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**DEMOGRAPHIC RESEARCH**

*A peer-reviewed, open-access journal of population sciences*

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***DEMOGRAPHIC RESEARCH***

**VOLUME 42, ARTICLE 19, PAGES 549–588**

**PUBLISHED 17 MARCH 2020**

<https://www.demographic-research.org/Volumes/Vol42/19/>

DOI: 10.4054/DemRes.2020.42.19

*Research Article*

**Childcare arrangements and working mothers’  
satisfaction with work–family balance**

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## **Childcare arrangements and working mothers' satisfaction with work–family balance**

**Bruno Arpino<sup>1</sup>**

**Francesca Luppi<sup>2</sup>**

### **Abstract**

#### **BACKGROUND**

Difficulties with work–family reconciliation contribute to explaining the low participation of women in the labour market and low fertility levels in several developed countries. Understanding how much different types of childcare can help mothers to balance family and work is crucial for implementing ad hoc policies.

#### **OBJECTIVE**

This study examines whether working mothers' satisfaction with work–family balance is associated with different combinations of paid and unpaid childcare arrangements. Difficulties in using different types of childcare are also considered.

#### **METHODS**

We use random effects models on panel data from the Household, Income and Labour Dynamics in Australia (HILDA) survey (2003–2013).

#### **RESULTS**

Results show that a balanced mix of paid and unpaid childcare is associated with mothers' highest satisfaction. Difficulties related to the affordability and the flexibility of paid childcare negatively relate to the satisfaction with work–family balance. Moreover, even after adjusting for experienced difficulties, the “mixed” arrangement guarantees the most satisfying combination of work and family responsibilities.

#### **CONTRIBUTION**

Taken together, our analyses are suggestive of the idea that improving the flexibility and the affordability of paid childcare services is a way to increase mothers' satisfaction with the work–family balance. The issue might become even more urgent if we consider that grandparents' availability is not so obvious in a context where young people work and live at long distance from their original family, and when age at first (grand)parenthood is increasing.

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## **1. Introduction**

In the last few decades there has been an increased participation of women, and mothers among them, in the labour market (Jaumotte 2004; Janus 2012); still, women are much more involved in childcare than men (Winefield et al. 2011). This “double shift” (Hochschild 1989) may imply for many working mothers a high level of strains derived by pressures from incompatibilities between the roles assumed in the labour market and in the family (Frone 2003; Greenhaus and Beutell 1985; Kopelman, Greenhaus, and Connolly 1983; Voydanoff 2005). Achieving a satisfactory work–family balance would require the fulfilment of the role-related expectations in the family and at work, negotiating individual’s involvement in the two life spheres (Grzywacz and Carlson 2007).

Studying satisfaction with work–family balance is important for a number of reasons. Previous studies have found that work–family balance influences organizational commitment, job satisfaction, family satisfaction, overall life satisfaction, mental health, and marital quality (Losoncz and Bortolotto 2009; Lu et al. 2009; Matysiak, Mencarini, and Vignoli 2016; Wayne et al. 2017). Other studies have found that a better work–family balance is associated with a higher fertility intentions and outcomes (Begall and Mills 2011; Mills et al. 2008; Shreffler, Pirretti, and Drago 2010).

Because working mothers are those who generally find it more difficult to reconcile their work and family life spheres (Duxbury and Higgins 1991; Matysiak, Mencarini, and Vignoli 2016), studying their satisfaction with work–family balance is particularly significant (Craig and Powell 2011). Childcare outsourcing is decisive in attaining a good work–family balance (Avery, Haynes, and Haynes 2000; Kirkwood and Tootell 2008). There is an extensive literature focusing on the effects of the availability and use of childcare on several parents’ and children’s outcomes, including fertility (Baizan, Arpino, and Delclós 2016), mothers’ employment (Brady 2016), and children’s development (Brilli, Del Boca, and Pronzato 2016). On the contrary, to the best of our knowledge, this is the first study that specifically examines the relationship between types of childcare used and mothers’ satisfaction with work–family balance. Additionally, we analyse combinations of different types of childcare (paid and unpaid), which, as noticed by Brady and Perales (2016), is uncommon. In fact, childcare studies usually focus either on one specific type of childcare or categorize them into one type or the other, overlooking the fact that in developed countries most families combine multiple sources of childcare (Brady and Perales 2016; Bünning 2017). Finally, we also consider difficulties that mothers face in their childcare arrangement and their role in influencing their satisfaction with work–family balance.

More specifically, we examine whether the ratio between unpaid childcare out of the total paid and unpaid outsourced childcare relates to working mothers' satisfaction with work–family balance. Additionally, we investigate the association between childcare arrangements and difficulties faced when searching for paid childcare options and whether part of the effect of childcare arrangements on satisfaction with work–family balance can be explained by these issues. We use panel data models on data from the Household Income and Labour Dynamics in Australia (HILDA) survey. Similar to several other countries, Australia is characterized by a frequent shift from an egalitarian to a traditional division of gender roles after the transition to parenthood (Craig, Mullan, and Blaxland 2010). In such a context, a high proportion of working mothers have been found to experience difficulties related to conciliation of work and family (Losonczi and Bortolotto 2009).

## **2. Background**

### **2.1 Satisfaction with work–family balance**

There is much discussion in the literature about the concept of work–family balance and several different operationalizations have been proposed (see Wayne et al. 2017 for a recent review). Several studies stress the bidirectional relationship between work and family spheres by distinguishing work-to-family and family-to-work conflict (see e.g., Lu et al. 2009; Matysiak, Mencarini, and Vignoli 2016). The work–family enrichment concept, instead, highlights possible positive interdependencies between work and family spheres, arguing that positive (negative) outcomes in one of the two can also produce positive (negative) spillovers into the other sphere (Gareis et al. 2009; Greenhaus and Powell 2006).

Other scholars point out that work–family balance is a global construct that captures an integrated perception of the interplay between work and family (Grzywacz and Carlson 2007; Valcour 2007; Voydanoff 2005). In this sense, work–family balance differs from conflict and enrichment concepts in that it does not refer to cross-domain spillovers nor does it consider a direction in the relationship (work-to-family, family-to-work) but involves an overall judgment of combining work and family roles (Carlson, Grzywacz, and Zivnuska 2009; Voydanoff 2005). We adopt this view and focus on overall satisfaction with work-life balance. According to Valcour (2007: 1512), satisfaction with work-life balance is defined as “an overall level of contentment resulting from an assessment of one’s degree of success at meeting work and family role demands.” Satisfaction with work–family balance is therefore viewed as an attitude with a cognitive component that relates to the appraisal of resource allocation, fit and

integration across roles, and an affective component that captures the resultant feelings or emotional states.

Conceptually, work–family balance satisfaction differs from combining satisfaction in work and family roles separately (i.e., an additive measure of job satisfaction plus family satisfaction), as it refers to integration across work and family, emphasizing how the roles are combined (Valcour 2007). The concept of balance has received different criticisms. For example, Rapoport and colleagues (2002) argue that each individual may weight work and family lives differently from the others. However, as Abendroth and Den Dulk (2011) notice, by focusing on overall satisfaction with the way work and family are managed, the fact that the significance of work or family life differs between individuals is taken into account.

## **2.2 Childcare arrangements and satisfaction with work–family balance**

A large number of studies examined the relationship between childcare availability and needs and satisfaction outcomes of mothers. For example, Steiber (2009) found that the experience of work-to-family conflict was related to childcare responsibilities. People with three or more children in the household, and especially with children aged below three, faced an increased risk of time-based conflicts. However, according to the review by Wayne et al. (2017), only a few published studies directly examined explanatory factors of overall satisfaction with work–family balance. None of them focuses on the role of combinations of unpaid and paid childcare arrangements as we do in this study.

Childcare arrangements are key in women's ability to juggle motherhood and work outside the home (Arpino, Pronzato, and Tavares 2014). The use of different combinations of paid or unpaid external childcare is influenced by several factors including parents' needs and socioeconomic status, children's age, availability of relatives and friends, and the family policies system (Brady and Perales 2016; Vincent and Ball 2006; Ward, Dale, and Joshi 1996; Williams 2010)

In the last decades, all Western countries developed policies devoted to facilitating the use of nonparental childcare (Bleijenbergh, Bussemaker, and De Bruijn 2006; Mills et al. 2014) as one of the interventions to sustain fertility and mothers' participation to the labour market. Family policies can provide support through public childcare services and financial support for making private services affordable to lower income families (Gauthier 1996; Esping-Andersen 2009) and greatly differ according to the type of welfare state in which they are developed. In Scandinavian countries, the state provides free public nonparental childcare plus long parental leaves, a mix that drastically reduces the use of other childcare options. In Australia, as well as in other countries with a liberal welfare state, such as the United Kingdom and the United States

(Esping-Andersen 1990), the government's intervention sustains the development of a private sector of childcare services through subsidies and tax allowances especially directed to low-income families (Crompton, Brockmann, and Lyonette 2005).

Formal childcare services may be preferred by some families as they guarantee continuity and higher quality compared to other childcare arrangements. However, in countries in which childcare services are limited (such as in the Southern Europe) and not universally guaranteed (as in Australia and other Anglo-Saxon countries), the matching between parents' working schedules and opening hours and flexibility of the service becomes crucial to guarantee a satisfactory work–family balance (Brilli, Del Boca, and Monfardini 2013). This issue is particularly relevant for parents working nonstandard hours, a common situation among young couples and for those earning lower salaries (Baxter and Hand 2016). On the one hand, they might have difficulties to find childcare centres sufficiently close to their home and/or job place that are open for all the time they need; on the other hand, they have less economic resources for additional forms of paid childcare (i.e., a babysitter) to fill the time not covered by the formal childcare. Difficulties related to cost, time, and location of external childcare can therefore reduce the positive returns in terms of work–family balance obtained by outsourcing childcare. The flexibility problem in using formal childcare seems to be the reason why low-income parents, often working nonstandard hours, have been found, on average, to be less satisfied about childcare services (Curtis 1997; Fuller, Holloway, and Liang 1996).

Given these limitations related to the use of childcare services, it may become crucial to complement or substitute childcare centres with other outsourced types of childcare. If families can afford them, nannies or other informal paid solutions can be used. Alternatively, relatives and friends represent a possible source of support, reducing the care burden of parents, the economic efforts for outsourcing childcare and relaxing the time constrain linked to the opening hours of childcare centres (Bordone, Arpino, and Aassve 2017; Wheelock and Jones 2002). In addition, cultural factors can lead working parents to prefer grandparents' help instead of paid childcare services. For example, individuals with more traditional values might think that grandparents are more trustworthy in caring own children than childcare centres (Arpino, Pronzato, and Tavares 2014; El-Attar 2007). Despite its flexibility and being free, relying only on unpaid childcare provided by grandparents, other relatives, or friends might raise problems of discontinuity and difficulties to obtain long hours. As a consequence, the possibility to combine different sources of paid and unpaid childcare might mitigate the difficulties associated with relying just on one of these sources, resulting in a higher satisfaction with work–family balance.

### **2.3 The Australian context**

Our study uses data from Australia, a context characterized by a relatively traditional division of gender roles especially after the transition to parenthood (Baxter, Hewitt, and Haynes 2008; Craig, Mullan, and Blaxland 2010). Mothers are still the primary childcare giver in the family (Cassells et al. 2005) and suffer more than their husbands for the time stress related to combined work and family tasks (Buddelmeyer, Hamermesh, and Wooden 2017). Characteristics of the Australian context are quite typical within the ‘liberal’ or ‘residual’ social welfare model, in which the state provides a safety net when the market and the family fail (Esping-Andersen 1990). Even though public expenditure for childcare is in line with other OECD countries, such as Southern Europe or English speaking countries (OECD 2017), most of the Australian public investment for childcare goes for cash-benefits and tax rebates for families with children under the age of 3. This incentivizes parents to depend on unpaid support, provided by relatives and friends, or private childcare services, whose cost is only partially subsidized by government income-based allowances, i.e., childcare benefit (Kilkey 2000; Brennan 2007; White and Friendly 2012).

The lack of policies for working mothers largely explains why Australian mothers reduce their labour market attachment after the arrival of the first child (Cass 2007), either leaving it or working part time. The introduction of the universal paid maternity leave in 2011 did not produce substantial positive effects on improving gender equality in the family and work place. On the one side, it did not increase mothers’ post-birth participation to the labour market (Schönberg and Ludsteck 2014), while on the other side it did not reduce mothers’ stressful experience associated with the double shift (Pocock, Charlesworth, and Chapman 2013). According to Pocock and colleagues (2013), the persistence of unequal burden in gender division of domestic tasks and childcare is due to the lack of integration between Australian work/family related policies, particularly regarding caring duties.

Despite the difficulties in reconciling family and work, the availability of part time contracts allowed the proportion of working mothers to increase over time (De Vaus 2004; McDonald 2013). Among OECD countries, Australia has one of the highest proportions of couples in which only one partner works full time while the other does not work (30%, while the OECD average is around 25%), and dual-earner couples in which the other partner works part time (40%, compared to 20% in the OECD area, based on our elaboration on OECD database 2014: <https://data.oecd.org/>).

In such a context, difficulties related to work–family reconciliation are likely to be strong and the availability of flexible paid and unpaid childcare may be quite important for mothers’ satisfaction with work–family balance. An Australian study (Baxter and Hand 2016), conducted on a sample of working parents, investigated to which extent childcare services are flexible enough to meet needs of parents working nonstandard



hours. Through in-depth interviews, the authors found that matching working time with opening hours, affordability, and proximity of childcare centres were the most important aspects for parents' judgment about the satisfaction with the childcare. Using other forms of paid childcare (such as babysitters) in order to compensate for nonmatching hours was too expensive for most of them.

The proximity problem is often an issue in a country such as Australia where paid childcare is not widespread compared to other countries such as the United Kingdom (Brady and Perales 2016). The availability of childcare services in Australia is a very geographical-related issue: one third of the children under three years use centre-based childcare services (Breunig et al. 2011), but the proportion is considerably lower in the rural areas with respect to urban centres. It has also been found that in Australia proximity and affordability are related also to quality issues. In particular, low-income parents or parents living in areas where it is more difficult to access paid childcare are significantly less satisfied with both the quality and the cost of the services (Breunig et al. 2011; Mocan 2007).

Finally, because childcare services are usually expensive, even when the government subsidizes their access (Brady and Perales 2016), socioeconomic characteristics matter in explaining childcare arrangements (Vincent and Ball 2006; Williams 2010). In particular, relying only on unpaid childcare is more widespread among low-income and less educated parents compared to medium-high income and highly educated ones (Bryson et al. 2012; Rutter and Evans 2011).

## **2.4 Hypotheses**

Summarizing the previous discussion, we can put forward several hypotheses that we test in our multivariate analyses. First, it is reasonable to assume that mothers who combine unpaid and paid child arrangements report higher levels of satisfaction with work–family balance as compared to mothers that only use one of the two childcare types (H1). In other words, we expect to find an inverted U-shaped relationship between the ratio of unpaid to total childcare and satisfaction with work–family balance.

As for the relationship between childcare arrangements and perceived difficulties related to outsourcing childcare, the expected pattern is more complex as it may depend on the type of difficulty. According to the previous discussion, we identify five main types of difficulties mainly related to the cost, the flexibility, the quality, the possibility of juggling multiple childcare arrangements, and their availability. Mothers who have to rely less on paid childcare will be less likely to be worried for economic reasons but they may be more concerned that their children would not benefit from quality care

offered by professionals. Additionally, unpaid childcare is expected to be more flexible. Therefore, we expect that the higher the amount of unpaid childcare out of the total externalized childcare, the lower the perceived difficulties related to cost and flexibility (H2a) and the higher those related to quality and to availability (H2b). As for difficulties related to juggling, we may argue that mothers may find it difficult and stressful to juggle multiple childcare arrangements. Consequently, we expect an inverted U-shaped relationship between the ratio of unpaid to total childcare and difficulties related to juggling multiple childcare arrangements, i.e., using only (or mainly) paid or unpaid childcare should be expected to reduce the perception of this type of difficulty (H2c).

Finally, we test whether the relationship between the unpaid childcare ratio and satisfaction with work–family balance changes after we control for perceived difficulties in externalizing childcare. Because, as mentioned above, the association between the unpaid childcare ratio and the perceived difficulties is a complex one, as for some difficulties the sign of the relationship may be opposite than for others, or even nonlinear, we refrain from formulating a third hypothesis.

### **3. Methods**

#### **3.1 Data**

We use data from the Household Income and Labour Dynamics in Australia (HILDA), a panel survey carried on since 2001 on a sample of households, representative of the Australian population. Because full information on difficulties related to childcare is available only since wave 3 (2003), we use data from 11 waves (2003–2013) of the survey. The sample has been topped up in 2011 and individuals who entered at this later stage are also included in the analyses. All the variables used in our study are available and exploited annually starting from 2003. We restrict our sample to working mothers who are in a partnership, outsource some childcare, and have at least one child aged 13 or younger. This is because childcare arrangements, by definition, are those directed to children (age 0–12) and also the HILDA survey defines children as offspring in the 0–12 range. We exclude single mothers because for them work–family balance dynamics differ considerably with respect to mothers in a partnership, and the number of cases in our data is too small to allow separate analyses. This sample selection criterion gives us an initial sample of 1,646 mothers and 5,946 observations. After discarding observations with missing values (767 observations due to missing values on control variables and 580 on key variables of interest), 1,492 mothers enter our final sample (4,599 individual-year observations). Mothers are observed for a minimum of two

waves and a maximum of 11 waves (the quartiles for the number of waves available per mother are: 2, 3, and 5).

### 3.2 Dependent variable

Our main dependent variable is the satisfaction with the work–family balance. The HILDA questionnaire asks: How satisfied are you with the flexibility available to balance work and nonwork commitments? The question is asked every year on an 11-point scale ranging from zero (completely unsatisfied) to 10 (completely satisfied). In a previous study on mothers' work–family balance satisfaction and children's age, Craig and Sawrikar (2008) compare different measures of work–family balance and the related satisfaction from different Australian surveys. They found great consistency and similarity in the results when using alternative work–family balance satisfaction measures or the satisfaction with the flexibility to balance work and nonwork commitment as it appears in the HILDA survey. Therefore, this supports the interpretation of our dependent variable as a measure of satisfaction with the work–family balance.

### 3.3 Explanatory variables

Our explanatory variables are the ratio of unpaid childcare used over the total amount of nonparental childcare and the experience of difficulties in using external childcare. As for the use of paid and unpaid childcare, the HILDA questionnaire asks for the number of hours spent in various forms of childcare in a typical week (*unpaid*: provided by grandparents living in the household/elsewhere, brothers/sisters, other relatives living in the household/elsewhere, friends living in the household/elsewhere, others living in the household/elsewhere; *paid*: babysitter, day care centres, family day care centres, before and after school care, kindergarten, day care provided at the work place, which is usually only partially covered by the employer). The information is available as the amount of hours of childcare for all the children present in the household, distinguishing between preschool (age 0–4) and school aged children (age 5–12). We sum the total number of hours spent in unpaid forms of childcare and the total number of hours spent in paid forms of childcare, thus accounting for the total demand of outsourced childcare. We then generate a ratio calculated as the number of hours of unpaid childcare over the total number of hours spent in both unpaid and paid childcare. The ratio takes values between zero, when only paid childcare is used, and one, when only unpaid childcare is used.

Regarding the difficulties with the use of external childcare, questions are asked only to individuals using or intending to use paid childcare. A filter has been created in order to identify individuals using or intending to use paid childcare, on the basis of the question “At any time in the last 12 months have you used, or thought about using, any of these forms of child care so you (or your partner) could undertake paid work? You only need to answer yes or no.” To this subsample of individuals, the HILDA questionnaire asks to “Pick a number between zero and 10 to indicate how much of a difficulty each of the following has been for you in the last 12 months.” The list of difficulties is reported in Table 1.

**Table 1: Perceived difficulties related to the use of paid childcare (HILDA 2003–2013)**

<b>Cost difficulties</b>	<b>Flexibility difficulties</b>	<b>Quality difficulties</b>	<b>Juggling difficulties</b>	<b>Availability difficulties</b>
The cost of childcare ( <i>cost</i> )	Finding care at short notice ( <i>short notice</i> )	Finding care my children are happy with ( <i>happy</i> )	Juggling multiple childcare arrangements ( <i>juggling</i> )	Finding a childcare centre in the right location ( <i>location</i> )
	Finding care during the school holidays ( <i>holidays</i> )	Finding the right person to take care of my child ( <i>right person</i> )		Finding a place at the childcare centre of choice ( <i>place</i> )
	Finding care when the child is sick ( <i>sick</i> )	Finding care for a difficult or special needs child ( <i>special needs</i> )		
	Getting care for the hours needed ( <i>hours needed</i> )	Finding good quality childcare ( <i>quality</i> )		

In order to classify the difficulties, we first tried to implement a factor analysis to detect common factors among the items. However, due to the high number of missing values in some indicators, the results of the factor analysis are not completely reliable and enlargeable to the entire sample. Therefore, our classification is merely descriptive and items might not uniquely belong to one group. For example, “Getting care for the hours needed” can be included in the cost, the flexibility, and the juggling classes. We

decided to follow what was found in previous studies (Baxter and Hand 2016), which highlight a high prevalence of difficulties among Australian parents in matching their working hours with the opening hours of the childcare centres. The items have been included as separated variables in the regression models.

### **3.4 Control variables**

As control variables, we include sociodemographic information, such the age of the respondent, the highest level of education obtained (primary – reference category – secondary or tertiary), the quartiles of income (first quartile is the reference category), the number of children, distinguishing between those of preschool age (0–4) and school age (5–12), and relationship status (de facto relationship or married – reference category).

Previous studies have found these variables to directly or indirectly influence the decision to outsource childcare and the ability to balance work and family. Older women tend to be more family-oriented than younger, while more educated tend to outsource more family tasks and to be more attached to their job (Bianchi et al. 2000; Coltrane 2000). The presence of young children in the household increases the demand of care and household related activities, while it seems that married women show a higher “sense of responsibilities” for housework activities than cohabiters (Bianchi et al. 2000; Coltrane 2000).

Controlling for income and the fact that respondent received allowances and tax-benefits for childcare we have a proxy of the affordability of the use of paid childcare service. Besides, we control for whether the respondent lives in a rural or urban area, as a proxy for the availability of (close) childcare services (Breunig et al. 2011). Finally, for their influence on childcare arrangements and the satisfaction with the work–family balance, we also control for the number of hours of housework and childcare of the respondent and her partner (Abendroth and Den Dulk 2011), the hours of paid work for the partner and the fact that woman works full time or part time. Summary statistics for all the variables used in the multivariate analyses are presented in Table 2.

**Table 2: Descriptive statistics of the variables used in the multivariate analyses**

Variables	Proportion / mean	Variables	Proportion / mean
Satisfaction with work–family balance (mean)	7.63	Age (mean)	36.6
Ratio unpaid over total childcare (mean)	0.59	Partner's age (mean)	38.8
<i>Difficulties with paid childcare (mean)</i>		<i>Education (proportion)</i>	
Cost difficulties		Primary	15
with the cost of the childcare	3.35	Secondary	41
Flexibility difficulties		Tertiary	44
finding care at short notice	3.18	Income (mean)	35537\$AU
finding care during the school holidays	2.49	<i>Marital status (proportion)</i>	
finding care when the child is sick	3.86	Married	91
getting care for the hours needed	2.86	Cohabiting	9
Quality difficulties		<i>Area of residence (proportion)</i>	
finding care my children are happy with	2.05	rural areas	35
finding the right person to take care of my child	2.57	urban areas	65
finding care for difficult or special needs child	1.32	Receiving childcare allowances (proportion)	62
finding good quality childcare	2.54	<i>Work and family time (mean)</i>	
Juggling difficulties		working part time (proportion)	64.0
juggling multiple childcare arrangements	2.83	hours paid work - partner	64.7
Availability difficulties		hours of childcare	28.3
finding a childcare centre in the right location	2.22	hours of childcare - partner	14.0
finding a place at the childcare centre of choice	2.51	hours of housework	18.3
<i>Number of children in the household (mean)</i>		hours of housework - partner	7.3
Children in preschool age	0.8	hours of household errands	5.5
Children in school age	1.1	hours of household errands - partner	3.5
Total number of children	1.9		
Number of observations	4,599	Number of observations	4,599

### **3.5 Statistical methods**

We have implemented both fixed and random effect regressions and compared their results using Hausman tests. These tests did not reject the null hypothesis that both fixed and random effects models are consistent, supporting the decision to focus on the most efficient between the two estimators, i.e., the random effects model. Therefore, in the following we present results from random effects models.

Fixed effects regressions gave very similar results (estimates and graphs from fixed effects regressions are presented in the Supplementary Material Tables S-2 and S-3 and Figures S-1 and S-2).

We run three types of models: (1) We first estimate the relationship between satisfaction with the work–family balance and the ratio of unpaid childcare over the total outsourced childcare; (2) in a second step, we model the relationship between perceived difficulties with paid childcare and the ratio of unpaid childcare; (3) finally, we rerun model 1 for work–family balance satisfaction including both the ratio of unpaid childcare and difficulties with paid childcare as main explanatory variables. In all models we include all the control variables mentioned above.

To test for a quadratic relationship between satisfaction with work–family balance and the ratio of unpaid childcare, we include both the ratio and its square.

## **4. Results**

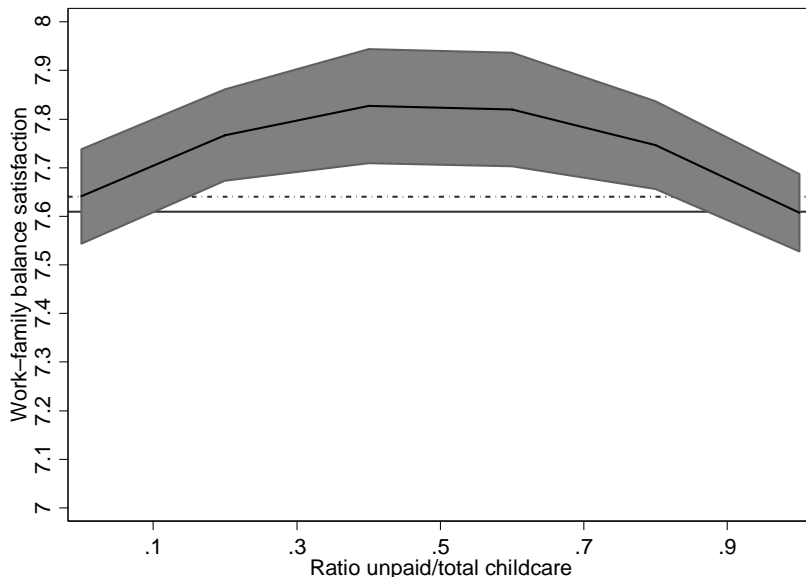
### **4.1 Ratio of unpaid childcare and satisfaction with work–family balance**

We start presenting the results of a random effects linear regression model where satisfaction with work–family balance is regressed on the unpaid childcare ratio, its square, and all control variables. To ease interpretation of the parabolic relationship between the unpaid childcare ratio and satisfaction with work–family balance, the results are displayed graphically in Figure 1. More specifically, Figure 1 plots the predicted satisfaction with work–family balance as function of the unpaid childcare ratio over its distribution with the 95% confidence band. All control variables are kept at the observed values and averaged out. The full regression estimates are reported in Table 3.

Figure 1 shows that the relationship between the proportion of unpaid childcare and satisfaction with work–family balance follows an inverted U-shape. In fact, the coefficient of the square of the ratio is negative and statistically significant (see Table 3). Confirming our first hypothesis, this relationship indicates that the highest level of satisfaction with work–family balance is experienced by mothers who use both

paid and unpaid childcare. More specifically, Figure 1 shows a pike in satisfaction with work–family balance that corresponds approximately to a 50% of the unpaid to total childcare ratio indicating that the ‘fifty-fifty’ mix seems to be the most comfortable for working mothers’ positive reconciliation between family and work spheres. On the contrary, as childcare arrangements deviate from this ‘equilibrium’ and either unpaid or paid childcare sources prevail, satisfaction with work–family balance declines. We also notice that neither a full reliance on paid nor on unpaid outsourcing is preferable to the other. The two extreme solutions are associated with statistically indistinguishable levels of satisfaction. Although the magnitude of the association between the unpaid childcare ratio and satisfaction with work–family balance at first sight does not seem to be strong, comparing the satisfaction levels at the pick and at the extremes gives a difference of about 0.2 points, which corresponds to the typical magnitude of important effects found in other studies on the same or similar outcomes (e.g., Arpino and de Valk 2018; Matysiak, Mencarini, and Vignoli 2016).

**Figure 1: Predicted level of satisfaction with the work–family balance by the proportion of unpaid childcare over the total outsourced childcare with 95% confidence band**



Notes: Predictions are from a random effect model where the main explanatory variables are the ratio between unpaid childcare over the total outsourced childcare and its square. All control variables are included. The dashed horizontal line indicates the level of predicted satisfaction with work–family balance when only paid childcare is used; the solid horizontal line indicates the level of predicted satisfaction with work–family balance when only unpaid childcare is used.



**Table 3: Random effects model predicting satisfaction with the work–family balance as function of the proportion of unpaid childcare over total outsourced childcare**

<b>Independent variables</b>	<b>Coef.</b>	<b>Std. Err.</b>
<i>Ratio n. hours unpaid childcare over total</i>		
Ratio unpaid/tot (linear)	0.806	0.378 **
Ratio unpaid/total (quadratic)	-0.793	0.361 **
<i>Control variables</i>		
Number of children in the household		
Number of preschool children	-0.004	0.067
Number of at school children	-0.130	0.047
Age	0.009	0.007
Education (Ref.: primary)		
Secondary	-0.073	0.123
Tertiary	-0.352	0.130 ***
Household equivalent income (Ref.: first quartile)		
Household eq. income – 2nd quartile	-0.138	0.083
Household eq. income – 3rd quartile	-0.167	0.091 *
Household eq. Income – 4th quartile	-0.152	0.105
Cohabiting (Ref.: married)	0.077	0.118
Living in a rural area (Ref.: urban)	0.001	0.089
Childcare allowances	-0.078	0.071
Working part time (Ref.: full time)	0.826	0.073 ***
Hours paid work (partner)	-0.000	0.000
Hours of childcare	0.005	0.002 ***
Hours of childcare (partner)	0.007	0.003 **
Hours of housework	0.002	0.003
Hours of housework (partner)	-0.022	0.005 ***
Hours of household errands	0.008	0.006
Hours of household errands (partner)	0.002	0.008
Constant	6.940	0.339 ***

Notes: \* p = .05; \*\* p = .01; \*\*\*; p = .001. Sample: working mothers in a partnership. Number of observations = 4599.

## **4.2 Ratio of unpaid childcare and difficulties with childcare**

In the second step of our multivariate analysis we test the relationship between the ratio of unpaid childcare over the total outsourced childcare and how strong several difficulties with outsourcing childcare have been experienced by working mothers. Results from linear random effects models estimated separately for each issue are presented in Figure 2 (full regression estimates are available upon request).

Not all our expectations from H2 are confirmed. As we anticipated, difficulties related with costs tend to be considerably weaker as the ratio of unpaid childcare increases. A similar relationship, although of a weaker magnitude, is observed also for difficulties related with care needed with a short notice or when the child is sick. Also, for these issues related to the flexibility of childcare, the higher is the ratio of unpaid childcare, the weaker are these difficulties. For other difficulties related to flexibility, such as “finding care during the school holidays,” we do not find any significant association with the ratio of unpaid childcare and for the difficulty to get “care for the hours needed” we actually find a moderate positive association. So, hypothesis H2a is partially confirmed.

As for the difficulties related to quality, we predicted a positive relationship with the ratio of unpaid childcare (H2b). This is confirmed for some of the items (“finding good quality childcare” and “finding care my children are happy with”) but not for others for which we do not find any significant relationship (“finding the right person to take care of my child” and “finding care for a difficult or special needs child”).

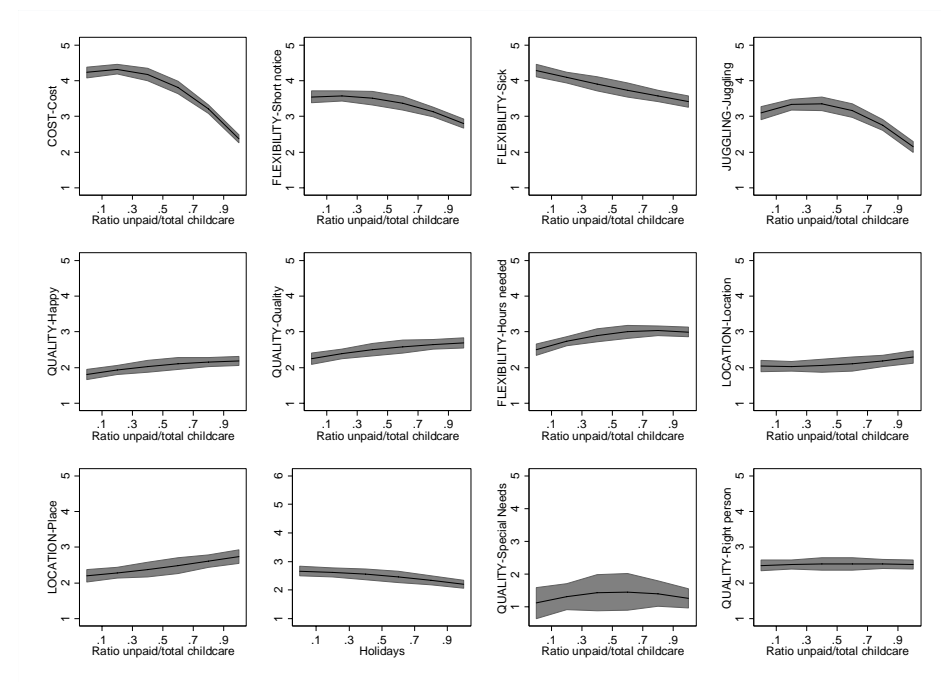
Finally, H2c predicted an inverted U-shaped relationship between the ratio of unpaid childcare and difficulties with juggling multiple childcare arrangements that is confirmed by the results reported in Figure 2. The difficulties with juggling multiple forms of childcare are more strongly perceived by working mothers using both paid and unpaid childcare. These difficulties are particularly reduced for those relying mostly on unpaid childcare.

## **4.3 Ratio of unpaid childcare and satisfaction with work–family balance adjusting for difficulties with childcare**

In the third and final step of our analyses, we test whether the relationship between the unpaid childcare ratio and satisfaction with work–family balance changes after we control for perceived difficulties in externalizing childcare. Among the ten items measuring difficulties related to outsourcing childcare, we included in this third step only two items: the first one related to the cost of childcare and the second one related to flexibility (“finding care at short notice”). As shown in Figure 2, the two items were

among those more clearly related to the ratio of unpaid childcare. Other items have been excluded because of the high percentage of missing observation (ranging from 17.7% to 89.4%; see Table S-1 in the Supplementary Material) or because the patterns of associations with unpaid childcare ratio were almost flat (as in the case of the quality-related indicators). The two included items had very low percentage of missing values (1.7% and 1.5%, respectively).

**Figure 2: Predicted level of perception of childcare difficulties by the proportion of unpaid childcare over the total outsourced childcare with 95% confidence band**

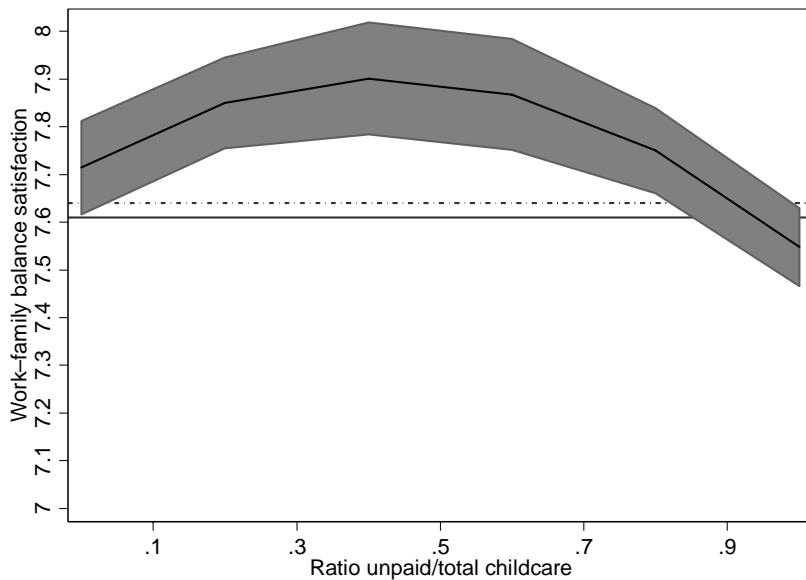


Notes: Predictions are from random effect models estimated for each issue separately. The main explanatory variables are the ratio between unpaid childcare over the total outsourced childcare and its square. All control variables are included.

As shown in Figure 3, the inclusion of the two items measuring difficulties related with childcare outsourcing, do not alter the conclusions based on the first model (full regression estimates are provided in Table 4). As in Figure 1, we still find evidence of an inverted U-shaped relationship between the ratio of unpaid childcare and satisfaction

with work–family balance: the ‘fifty-fifty’ mix of paid and unpaid childcare is confirmed to be the best option in terms of mother’s satisfaction with work–family balance. However, controlling for two important difficulties, related to cost and flexibility of childcare arrangements, we can notice that relying only (or largely) on unpaid childcare is associated with a slightly lower satisfaction with work–family balance with respect to relying only on paid childcare and as compared to what we found for mothers relying only on unpaid childcare not controlling for the difficulties (predicted values from Figure 1 for the extremes of the ratio are reported in the dashed and solid lines in Figure 3 for comparison).

**Figure 3: Predicted level of satisfaction with the work–family balance by the proportion of unpaid childcare over the total outsourced childcare, controlling for the difficulties related to paid childcare, with 95% confidence band**



*Notes:* Predictions are from a random effect model where the main explanatory variables are the ratio between unpaid childcare over the total outsourced childcare, its square and two items measuring perceived difficulties with childcare. All control variables are included. The dashed horizontal line is from Figure 1, indicating the level of predicted satisfaction with work–family balance when only paid childcare is used, without controlling for the difficulties in using paid childcare; the solid horizontal line is from Figure 1, indicating the level of predicted satisfaction with work–family balance when only unpaid childcare is used, without controlling for the difficulties in using paid childcare.

**Table 4: Random effects model predicting satisfaction with the work–family balance as function of the proportion of unpaid childcare over total outsourced childcare and the perceived difficulties with childcare**

Independent variables	Coef.	Std. Err.
<i>Ratio hours unpaid childcare over total</i>		
Ratio unpaid/tot (linear)	0.865	0.395 **
Ratio unpaid/total (quadratic)	-1.020	0.378 ***
<i>Difficulties with childcare</i>		
With cost	-0.034	0.012 ***
With short notice	-0.034	0.011 ***
<i>Control variables</i>		
Number of children in household		
Number of preschool children	0.046	0.069
Number of at school children	0.039	0.049
Age	0.011	0.008
Education (Ref.: primary)		
Secondary	-0.056	0.126
Tertiary	-0.248	0.132 *
Household equivalent income (Ref.: first quartile)		
Household eq. income – 2nd quartile	-0.207	0.087 ***
Household eq. income – 3rd quartile	-0.308	0.093 ***
Household eq. Income – 4th quartile	-0.446	0.102 ***
Cohabiting (Ref.: married)	0.062	0.120
Living in rural area (Ref: urban)	-0.006	0.090
Childcare allowances	-0.092	0.071
Working part time (Ref.: full time)	0.824	0.073 ***
Hours paid work (partner)	-0.001	0.000
Hours of childcare	0.008	0.002 ***
Hours of childcare (partner)	0.008	0.003 ***
Hours of housework	0.007	0.003 **
Hours of housework (partner)	-0.025	0.006 ***
Hours of household errands	0.009	0.006
Hours of household errands (partner)	0.003	0.009
Constant	7.538	0.344 ***

Notes: \* p = .05; \*\* p = .01; \*\*\*; p = .001. Sample: working mothers in a partnership. Number of observations = 4,599.

#### **4.4 Robustness checks**

We also estimated the same models reported above adding the total amounts of paid and unpaid outsourced childcare as control variables (see Supplementary Material Tables S-4 and S-5 and Figures S-3 and S-4). The graphs are very similar to those presented above indicating that results are indeed robust.

As it is also the case in other developed countries, most of the unpaid childcare for young children in Australia is done by grandparents (around 59% for preschool children and 27% for at school children in our data, on average across the waves). Therefore, as a robustness check in additional analyses (not shown but available upon request) we further controlled for the satisfaction with the relationship with the parents, but this did not change our results.

Given the importance of part time work as a strategy to reconcile work and family in Australia, we also tried to include an interaction between the ratio of unpaid childcare and working part time, but this interaction was never statistically significant.

Finally, we considered interactions between the ratio and, in turn, education and income, but interactions were not statistically significant and did not alter the results presented here.

### **5. Conclusion**

Using data from the Household Income and Labour Dynamics in Australia (HILDA), this article examined what combination of paid and unpaid childcare allows working mothers to reach the most satisfying balance between family and work.

Our analyses point to an inverted U-shape relationship between work–family balance satisfaction and the ratio of unpaid childcare on the total outsourced childcare. More specifically, we found that mothers who use a 50–50 combination of paid and unpaid childcare are those who report to be the most satisfied with work–family balance, while other combinations of childcare arrangements are associated with lower satisfaction.

We additionally tested the relationship between the ratio of unpaid childcare over the total outsourced childcare and how strong difficulties related to different aspects of outsourcing childcare have been experienced by working mothers. We found that the higher the ratio of unpaid childcare, the less likely is to declare to have experienced difficulties with the cost of childcare and finding care at short notice.

Finally, we estimated the association between satisfaction with work–family balance and the ratio of unpaid childcare controlling for difficulties related to childcare. The inverted U-shape relationship remained, but mothers who relied only on paid

childcare where found to be more satisfied than mothers who used only unpaid childcare. This indicates that net of the difficulties that mothers relying mostly on paid childcare may experience, this childcare arrangement is well suited to guarantee a more satisfying combination of work and family responsibilities.

While it seems that paid childcare can help mothers to achieve a more satisfying balance with family and work involvement, according to our results relying only on unpaid childcare does not seem to guarantee the same. Unpaid help by friends and relatives, usually grandparents, is not always available. Parents may also prefer paid childcare because of the quality of the care, which is usually higher if provided in care centres and by professionals. Additionally, relying on relatives and friends surely helps to overcome difficulties related to the cost and the strict opening hours of the care service, but it may lead mothers to ask for the minimum time needed, especially in a country where intensive grandparental childcare is not widespread. If finding a balance between work and family mostly depends on the availability of external unpaid help, this requires juggling with less structured care availability that does not guarantee continuity. In this sense, this might increase the stress and insecurity related to work–family reconciliation, while it might be detrimental for within family relationships.

The relevance of our study on childcare arrangements and satisfaction with work–family balance lies in its policy implications. Several studies demonstrated the importance of work–family balance for organizational commitment, job, family and overall life satisfaction, mental health, and marital quality (Losoncz and Bortolotto 2009; Lu et al. 2009; Matysiak et al. 2016; Wayne et al. 2017).

Childcare outsourcing has been found to be decisive in attaining a good work–family balance (Avery, Haynes, and Haynes 2000; Kirkwood and Tootell 2008). Previous research has shown that flexibility, affordability, and availability of external childcare are important prerequisites for women’s participation in labour market and fertility (Baizan, Arpino, and Delclós 2016). This is especially relevant in a relatively traditional context as Australia, where mothers are still the primary caregiver for their children and they are extremely more likely than their partners to leave the labour market to care children or other relatives. It is not surprising that in Australia a high proportion of working mothers has been found to experience difficulties related to conciliation of work and family (Losoncz and Bortolotto 2009).

Our results suggest that not only outsourcing of childcare per se is important for attaining a satisfying work–family balance but also how it is divided between different forms of childcare. In particular, we found that once difficulties with cost and flexibility of childcare are net out, relying on paid childcare only or in combination with some unpaid childcare is associated with higher work–family balance satisfaction than using only unpaid childcare. Thus, policies devoted at offering high quality childcare services, with flexible opening hours, at affordable costs, may not only create strong incentives

to mothers for working full time (Brady 2016); these policies can also guarantee a higher level of satisfaction with work–family balance with positive effects on both the labour market and other spheres as suggested by the abovementioned studies on the consequences of attaining a good work–family balance.

Despite its relevance and strengths, our analysis has some limitations. Our study did not include mothers who have never joined or have left the labour market because of anticipated or actual conflicts between the work and family domains. Therefore, we may have underestimated the effect of the difficulties related to outsourcing childcare on the satisfaction with work–family balance because in the extreme case, mothers may solve conflicts between the two domains by sacrificing their job career. An interesting avenue for future research is to examine women's labour market exit as a consequence of their satisfaction with work–family balance.

Another possible source of distortion in our results concerns the fact that mothers who perceive high difficulties with paid childcare may reduce its use. However, in our data, controlling for the number of children in preschool and school ages, the amount of paid childcare shows very small changes over time. As a consequence, we can assume that parents tend to optimize the use of different sources of external childcare at the very beginning of their parenthood. However, the adoption of different paid-unpaid childcare arrangements might still be related to the anticipation of difficulties related to paid childcare. Because of possible endogeneity in the analysed relationships, our study does not make any strong causal claim.

It was beyond the scope of our study to investigate in-depth heterogeneities in the relationship between childcare arrangements, difficulties related to such arrangements and satisfaction with work–family balance. An important moderator factor in these relationships may be social class (Vincent and Ball 2006). Class differences may not only be relevant for aspects related to income levels and occupational characteristics. Class differences are also important because they entail differences in values and attitudes related to work–family arrangements (Williams 2010; Williams, Blair-Loy, and Berdahl 2013). In our analyses we accounted for several socioeconomic characteristics that are also correlated with class (income, education, number of hours of paid work, etc.). As mentioned in the robustness checks section, we also considered interactions with income and education but none of them resulted to be significant, meaning that, apparently, the benefit that mothers gain from combining paid and unpaid childcare is independent of the socioeconomic status. Examining the role of socioeconomic individual characteristics in achieving a good balance of paid and unpaid child care is beyond the scope of our study but it is an interesting avenue for future research. Future studies may also examine social class heterogeneities in the effect of childcare arrangements on satisfaction with work–family balance, especially in a cross-national perspective.



Taken together our analyses are suggestive of the idea that policies devoted at improving the flexibility and the affordability of paid childcare services are a way to increase mothers' satisfaction with the work–family balance, which might bring as a consequence an increasing presence and stability of women in the labour market. An increased satisfaction with work–family balance may also increase the likelihood of having an additional child, as the difficulties to balance family and work are often among the main reasons behind the decision to postpone or not to have another child (Luppi 2016). The issue might become even more urgent if we consider that grandparents' availability is not so obvious in a context where young people work and live at long distance from their original family, and when age at first parenthood is increasing.

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## Supplementary Material

**Table S-1: Number and percent of missing values for each difficulty with paid childcare on the total sample of mothers**

<b>Difficulties with childcare</b>	<b>Missing</b>	<b>%</b>
With the cost	78	1.69
Short notice	67	1.45
During school holidays	1,769	38.41
Sick child	1,004	21.80
Hours needed	813	17.65
Children are happy with	926	20.11
Right person	874	18.98
Special needs child	4,117	89.40
Good quality	937	20.35
Juggling care	1,899	41.24
Right location	1,680	36.48
Place at the centre	1,732	37.61
<i>Total sample</i>	<i>4,605</i>	<i>100</i>

**Table S-2: Fixed effects model predicting satisfaction with the work–family balance as function of the proportion of unpaid childcare over total outsourced childcare and controlling for the total amounts of paid and unpaid childcare**

<b>Independent variables</b>	<b>Coef.</b>	<b>Std. Err.</b>
<i>Ratio hours unpaid childcare over total</i>		
Ratio unpaid/tot (linear)	0.728	0.485
Ratio unpaid/total (quadratic)	−0.965	0.44 ***
<i>Total amount of childcare</i>		
Unpaid childcare	−0.005	0.003
Paid childcare	−0.007	0.003 ***
<i>Control variables</i>		
Number of children in household		
Number of preschool children	0.079	0.092
Number of at school children	0.04	0.07
Age	0.004	0.017
Education (Ref.: primary)		
Secondary	0.159	0.401
Tertiary	−0.591	0.673
Household equivalent income (Ref.: first quartile)		
Household eq. income – 2 <sup>nd</sup> quartile	−0.251	0.1 ***
Household eq. income – 3 <sup>rd</sup> quartile	−0.501	0.118 ***
Household eq. Income – 4 <sup>th</sup> quartile	−0.622	0.143 ***
Cohabiting (Ref.: married)		
Living in rural area (Ref: urban)	0.345	0.278
Childcare allowances	−0.114	0.091
Working part time (Ref.: full time)	0.632	0.054 ***
Hours paid work (partner)	−0.001	0.002
Hours of childcare	0.004	0.002 *
Hours of childcare (partner)	0.001	0.004
Hours of housework	0.009	0.004 ***
Hours of housework (partner)	−0.018	0.007 ***
Hours of household errands	0.011	0.007
Hours of household errands (partner)	0.001	0.01
Constant	7.887	0.749 ***

**Table S-3: Fixed effects model predicting satisfaction with the work–family balance as function of the proportion of unpaid childcare over total outsourced childcare, controlling for the perceived difficulties with childcare and the total amounts of paid and unpaid childcare**

Independent variables	Coef.	Std. Err.
<i>Ratio hours unpaid childcare over total</i>		
Ratio unpaid/tot (linear)	0.791	0.489
Ratio unpaid/total (quadratic)	-1.038	0.443 ***
<i>Total amount of childcare</i>		
Unpaid childcare	-0.004	0.003
Paid childcare	-0.006	0.003 **
<i>Difficulties with childcare</i>		
With cost	-0.021	0.014
With short notice	-0.013	0.013
<i>Control variables</i>		
Number of children in household		
Number of preschool children	0.083	0.092
Number of at school children	0.042	0.072
Age	0.001	0.018
Education (Ref.: primary)		
Secondary	0.065	0.41
Tertiary	-0.683	0.69
Household equivalent income (Ref.: first quartile)		
Household eq. income – 2 <sup>nd</sup> quartile	-0.233	0.101 **
Household eq. income – 3 <sup>rd</sup> quartile	-0.487	0.119 ***
Household eq. Income – 4 <sup>th</sup> quartile	-0.617	0.145 ***
Cohabiting (Ref.: married)	0.073	0.26
Living in rural area (Ref: urban)	0.373	0.277
Childcare allowances	-0.099	0.092
Working part time (Ref.: full time)	0.654	0.051 ***
Hours paid work (partner)	-0.001	0.001
Hours of childcare	0.004	0.002 *
Hours of childcare (partner)	0.001	0.004
Hours of housework	0.009	0.004 ***
Hours of housework (partner)	-0.018	0.007 ***
Hours of household errands	0.009	0.008
Hours of household errands (partner)	0.001	0.011
Constant	8.151	0.777 ***

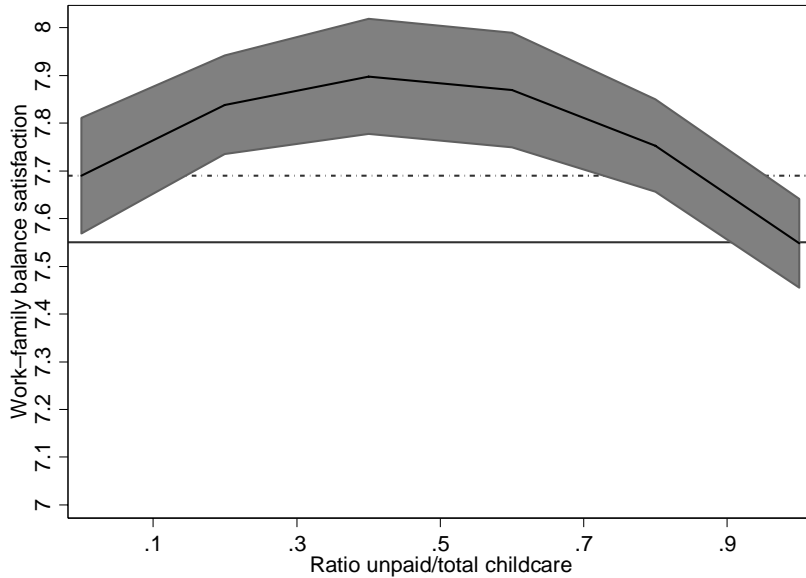
**Table S-4: Random effects model predicting satisfaction with the work–family balance as function of the proportion of unpaid childcare over total outsourced childcare and controlling for the total amounts of paid and unpaid childcare**

Independent variables	Coef.	Std. Err.
<i>Ratio n. hours unpaid childcare over total</i>		
Ratio unpaid/tot (linear)	0.960	0.412 ***
Ratio unpaid/total (quadratic)	-1.101	0.378 ***
<i>Total amount of childcare</i>		
Unpaid childcare	-0.005	0.003 *
Paid childcare	-0.007	0.003 ***
<i>Control variables</i>		
Number of children in the household		
Number of preschool children	0.131	0.072 *
Number of at school children	0.047	0.047
Age	0.01	0.007
Education (Ref.: primary)		
Secondary	-0.069	0.125
Tertiary	-0.325	0.132 ***
Household equivalent income (Ref.: first quartile)		
Household eq. income – 2 <sup>nd</sup> quartile	-0.145	0.84
Household eq. income – 3 <sup>rd</sup> quartile	-0.306	0.091 ***
Household eq. Income –4 <sup>th</sup> quartile	-0.389	0.104 ***
Cohabiting (Ref.: married)	0.091	0.121
Living in a rural area (Ref.: urban)	-0.022	0.09
Childcare allowances	-0.084	0.071
Working part time (Ref.: full time)	0.941	0.091 ***
Hours paid work (partner)	-0.001	0.001
Hours of childcare	0.007	0.001 ***
Hours of childcare (partner)	0.006	0.003 **
Hours of housework	0.005	0.003
Hours of housework (partner)	-0.24	0.005 ***
Hours of household errands	0.009	0.006
Hours of household errands (partner)	-0.003	0.008
Constant	7.521	0.346 ***

**Table S-5: Random effects model predicting satisfaction with the work–family balance as function of the proportion of unpaid childcare over total outsourced childcare, controlling for the perceived difficulties with childcare and the total amounts of paid and unpaid childcare**

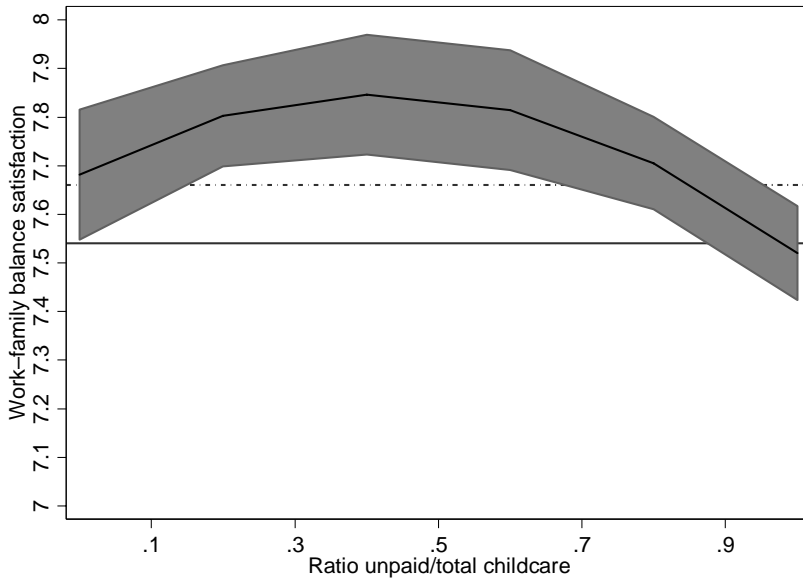
Independent variables	Coef.	Std. Err.
<i>Ratio hours unpaid childcare over total</i>		
Ratio unpaid/tot (linear)	0.995	0.412 ***
Ratio unpaid/total (quadratic)	-1.248	0.379 ***
<i>Total amount of childcare</i>		
Unpaid childcare	-0.004	0.003
Paid childcare	-0.006	0.002 ***
<i>Difficulties with childcare</i>		
With cost	-0.029	0.011 ***
With short notice	-0.041	0.011 ***
<i>Control variables</i>		
Number of children in household		
Number of preschool children	0.13	0.071
Number of at school children	0.047	0.047
Age	0.009	0.007
Education (Ref.: primary)		
Secondary	-0.057	0.123
Tertiary	-0.281	0.131 **
Household equivalent income (Ref.: first quartile)		
Household eq. income – 2 <sup>nd</sup> quartile	-0.14	0.084
Household eq. income – 3 <sup>rd</sup> quartile	-0.299	0.091 ***
Household eq. Income – 4 <sup>th</sup> quartile	-0.399	0.104 ***
Cohabiting (Ref.: married)	0.09	0.12
Living in rural area (Ref: urban)	-0.013	0.089
Childcare allowances	-0.086	0.071
Working part time (Ref.: full time)	0.939	0.089 ***
Hours paid work (partner)	-0.001	0.001
Hours of childcare	0.008	0.001 ***
Hours of childcare (partner)	0.006	0.003 **
Hours of housework	0.005	0.003
Hours of housework (partner)	-0.023	0.005 ***
Hours of household errands	0.01	0.006
Hours of household errands (partner)	-0.001	0.008
Constant	7.784	0.348 ***

**Figure S-1: Predicted level of satisfaction with the work–family balance (fixed effects models) by the proportion of unpaid childcare over the total outsourced childcare and controlling for the overall amounts of unpaid and paid childcare, with 95% confidence band**



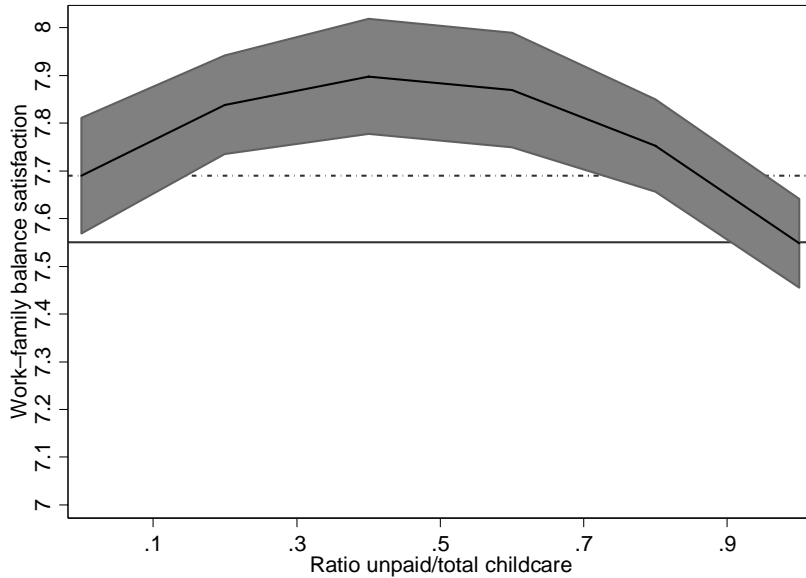
Notes: Predictions are from a fixed effect model where the main explanatory variables are the ratio between unpaid childcare over the total outsourced childcare and its square. All control variables are included. The dashed horizontal line indicates the level of predicted satisfaction with work–family balance when only paid childcare is used; the solid horizontal line indicates the level of predicted satisfaction with work–family balance when only unpaid childcare is used.

**Figure S-2: Predicted level of satisfaction with the work–family balance (fixed effects models) by the proportion of unpaid childcare over the total outsourced childcare, controlling for the difficulties related to paid childcare and the total amounts of paid and unpaid childcare, with 95% confidence band**



Notes: Predictions are from a random effect model where the main explanatory variables are the ratio between unpaid childcare over the total outsourced childcare, its square and two items measuring perceived difficulties with childcare. All control variables are included. The dashed horizontal line is from Figure S-1, indicating the level of predicted satisfaction with work–family balance when only paid childcare is used, without controlling for the difficulties in using paid childcare; the solid horizontal line is from Figure S-1, indicating the level of predicted satisfaction with work–family balance when only unpaid childcare is used, without controlling for the difficulties in using paid childcare.

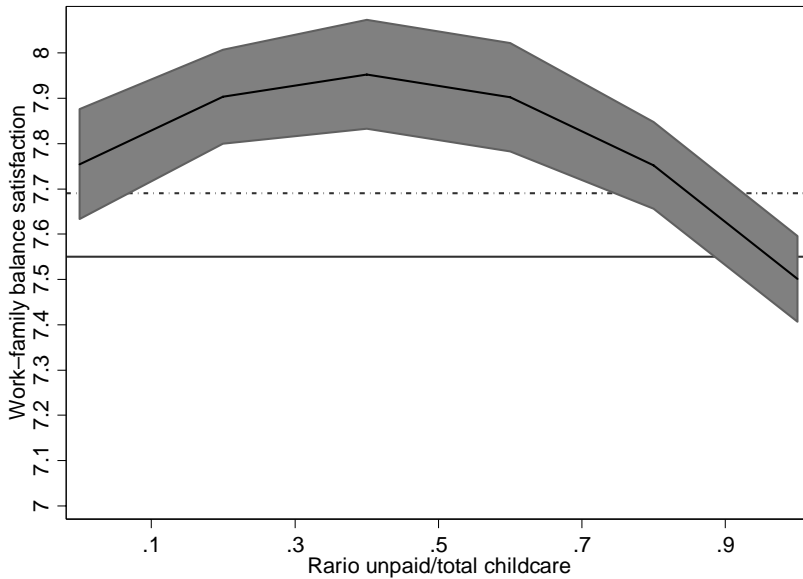
**Figure S-3: Predicted level of satisfaction with the work–family balance (random effects models) by the proportion of unpaid childcare over the total outsourced childcare and controlling for the overall amounts of unpaid and paid childcare, with 95% confidence band**



Notes: Predictions are from a random effect model where the main explanatory variables are the ratio between unpaid childcare over the total outsourced childcare and its square. All control variables are included. The dashed horizontal line indicates the level of predicted satisfaction with work–family balance when only paid childcare is used; the solid horizontal line indicates the level of predicted satisfaction with work–family balance when only unpaid childcare is used.



**Figure S-4: Predicted level of satisfaction with the work–family balance (random effects models) by the proportion of unpaid childcare over the total outsourced childcare, controlling for the difficulties related to paid childcare and the total amounts of paid and unpaid childcare, with 95% confidence band**



Notes: Predictions are from a random effect model where the main explanatory variables are the ratio between unpaid childcare over the total outsourced childcare, its square and two items measuring perceived difficulties with childcare. All control variables are included. The dashed horizontal line is from Figure S-3, indicating the level of predicted satisfaction with work–family balance when only paid childcare is used, without controlling for the difficulties in using paid childcare; the solid horizontal line is from Figure S-3, indicating the level of predicted satisfaction with work–family balance when only unpaid childcare is used, without controlling for the difficulties in using paid childcare.

