)	0.94 (0.24)	0.92 (0.26)	0.79 (0.41)
	0/1 Inactive for any reason	0.08 (0.27)	0.06 (0.24)	0.07 (0.26)	0.21 (0.41)
Mother's occupation	0/1 Inactive for any reason (REF)	0.41 (0.49)	0.46 (0.50)	0.48 (0.50)	0.50 (0.50)
	0/1 Employed part-time	0.26 (0.44)	0.17 (0.38)	0.15 (0.36)	0.35 (0.48)
	0/1 Employed full-time	0.34 (0.47)	0.37 (0.48)	0.37 (0.48)	0.16 (0.37)
Hrs cc provided by relatives	Weekly hours of childcare by relatives	3.03 (9.12)	7.37 (14.30)	4.65 (11.17)	4.09 (8.81)
Father's earnings	Annual gross income, in thousands €	28.00 (25.35)	27.71 (21.87)	20.55 (13.09)	46.48 (40.45)
Mother's earnings	Annual gross income, in thousands €	12.49 (12.99)	11.51 (15.08)	9.04 (11.46)	14.90 (23.22)

Source: Authors' own elaboration on EU-SILC data.

As suggested by Johansen et al. (1996) and for Italy by Del Boca et al. (2005) and Del Boca and Vuri (2007), more educated women might better appreciate the role of socialisation and education offered by formal care services. The effect of the mother's education is particularly strong in France, mirroring the effective emphasis placed in French policies not only on the indirect cost of having children, but also on the importance of early and collective socialisation of children (Letablier 2003). Moreover, higher investments in education may also imply a stronger attachment to employment and greater need for more reliable childcare arrangements than those provided by informal care.

Accordingly, in these three countries employed mothers are more likely to use formal childcare. Relying on stable childcare arrangements seems to be important for women to reconcile their family and work duties. Part- and full-time employed mothers have a higher chance to use part-time childcare solutions in France, Italy and Spain. For example, comparing part-time employed mothers to those not working, the relative risk of using part-time childcare options relative to no use of childcare is

expected to increase by a factor of 6.18 (i.e.  $\exp(1.822)$ ) in France, by 4.74 (i.e.  $\exp(1.555)$ ) in Italy and by 3.71 (i.e.  $\exp(1.312)$ ) in Spain. In France and Italy the effect is stronger for part-time employed mothers than for those employed full-time. In all four countries employed mothers are also more likely to use full-time childcare solutions. The effect of those employed full-time is stronger than for those employed part-time. Comparing full-time employed mothers to those not working, the relative risk of using full-time childcare arrangements relative to no use of childcare is expected to increase by a factor of 109.84 (i.e.  $\exp(4.699)$ ) in France, by 2.87 (i.e.  $\exp(1.055)$ ) in Italy, by 15.75 (i.e.  $\exp(2.757)$ ) in Spain and by 5.98 (i.e.  $\exp(1.788)$ ) in the UK.

The father's characteristics appear not to be strongly related to the use of formal childcare in these countries. In Italy fathers are more likely to rely on part-time childcare arrangements when unemployed or inactive. An explanation for such a result might be that fathers are not "expected" to take care of the children anyway when these are very young. Their employment status might be more a constraint rather than a choice to fulfil childcare needs. Another explanation could be that being in such an unfavourable employment condition, they access more easily public childcare services.

Table 5 – Multinomial logit model of childcare use: coefficients and standard errors. Baseline: no use of formal childcare

	FR		IT		SP		UK	
	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.
<b>Part-time use of formal childcare</b>								
Child's age	1.383 (0.19)	***	0.944 (0.17)	***	1.456 (0.15)	***	1.290 (0.13)	***
Mother's age	0.021 (0.03)		0.022 (0.03)		0.011 (0.02)		0.023 (0.02)	
Other children aged 0-5	0.039 (0.26)		0.499 (0.29)	*	-0.316 (0.22)		0.153 (0.20)	
Father's education=secondary	-0.521 (0.37)		-0.405 (0.29)		0.027 (0.28)		-0.133 (0.31)	
Father's education=post secondary/tertiary	-0.018 (0.43)		-0.368 (0.39)		0.377 (0.29)		-0.058 (0.35)	
Mother's education=secondary	1.592 (0.50)	***	1.067 (0.37)	***	0.520 (0.29)	*	0.081 (0.35)	
Mother's education=post secondary/tertiary	1.987 (0.54)	***	1.729 (0.45)	***	0.353 (0.32)		0.524 (0.40)	
Father's occupation=inactive	0.035 (0.47)		0.998 (0.52)	*	-0.162 (0.44)		-0.073 (0.28)	
Mother's occupation=employed part-time	1.822 (0.36)	***	1.555 (0.36)	***	1.312 (0.32)	***	0.273 (0.24)	
Mother's occupation=employed full-time	1.584 (0.42)	***	0.753 (0.38)	**	1.817 (0.31)	***	-0.341 (0.36)	
Hrs cc provided by relatives	-0.018 (0.01)		-0.005 (0.01)		-0.050 (0.01)	***	0.006 (0.01)	
Father's earnings	0.011 (0.01)	*	-0.002 (0.01)		-0.006 (0.01)		0.009 (0.00)	***
Mother's earnings	-0.018 (0.02)		0.000 (0.01)		-0.011 (0.01)		0.009 (0.01)	
Constant	-5.930 (0.71)	***	-5.532 (0.61)	***	-3.851 (0.50)	***	-3.046 (0.47)	***

Significance at level: \*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table 5 continues on the next page.

Table 5 (continued) – Multinomial logit model of childcare use: coefficients and standard errors.  
Baseline: no use of formal childcare

	FR		IT		SP		UK	
	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.
<b>Full-time use of formal childcare</b>								
Child's age	1.134 (0.15)	***	0.946 (0.11)	***	1.962 (0.15)	***	1.163 (0.20)	***
Mother's age	0.019 (0.02)		-0.006 (0.02)		0.034 (0.02)		0.086 (0.03)	***
Other children aged 0-5	0.417 (0.22)	*	0.215 (0.17)		0.091 (0.22)		1.100 (0.33)	***
Father's education=secondary	-0.388 (0.35)		-0.011 (0.19)		-0.051 (0.27)		0.141 (0.59)	
Father's education=post secondary/tertiary	0.473 (0.40)		-0.133 (0.27)		-0.143 (0.28)		-0.265 (0.62)	
Mother's education=secondary	0.819 (0.45)	*	0.127 (0.20)		0.475 (0.28)	*	-0.546 (0.74)	
Mother's education=post secondary/tertiary	1.449 (0.48)	***	0.575 (0.28)	**	0.922 (0.30)	***	0.217 (0.76)	
Father's occupation=inactive	-2.390 (0.75)	***	0.562 (0.38)		-0.596 (0.47)		-0.291 (0.56)	
Mother's occupation=employed part-time	3.992 (0.50)	***	1.078 (0.25)	***	1.469 (0.32)	***	1.513 (0.42)	***
Mother's occupation=employed full-time	4.699 (0.52)	***	1.055 (0.24)	***	2.757 (0.31)	***	1.788 (0.49)	***
Hrs cc provided by relatives	-0.095 (0.02)	***	-0.037 (0.01)	***	-0.110 (0.01)	***	-0.092 (0.02)	***
Father's earnings	-0.006 (0.01)		0.006 (0.00)		0.007 (0.01)		0.015 (0.00)	***
Mother's earnings	0.022 (0.01)	*	-0.005 (0.01)		-0.005 (0.01)		0.036 (0.01)	***
Constant	-6.525 (0.74)	***	-3.187 (0.34)	***	-5.398 (0.52)	***	-6.724 (1.02)	***
Pseudo R2	0.374		0.123		0.295		0.243	
Log likelihood	-499.62		-772.67		-675.52		-504.57	
LR Chi-square	597.49	***	216.02	***	563.84	***	323.56	***
Number of cases	775		1169		858		631	

Significance at level: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Conversely, French fathers in an inactive employment condition are less likely to use full-time formal childcare, possibly because they take benefit of state support for childcare which is rather generous and equally accessible for men and women.

The UK pattern is somewhat different from that identified in the other three European countries, especially for the part-time childcare option. Apart from the effect of the child's age, only the father's earnings are significantly and positively associated with the use of part-time formal childcare. This relation is even more evident in case of full-time formal childcare arrangements. Moreover, both parent's earnings are significantly associated with a higher chance of having a child in formal childcare for more than 21 hours per week. Additionally, the effect of the mother's earnings is higher than that observed for men. These results suggest that the choice of childcare arrangement depends on the equilibrium between women's employment/wage and the cost of childcare. With formal services

being almost completely delegated to the private market, the possibility to afford expensive services is crucial. Withdrawing from the labour force for a few years until the child is old enough to attend the public school becomes a more efficient solution as soon as the cost of the service is higher than one's earnings.

The key role of the mothers' characteristics (in all countries and for both part- and full-time options) in the use of formal services suggests that care is mostly a mother's issue and that formal childcare is an instrument to reconcile work and family.

The use of alternative childcare strategies is clearly related to the use of formal childcare but slightly differs among the countries under study. Only in Spain the use of childcare provided by relatives and friends shows a significantly negative association with the use of part-time formal services. For the full-time option all countries show a negative and highly significant association. For an hour increase of childcare provided by relatives or friends the relative risk of using full-time childcare relative to no use of childcare is expected to change by a factor of 0.91 (i.e.  $\exp(-0.095)$ ) in France, by 0.96 (i.e.  $\exp(-0.037)$ ) in Italy, by 0.90 (i.e.  $\exp(-0.110)$ ) in Spain and by 0.91 in the UK (i.e.  $\exp(-0.092)$ ). Such a result shows that the chance of using full-time childcare with respect to no use of formal childcare decreases significantly in all four countries as soon as informal care is available.

What emerges from the analysis is that family's characteristics associated with part- and full-time childcare arrangements are quite different. The former seems to be the "normal" childcare arrangement for employed families able to cope with the time out of formal childcare. The latter, i.e. the decision to enrol a child less than 3 years old in formal childcare for more than 20 hours, seems to be the option of "need" for those families unable to cope with childcare during the working hours (e.g. with informal childcare). Clearly this second option is strongly affected by a country's specific policies, such as the UK case, where parents' earnings play a major role.

In the next step of the analysis we pool together the four countries (Table 6). First, we investigate whether, besides child's and parents' characteristics, there are any significant country-specific differences influencing the time spent in formal childcare. Second, we are interested in exploring whether the effect of the mother's education and the mother's employment differs by country. Thus, we run three models including the country dummies (Model M1), the interaction of the country variable, first, with the mother's education (Model M2) and, second, with the mother's employment (Model M3).

The first model with country dummies shows that there is a significantly higher recourse to part-time childcare options in Spain, UK and France compared to Italy (Model M1). Full-time childcare is higher only in Spain and France compared to Italy. Therefore, controlling for relevant child's and parents' characteristics, it is suggested that other country-specific factors influence the time spent in formal childcare, such as childcare characteristics, the parental leave system and labour market regulation.

The model with the interaction between the country variable and the mother's education (Model M2) shows that there are significant differences between countries. Spanish and British women with less than secondary education are more likely to use part-time childcare solutions in comparison to Italian ones. The effect of secondary and higher education on the use of part-time childcare solutions is mitigated in the UK (interaction coefficient -1.073 and -0.945 for secondary and higher education, respectively) and Spain (interaction coefficient -1.031 for higher education). Nonetheless, these women are more likely to use part-time solutions than women in Italy. In comparison to Italian women with the same level of education, full-time childcare options are less used by French women with low education, but more likely among French women with secondary or higher education. Such a result strengthens the evidence from the MNL model for France, where it was suggested that French educated mothers place more importance on formal childcare use. No significant differences are observed for the other countries.



Table 6 – Multinomial logit model of childcare use: coefficients and standard errors. Baseline: no use of formal childcare. Pooled sample, models M1, M2, M3

	Model M1		Model M2		Model M3	
	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.
<b>Part-time use of formal childcare</b>						
SP	0.954 (0.16)	***	1.631 (0.36)	***	1.195 (0.28)	***
UK	1.747 (0.17)	***	2.668 (0.44)	***	2.362 (0.28)	***
FR	0.629 (0.18)	***	0.128 (0.54)		0.586 (0.31)	*
M_edu2			1.050 (0.36)	***		
M_edu3			1.373 (0.40)	***		
M_edu2*SP			-0.551 (0.44)			
M_edu2*UK			-1.073 (0.48)	**		
M_edu2*FR			0.497 (0.59)			
M_edu3*SP			-1.031 (0.46)	**		
M_edu3*UK			-0.945 (0.52)	*		
M_edu3*FR			0.668 (0.61)			
M_part					1.713 (0.33)	***
M_full					1.046 (0.31)	***
M_part*SP					-0.822 (0.43)	*
M_part*UK					-1.209 (0.38)	***
M_part*FR					0.023 (0.44)	
M_full*SP					0.036 (0.37)	
M_full*UK					-0.886 (0.41)	**
M_full*FR					0.421 (0.43)	

Significance at level: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Notes: SP=Spain; UK=United Kingdom; FR=France; M\_edu2=Mother with secondary education; M\_edu3=Mother with post secondary/tertiary education; M\_part=Mother employed part-time; M\_full=Mother employed full-time. Controlled for the child's age, the mother's age, the presence of other children aged 0-5, the father's education, the father's employment, the father's earnings, the mother's earnings, the number of hours of childcare provided by relatives or friends.

Table 6 continues on the next page.

Table 6 (continued) – Multinomial logit model of childcare use: coefficients and standard errors.  
 Baseline: no use of formal childcare. Pooled sample, models M1, M2, M3

	Model M1		Model M2		Model M3	
	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.	Coeff. (SE)	Sig.
<b>Full-time use of formal childcare</b>						
SP	0.347 (0.13)	***	0.063 (0.24)		-0.158 (0.21)	
UK	-0.164 (0.18)		-0.465 (0.64)		-1.053 (0.33)	***
FR	0.568 (0.13)	***	-0.853 (0.36)	**	-2.434 (0.46)	***
M_edu2			-0.109 (0.21)			
M_edu3			-0.090 (0.26)			
M_edu2*SP			0.465 (0.32)			
M_edu2*UK			0.081 (0.68)			
M_edu2*FR			1.246 (0.41)	***		
M_edu3*SP			0.611 (0.33)	*		
M_edu3*UK			0.943 (0.70)			
M_edu3*FR			2.245 (0.43)	***		
M_part					0.935 (0.24)	***
M_full					0.818 (0.20)	***
M_part*SP					0.160 (0.36)	
M_part*UK					0.720 (0.43)	*
M_part*FR					3.128 (0.53)	***
M_full*SP					1.097 (0.27)	***
M_full*UK					1.335 (0.44)	***
M_full*FR					4.142 (0.50)	***
Pseudo R2	0.241		0.248		0.262	
Log likelihood	-2626.83		-2600.61		-2553.45	
LR Chi-square	1663.86	***	1716.29	***	1810.61	***
Number of cases	3433		3433		3433	

Significance at level: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Notes: SP=Spain; UK=United Kingdom; FR=France; M\_edu2=Mother with secondary education; M\_edu3=Mother with post secondary/tertiary education; M\_part=Mother employed part-time; M\_full=Mother employed full-time. Controlled for the child's age, the mother's age, the presence of other children aged 0-5, the father's education, the father's employment, the father's earnings, the mother's earnings, the number of hours of childcare provided by relatives or friends.

The third model (M3) includes the interaction between the country variable and the mother's employment. In France, Spain and the UK unemployed or inactive women are more likely to use the part-time option in comparison to Italian ones. The effect of both part- and full-time mother's employment on part-time childcare solutions is weakened in the UK (interaction coefficient -1.209 and -0.886 for part- and full-time employment, respectively). However, the chance of using part-time childcare is still higher than for Italian employed women. With regard to the choice of full-time childcare arrangements, British and French unemployed or inactive women are less likely to opt for such a solution than Italian ones. The mother's part-time employment increases the chance of choosing a full-time solution in France compared to Italy. Furthermore, mothers employed full-time have clearly higher recourse to full-time childcare in Spain, the UK and France in comparison to Italy. Such a result suggests that in these three countries women rely more on formal childcare as a means for family-work reconciliation, possibly because of differences in cultural norms such as more trust placed in institutionalised care (cf. El-Attar 2007), childcare system characteristics, parental leave schemes or labour market rules.

## 7. Conclusions

In this paper, we investigate the effect of household socio-economic characteristics on the time spent in formal childcare by very young children (aged 0 to 2) in four EU countries – France, Italy, Spain, and the UK. Apart from cultural differences, these four countries are characterised by differences in cultural norms, childcare and family policies, labour market dynamics, gender systems, all playing a key role in the work-family reconciliation.

Different family strategies have been identified with regard to the use of part-time or full-time childcare arrangements. The country-specific models suggest that there are cross-country differences in the household determinants of formal childcare use. France, Italy and Spain seem to follow similar patterns: women are seen as the principal caregivers and therefore formal childcare use depends strongly on the mother's preferences and needs, in our models proxied by mother's education and employment condition. Already the part-time option appears to help mothers reconcile work and family in these countries. No significant effect of mother's education and employment has been registered for the UK.

The full-time childcare option is confirmed to be a valuable support for working mothers in all four countries considered. However, it seems that informal care is preferred to this solution, even in countries with a more egalitarian division of gender roles. Moreover, in the UK, which is characterised by a more individualistic system, less generous childcare policies but a much more flexible labour market, the use of full-time childcare arrangements depends also on the parents' possibility to afford its costs. Families need to interact with the private market and therefore individual earnings turn out to be a significant predictor of full-time childcare use.

Controlling for the child's and family's characteristics, the residual effect of the country variable in the pooled models confirmed the presence of other unobserved country-specific factors, such as childcare availability, parental leaves and the flexibility of the labour market, which determine a different recourse to formal childcare in the four countries under study. Compared to Italy, in the other three countries the use of part-time (France, Spain, and UK) and full-time (France and Spain) childcare arrangements is more likely. Moreover, the effect of mothers' characteristics differs across the four countries. It emerges clearly that the recourse to the full-time option is especially appreciated by highly educated French mothers. With regard to the mother's employment, significant differences are noted especially for full-time childcare. Full-time employed mothers in France, Spain and the UK have a greater chance to enrol their children in full-time formal care.

To conclude, our analyses show that the elements entering clearly the parents' decision-making process about using formal childcare arrangements have to do with their employment status and economic condition. The effect of these factors differs both by country and by the type of childcare

arrangement (part- or full-time). Such a result reflects differences in childcare and family policies and labour market regulation, deriving from distinct cultural and institutional legacies. Moreover, our results suggest that further reflection is needed about the impact of the gender system. In France, Italy and Spain, the mother's education and employment are clearly identified as key factors, while the results for the UK are not equally straightforward. Apart from the mother's employment status, in the UK both the father's and the mother's earnings are relevant for the full-time option. Compared to the other three EU countries, the UK is characterised by a more gender-neutral approach with regard to family and labour market policies and the gendered divisions of paid and unpaid work is not always explicitly tackled (Lewis and Campbell 2008). In the UK, the promotion of flexible working arrangements, which favour better strategies for reconciling work and family life (cf. OECD 2001), is addressed to both women and men. This possibly makes the sole mother's characteristics less decisive in the use of childcare. In the UK, childcare use as such is considered a matter of parental choice, i.e. a private issue. In comparison to France, Italy and Spain, childcare use seems to depend mostly on the parents' interaction with a more flexible labour market and family's economic disposability. Concretely, after weighing up costs of childcare and family's earnings, parents decide whether to remain in the labour market, and hence pay for childcare services, or to step out of the labour market (temporarily/partially) and take care of the children themselves.

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