Childcare restrictions and gender gap in labor outcomes

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Abstract

Purpose – This study aims to contribute to the literature by examining the gender gap effects of childcare restrictions. Specifically, not using professional childcare services due to issues like access, quality or costs. Additionally, we explore the long-run consequences of extended work interruptions for childcare.

Design/methodology/approach – Using a specialized cross-sectional module from the 2018 Spanish Labor Force Survey, we estimated a set of linear regression models to capture the short and long run effects of childcare restrictions in labor market outcomes.

Findings – We identify substantial gender gaps in labor force, employment, full-time employment and hours worked among parents facing childcare constraints. In contrast, parents without such restrictions experience much lower gender gaps. The long-run analysis reveals that mainly career breaks lasting 2 years or more significantly diminish the labor supply and employment rates of mothers.

Originality/value – Our study goes beyond examining the effects of childcare restrictions on mothers' labor market behavior and explicitly studies the gender disparities related to these restrictions. Moreover, our database includes information on work flexibility for childcare, allowing us to explore whether such flexibility can help mitigate these gender gaps. Additionally, we assess the long-term effects of work interruptions due to childcare responsibilities on women's labor outcomes.

Keywords Childcare restrictions, Gender gap, Labor outcomes, Working flexibility, Work interruptions

Paper type Research paper

1. Introduction

Although there has been important progress, gender disparities in the labor market persist across countries. According to the OECD database, the average gender participation and employment gaps remain substantial at approximately 14 percentage points (pp) [1]. Furthermore, the unadjusted gender wage gap stands at roughly 12%, exhibiting considerable disparities that vary significantly from one country to another.

JEL classification – C21, J13, J16, J21

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The presence of children is a key driver of gender inequality within the labor market (see, for example, Cortes and Pan (2023) and Bertrand (2020). There is growing empirical evidence suggesting that while parenthood has minimal repercussions on fathers' labor market outcomes, mothers tend to experience a notable reduction in labor force participation and a decrease in both employment as well as in the number of hours worked. Additionally, they face a decline in their hourly wages and overall earnings. [2] Importantly, these costs extend over the course of women's lives rather than being short-term, regardless of variations in family policies (Kleven *et al.*, 2023).

The arrival of children requires a significant allocation of time to childcare responsibilities, resulting in interruptions and reductions in working hours, particularly for mothers. According to data from the Eurostat Database, 42.6% of mothers and 4.2% of fathers in the European Union have experienced work interruptions to take care of their children. Among these parents, 37.6% of mothers and 7.7% of fathers have had their careers interrupted for more than 2 years while caring for their children, highlighting the potential impact on mothers' work participation [3].

Work interruptions caused by childcare responsibilities, however, can be mitigated with the presence of working flexibility, support from family members, or the use of professional childcare services. Thus, childcare costs can be critical in mothers' working decisions. As Casarico and Lattanzio (2023) mention, if the household has enough resources to afford childcare services, both parents can work and accumulate experience, granting the household a higher lifetime income. However, in situations where borrowing against future earnings is not an option, certain households with children may find themselves unable to cover the expenses associated with childcare. High childcare costs often lead to a liquidity constraint, compelling one of the parents, usually the mother, to cease working. According to data from the Eurostat Database, the percentage of mothers who do not work due to the high cost of childcare services varies across European countries, ranging from 0.6% in Czechia to 7.5% in Romania [4].

In this paper, we initially examine how the presence of restrictions on the use of childcare services affects gender disparities in labor force participation, employment, full-time employment, and hours worked among parents with children below 15 years of age. In our context, childcare restrictions are defined as the choice not to utilize professional childcare services due to factors such as the absence of access, lack of quality, or associated costs.

Our analysis extends beyond merely comparing gender gaps between these parents and those who employ professional childcare services. We also look at gender gaps observed among parents receiving support from family members or who choose to provide childcare themselves. Furthermore, we study how the flexibility of working hours for childcare influences labor market outcomes, thus impacting gender disparities. Finally, we explore the long-run labor market consequences of work interruptions related to childcare responsibilities. To the best of our knowledge, our study represents a first effort to systematically analyze the gender gap effects of childcare restrictions. This contrasts with the prevailing focus in existing empirical literature on childcare restrictions, which predominantly concentrates on mothers' behavior without explicitly examining the gender disparities associated with the presence of these restrictions (Morrissey. 2017).

Our analysis is based on cross-sectional data extracted from an ad-hoc module of the 2018 Spanish Labor Force Survey. This module is specifically designed to capture information related to the balance between work and family life. Notably, it includes variables detailing the utilization of various childcare options, encompassing professional services, assistance from relatives, and parents personally providing childcare. The module also looks at the primary reasons for not utilizing childcare services, considering factors

such as accessibility, quality, and financial cost. Additionally, it incorporates information on working time flexibility for care giving responsibilities, and the duration of career breaks due to childcare. This comprehensive database serves as a valuable resource for understanding the role of childcare services in shaping gender disparities in labor markets.

The estimated linear regression models reveal the presence of pronounced gender gaps in labor force participation (31.4 pp), employment (38.6 pp), full-time employment share (39.6 pp) and hours worked (30.0%) among parents who face constraints in using childcare services. In contrast, much lower gender gaps are observed in parents using childcare services, with figures of 4.5 pp, 6.9 pp, 18.8 pp and 16.4%, respectively. This underscores the significant impact of accessibility and affordability of childcare services in exacerbating gender disparities in labor-related outcomes.

Importantly, the presence of childcare restrictions amplifies gender disparities compared to a scenario where parents opt to handle childcare by their own, rather than utilizing childcare services. In this alternative scenario, both mothers and fathers decrease their labor force participation and working hours, indicating a more equitable distribution of childcare responsibilities within the household.

Furthermore, our analysis indicates that working time flexibility for childcare leads to a reduction in the gender gap in hours worked among parents facing restrictions in the use of childcare services. Notably, the gender gap in hours worked increases from 28.3% to 31.1% from a scenario of working flexibly to one without working flexibility. This suggests that working time flexibility contributes to the work-life balance, alleviating the gender disparity in the number of hours devoted to work.

In our final analysis, we delve into the long-term repercussions of work interruptions arising from childcare responsibilities, specifically focusing on women who ceased working for at least one month when their children were below 15 years old, and now only have children above 15 years old. Our study reveals that career breaks lasting 2 years or more significantly diminish the labor supply and employment rates of these women. The estimations demonstrate a notable decline in the labor force rate from 86.8% to 73.1% and in the employment rate from 80.2% to 61.2% as the length of the career interruption increases from less than 6 months to more than 2 years. In terms of hours worked, our analysis indicates a notable impact, with hours falling from 3,294 to 3,055 per year, representing a 7.2% decrease. In turn, the full-time employment share falls from 85.6% for interruptions below 6 months to 74.4% for interruptions above 2 years. This underscores the substantial and enduring impact of extended career breaks for childcare on women's labor outcomes.

Section 2 of the paper explores the related literature on childcare restrictions and gender gaps in labor outcomes. Section 3 presents the institutional setting in Spain while section 4 outlines the data and some descriptive statistics. Section 5 presents the empirical methodology while section 6 shows the estimated results. Finally, Section 7 concludes.

2. Related literature

There is an extensive literature analyzing the impact of childcare restrictions on labor markets. From a theoretical standpoint, Blau and Robins (1988) study the effects of childcare costs in a one-period family labor supply model in which there are three potential sources of childcare: the mother, the potential informal provider, and the market. In their model, the labor supply decisions of the mother and other household members are modeled jointly with the decision to purchase market childcare. The model shows that both the decision to become employed and the decision to purchase market childcare are sensitive to childcare costs [5].

Contemporary theoretical literature extends its focus to the employer's role in the labor market, investigating how childcare restrictions contribute to gender inequality in labor market outcomes. For instance, Bjerk and Han (2007) develops a model wherein firms face adjustment costs when their workers resign. The model incorporates the idea that males and females with similar skills form households with distinct home care requirements. Each household must determine whether both members should remain in the workforce and acquire necessary home care externally or if one member should exit the labor market to internally provide the required care. Given that women are more likely to leave the labor market, firms transfer adjustment costs to them by offering lower wages compared to equally skilled males. Therefore, Bjerk and Han (2007) shows that a key source of gender wage and labor market participation inequality is the cost of purchasing home care services from the market.

Casarico and Lattanzio (2023) extend the Bjerk and Han (2007) model by introducing a second period wherein both men and women work, and there are no childcare-related costs. Notably, childcare expenses must be covered during the initial working period, and without the option to borrow from future earnings, certain households may find themselves unable to afford these costs. Consequently, constrained by financial limitations, women exit the labor market to attend to their childcare responsibilities. Anticipating women's periods of leave, firms penalize women by offering lower wages. Thus, the presence of liquidity constraints related to the presence of childcare costs increases gender wage and participation gaps, compared to a situation in which all households interested in buying childcare can afford to do so. Their model also delves into the enduring impacts of interruptions in employment caused by childcare responsibilities. In the second period, wages are contingent on accumulated work experience, a factor that tends to be lower for mothers who have taken breaks in their careers to care for their children. Consequently, facilitating the return to work for mothers in financially constrained households not only diminishes gender gaps in the labor market immediately after having children but also yields long-term benefits. This is achieved by enhancing their work experience and, consequently, elevating their wages over time.

Empirical evidence aligns with the implications outlined in the preceding theoretical models. Akgunduz and Plantenga (2018) offer a comprehensive survey of 44 estimates concerning the elasticity of labor force participation in relation to childcare costs, drawing from 36 English-language articles published between 1988 and 2010. Notably, most of these estimates (37 out of 44) indicate negative elasticities, signifying a consistent trend where increased childcare costs are associated with decreased labor force participation. Only in seven estimations did the relationship appear nonsignificant. The data sources employed in this body of literature predominantly consist of surveys that incorporate information regarding childcare expenditures.

Morrissey (2017) and Boca (2015) also review and compare empirical results regarding the impact of costs and availability of childcare, examining variations across different groups. The findings indicate that reductions in childcare costs and increases in childcare availability increase mothers' labor force participation, although the effect sizes vary widely. Moreover, Boca (2015) suggests that the impact of childcare availability and costs is more pronounced among those mothers from more disadvantaged backgrounds. In turn, childcare programs targeting lower-income and less educated families have greater effectiveness compared to programs which benefit households with higher incomes.

In contrast to our empirical analysis, the existing studies predominantly focus on mothers' behavior without explicitly examining the gender gap effects of childcare costs. As Morrissey (2017) mention, there is a lack of research on the effects of childcare costs and

availability on fathers' employment responses, which remains an important issue given fathers' increased involvement in the lives of young children. Consequently, to the best of our knowledge, our study represents a pioneering effort to systematically analyze the repercussions of childcare restrictions on the gender disparities in labor force participation, employment and hours worked.

One exception is Sikiríc (2021) who use panel data analysis to examine whether the cross-country differences in gender employment gaps in the EU–28 are associated with differences in the use of formal childcare arrangements for children under the age of 3. They show that the use of childcare reduces employment gender inequality in the labor market. They also show that part-time work arrangements help women combine parenthood and employment while long leaves have a negative impact on women's employment.

Talamas Marcos (2023) also evaluates the impact of childcare availability on the employment probability gap among parents. He utilizes the timing of grandmothers' deaths – the primary childcare providers in Mexico – as a source of identifying variation. The results reveal that, following the death of grandmothers and the consequent reduction in childcare availability, mothers experience a 12-percentage-point decline (27%) in their employment rate, whereas fathers' employment rates remain unaffected. This negative effect on mothers' employment is somewhat mitigated in regions where public daycare is more accessible or private daycare, and schools are more affordable.

In contrast to Sikiríc (2021) and Talamas Marcos (2023), our study goes beyond examining the effects of childcare restrictions solely on the employment gender gap. We extend our analysis to explore gender disparities in the overall labor force, full-time employment rate and hours worked. Moreover, it is worth noting that our database incorporates information on flexible working patterns adopted to allow for childcare. This inclusion allows us to explore whether such flexibility can serve as a mitigating factor in addressing the challenges posed by excessively high childcare expenses in certain households. Finally, we explore the long-run consequences of work interruptions related to childcare responsibilities on gender gaps.

3. Institutional setting

In the last three decades, Spain has experienced a significant increase in the participation of women in the labor market. However, their participation remains low compared to the European Union average. Additionally, part-time employment, which is typical for some mothers seeking to balance work and childcare, is also lower compared to other European countries.

Regarding formal childcare availability, Spain starts compulsory education at age 6, with early childhood education offered from ages 3 to 6 in both public and private schools. Prior to this, preschool education for ages 0–3 is available, but not entirely free.

As highlighted by Borra (2010) and Cebrián *et al.* (2019), Spain exhibits a remarkably high enrollment rate of children starting education from the age of 3, standing at approximately 90%. However, this figure falls to 30% for children aged 0 to 3. This disparity is not solely attributable to center availability but also hinges on quality concerns. Many of these facilities deal with high student-to-teacher ratios, compounded by a large financial burden on families. Borra (2010) illustrates this burden by revealing that enrolling a 2-year-old child consumes a staggering 30% of the average gross salary, a notably larger proportion compared to other nations.

It is worth noting that informal care also plays a very important role in Spain. In this sense, it is important to mention the characteristics of maternity/paternity leave, as well as the care provided by other relatives (grandparents, relatives), as this plays a key role in a

society which possesses very strong and deep-rooted family ties (Borra, 2010, Borra and Palma, 2009).

Along similar lines, Gorjón and Lizarraga (2024) examine the role and development of paternity leave and its historical trajectory. In Spain, maternity leave has been set at 16 weeks, fully paid by social security since 1989, entitling recipients to 100% of their gross salary. Presently (as of January 2021), paternity leave matches the duration of maternity leave, a departure from the previous standard of 5 weeks in 2018. Nonetheless, as evidenced by Borra (2010) and Cebrián *et al.* (2019), the uptake of paternity leave by fathers remains limited.

All of these mentioned characteristics indicate that Spain, like other Southern European nations, adheres to a more traditional family model, emphasizing the preservation of familial structures. Public policies play a pivotal role in altering this paradigm, focusing on enhancing accessibility to formal free childcare, ensuring its quality, and addressing issues pertaining to paternity leave.

4. Data

In this section, we present the data used, the sample selection applied in each exercise, and some descriptive statistics for the main variables.

The empirical analysis conducted here exploits a unique data set containing information on labor market participation and childcare restrictions in Spain. Specifically, we use a special module of the 2018 Labor Force Survey (LFS) that contains information relating to work life and family life. The module is part of the Community Workforce Survey, a survey conducted in a coordinated manner within the European Union and included in the LFS by Spain. In the case of Spain, during the second quarter of each year, the LFS performs a set of inquiries addressing specific themes relevant to the labor market. In 2018, the focal point was the reconciliation of work and family life, with questions targeted at parents aged between 18 and 64 years.

To explore this topic, we conduct both short-term and long-term analyses. Firstly, for the short term, we explore how different childcare options when having a child under 15 years old affect the gender gap in various labor market outcomes. For this exercise, we select only fathers and mothers with their own children or a partner's children under 15 years of age living in the household, or their own children or a partner's children under 15 years of age outside the household whom they care for regularly. Furthermore, we excluded from the sample those who regularly care for children with disabilities or older adults, and we considered only those adults aged 25 to 60. Additionally, we exclude parents who provide "do not know" responses to the childcare-related questions and those who indicate that childcare services are unnecessary due to their children being sufficiently mature to care for themselves. We have a total of 12,275 individuals available for conducting the short-run analysis.

Concerning childcare choices, our analysis incorporates four distinct and mutually exclusive options. The primary category serves as our reference point and involves the hiring of professional services. The variable is called *childcare services* (see Table 1). The subsequent options encompass:

- abstaining from childcare hiring due to economic constraints or unavailability attributed to high costs (childcare restrictions);
- forgoing childcare engagement because family members attend to the children (family support); and

Variable	Units	Definition	Mean
Short-run model (12,275 parents)			
Household size	individuals	Number of individuals in the household	3.82
Household children	individuals	Number of children below 15 years old in the household	1.75
Children under 3	0 / 1	Having children between 0 and 3 years old	0.310
Couple status		Three categories for the couple	
Non couple	0 / 1	Living without a couple	0.107
Non-working couple	0 / 1	Living with a nonworking couple	0.182
Working couple	0 / 1	Living with a working couple	0.711
Labor force rate	0 / 1	Participating in the labor force	0.898
Work	0 / 1	Being employed	0.799
Full-time	0 / 1	Being a full-time worker	0.857
Hours worked	0 / 1	Annual hours worked	3,665.3
Women	0 / 1	If the individual is a mother	0.5247
Age	Years	Age of the individual	41.06
Childcare categories		Four categories for childcare	
Childcare restrictions	0 / 1	Not using childcare services because they are too expensive or inaccessible	0.0908
Parents childcare	0 / 1	Parents do not need childcare services because they do it	0.484
Family support	0 / 1	Parents do not need childcare services because relatives do it	0.213
Childcare services	0 / 1	Parents use professional childcare services	0.212
Spanish	0 / 1	Having spanish citizenship	0.908
Education		Level of education	
Primary	0 / 1	Primary education	0.049
Secondary	0 / 1	Secondary education	0.485
Tertiary	0 / 1	Tertiary education	0.407
Post tertiary	0 / 1	Post tertiary education	0.0571
Working flexibility	0 / 1	Possibility to adjust the working schedule due to childcare	0.304
Economic activity	0 / 1	Working in agriculture, industry of services	
Agriculture	0 / 1	Agricultural sector	0.041
Manufacture	0 / 1	Manufacturing sector	0.146
Service	0 / 1	Construction, transport, and services	0.813
Occupation	0 / 1	Occupational categories	
Director	0 / 1	Directors and managers	0.059
Scientific	0 / 1	Scientific and intellectual professionals	0.223
Technician	0 / 1	Technicians and support professionals	0.127
Office	0 / 1	Office employees	0.225
Sale	0 / 1	Service and sales workers	0.023
Agricultural	0 / 1	Agricultural and fishing workers	0.133
Craftsmen	0 / 1	Craftsmen and workers in manufacturing and construction industries	0.153
Operator	0 / 1	Machine operators and assemblers	0.049
Army	0 / 1	Army occupations	0.008
Professional situation	0 / 1	Professional situation	
Employer	0 / 1	Entrepreneur with employees	0.059
Independent	0 / 1	Independent workers or entrepreneurs without employees	0.101
Public	0 / 1	Public sector employee	0.186
Private	0 / 1	Private sector employee	0.652
Another	0 / 1	Another situation	0.002
Long-run model (2,103 female parents)			
Labor force rate	0 / 1	Participating in the labor force	0.795
Work	0 / 1	Being employed	0.709

(*continued*)

Table 1.
Long and short run models' variables

Variable	Units	Definition	Mean
Full-time	0 / 1	Being a full-time worker	0.825
Hours worked	0 / 1	Annual hours worked	3,243.3
Age	Years	Age of the individual	52.6
Spanish	0 / 1	Having spanish citizenship	0.975
Education		Level of education	
Primary	0 / 1	Primary education	0.048
Secondary	0 / 1	Secondary education	0.543
Tertiary	0 / 1	Tertiary education	0.361
Post tertiary	0 / 1	Post tertiary education	0.046
Working interruption		Total time of working interruption due to childcare	
less 6 months	0 / 1	Less than 6 months	0.497
6 months to 1 year	0 / 1	More than 6 months and less than 1 year	0.178
1 to 2 years	0 / 1	More than 1 year and less than 2 years	0.082
More than 2 years	0 / 1	More than 2 years	0.243
Household size	individuals	Number of individuals in the household	3.50
Couple status		Three categories for the couple	
Noncouple	0 / 1	Living without a couple	0.275
Nonworking couple	0 / 1	Living with a nonworking couple	0.182
Working couple	0 / 1	Living with a working couple	0.542
Economic activity	0 / 1	Working in agriculture, industry of services	
Agriculture	0 / 1	Agricultural sector	0.021
Manufacture	0 / 1	Manufacturing sector	0.072
Service	0 / 1	Construction, transport, and services	0.906
Occupation	0 / 1	Occupational categories	
Director	0 / 1	Directors and managers	0.032
Scientific	0 / 1	Scientific and intellectual professionals	0.254
Technician	0 / 1	Technicians and support professionals	0.199
Office	0 / 1	Office employees	0.281
Sale	0 / 1	Service and sales workers	0.007
Agricultural	0 / 1	Agricultural and fishing workers	0.026
Craftsmen	0 / 1	Craftsmen and workers in manufacturing and construction industries	0.176
Operator	0 / 1	Machine operators and assemblers	0.021
Army	0 / 1	Army occupations	0.000
Professional situation	0 / 1	Professional situation	
Employer	0 / 1	Entrepreneur with employees	0.037
Independent	0 / 1	Independent workers or entrepreneurs without employees	0.069
Public	0 / 1	Public sector employee	0.376
Private	0 / 1	Private sector employee	0.508
Another	0 / 1	Another situation	0.007

Source: Authors' own creation using data from the 2018 Special Spanish Labor Force Module: Balance between work and family life

Table 1.

- refraining from childcare services as children are under the care of their fathers or mothers (parents childcare).

A schematic explanation of the variables of childcare is provided in Table A1 of the Appendix. It is important to emphasize that the Survey does not consider compulsory education when referring to various types of childcare. Thus, the question "Do you use childcare services" from the LFS survey refers to the regular utilization of professional

childcare services that are unrelated to compulsory education. In essence, this question focuses on the hours outside of the regular school day. It is important to highlight that working hours in Spain tend to be quite extensive, and, in many instances, parents depend on these childcare services to enable them to fulfill their work commitments.

For the long-term analysis, we explore the impact of labor market interruptions due to motherhood on labor force, employment, full-time share and hours worked. This variable represents the cumulative duration of all work interruptions undertaken by parents with their own children or those of their partner of any age, regardless of whether they reside in the household. They occur among individuals who are currently employed or have previously worked since completing their studies, and who have stop working at some point to provide care for their children before they reached the age of 15. Work interruptions include maternity leave, unpaid leave and leaving the job, and they can be transitory or permanent.

Our focus is specifically on mothers above 34 years old who only have children above 15 years old. We have a total of 2,103 women available to carry out the long-run analysis. Although work interruptions on males can also affect their labor market situation (Cebrián and Moreno, 2015), we do not include them due to their limited representation in the data set, totaling only 55 individuals.

Table 1 presents the average values of the variables considered for both the short and long-run scenarios, most of which are binary (taking values of 0 or 1). In the short-term analysis, our primary explanatory variable called *childcare restrictions* reveals that 9.1% of parents refrain from utilizing childcare services due to perceived cost or inaccessibility. Among them, 73.9% mention that childcare services are too expensive, 18.2% say that they are not available, and the rest indicate other reasons such as the low quality of the service or that the opening hours do not meet the household's needs.

Furthermore, the benchmark childcare category comprises parents using *childcare services*, encompassing 21.2% of parents. In turn, 48.4% of the parents say that they do not use childcare services because he/she organizes childcare either alone or with their partner (*parents childcare*), while 21.3% organize childcare with the help of grandparents, relatives, or friends (*family support*).

Regarding the variables related to household status, Table 1 shows an average household size of 3.82 members, with 1.75 children below 15 years old per household (of which 31.0% are below 3 years old). In turn, 10.7% of households have parents living alone, while 71.1% have working couples and 18.2% have couples who do not work.

Concerning labor market outcomes, parents in the short-run scenario exhibit an average labor force participation rate of 89.8%, an employment rate of 79.9%, a full-time employment share of 85.7%, and average annual hours worked of 3,665. Also notice that 30.4% of parents declare that they have work flexibility to take care of their children. Specifically, they agree that, in general, it is possible to modify the start or end of the workday in the job to better accommodate their responsibilities for caring for children.

In the context of our long-term analysis, our key regressor is referred to as working interruptions, which shows the overall duration of work interruptions attributable to childcare responsibilities. Interestingly, 24.3% of mothers considered in the study mention that they interrupted their working career for 2 years or more. In this long-run scenario, labor force, employment, full-time share, and annual hours worked stand at 79.5%, 70.9%, 82.5% and 3,243 h, respectively.

An initial insight into the significance of childcare restrictions explaining gender disparities in labor market outcomes is depicted in Figure 1. The figure illustrates the differences in labor market outcomes between fathers and mothers across the four childcare

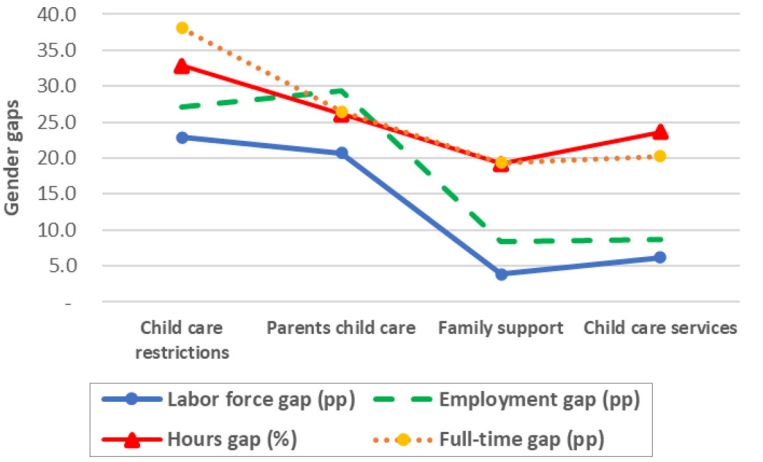


Figure 1.
Unadjusted gender gaps in labor market variables

Notes: Gender gaps refer to the difference between males and females. These gaps are calculated using the labor outcomes in Table A2
Source: Authors' own creation

categories considered. Notably, the most substantial gender gaps are observed among parents facing childcare restrictions, with disparities in labor force, employment, full-time and hours amounting to 22.9 pp, 27.1 pp, 38.1 pp and 32.8%, respectively. In contrast, parents utilizing professional childcare services exhibit considerably lower gender gaps, measuring 6.2 pp, 8.7 pp, 20.2 pp and 23.6%, respectively.

5. Methodology

In this section, we present our empirical strategy. As previously explained, our first step involves analyzing the short-term effects of different childcare options on labor market outcomes. To accomplish this, we implement the following linear regression model:

$$Y_i = \gamma_0 + \beta_1 Women_i + \beta_2 ChildcareOption_i + \beta_3 Women_i * ChildcareOption_i + \delta X_i + \epsilon_i \quad (1)$$

where Y_i represents various labor market indicators for each parent i. Specifically, we utilize four different labor market indicators: participation in the labor force, employment status, fulltime worker and the number of hours worked by those employed. The first two are dichotomous variables, taking the value 1 if the parent belongs to the labor force (either working or being unemployed) in the first case and if the parent is employed in the second case. The full-time variable is also a dichotomous variable taking the value 1 if the parent has a full-time job and 0 if she has a part-time one. The last indicator represents the number of hours an individual works per year.

$Women_i$ is a binary variable with a value of 1 if the parent is female. The variable $ChildcareOption_i$ is a categorical variable that encompasses the four different childcare options: *childcare restrictions, parents' childcare, family support* and *childcare services*. The reference category for comparison is the option of contracting *childcare services*.

Our parameters of interest are β_2 and β_3 which explain how each childcare option affects the gender gap in different labor market indicators. More precisely, β_2 captures the labor market effect of each childcare option on males while $\beta_2 + \beta_3$ measures the effect on women.

On the other hand, X_i represents the control variables we use, including *age*, *age squared*, *nationality* (a binary variable with a value of 1 for Spanish individuals), *education* (a categorical variable with the following four categories: *primary*, *secondary*, *tertiary* and *post tertiary* education), and autonomous community (a categorical variable representing different regions). We also control for a set of variables related to the household status, including the *household size*, the *number of children below 15 years old*, a dummy if the parent has *children below 3 years old,* as well as their interaction with the *women* variable. We also include the *couple status*, which is a categorical variable with the following three options: *noncouple*, *working couple* and *nonworking couple*. This categorical variable also interacts with *women*. Categorical variables with 3 economics sectors (*agriculture, industry, and services*), 7 professional situations, and with 9 CNO-2011 one-digit occupations are included when analyzing hours worked and full-time vs part-time positions (see Table 1). Finally, the error term is denoted by ϵ.

We estimate linear regression models for each of the four dependent variables. As a result, we can directly interpret the coefficients as marginal effects. However, for binary dependent variables, we also estimate logit and probit models, and the results remain very similar. Additionally, besides estimating and calculating the marginal effects, we also present the gender gap for each of the childcare options to analyze when this gap increases or decreases.

For the dependent variable $Hours_i$, we introduce the variable $Flexibility_i$ to analyze the effect of having a job that allows parents to have more flexible work schedules for childcare on hours worked and the gender gap. Specifically, we estimate equation (1) but including $Flexibility_i$ as an additional explanatory variable. We interact $Flexibility_i$ with $Women_i$ to examine whether $Flexibility_i$ differentially affects men and women:

$$Hours_i = \gamma_0 + \beta_1 Women_i + \beta_2 ChildCareOption_i + \beta_3 Women_i * ChildCareOption_i + \beta_4 Flexibility_i + \beta_5 Women_i * Flexibility_i + \delta X_{it} + \epsilon_{it} \quad (2)$$

Finally, we calculate the long-term effects of labor market interruptions for women. As mentioned earlier, our sample is comprised of women whose children are above 15 years old and who have experienced work interruptions due to childbirth (including maternity and unpaid leave). We excluded from the sample women who provide regular care for disabled or ill children or family members. Specifically, we estimate the following regression model:

$$Y_i = \gamma_0 + \beta_1 Interruptions_i + \delta X_i + \epsilon_{it} \quad (3)$$

The dependent variables in this analysis are the same as those in equation (1). The variable $Interruptions_i$ represents the total duration related to childcare interruptions and is a categorical variable with four values: less than 6 months, six months to 1 year, from 1 year to 2 years, and more than 2 years. The reference category for comparison is the option of less than 6 months. Finally, the control variables X_i are also the same as in equations (1) and (2).

6. Results

In this section we first report the estimated results for the short-run model equations (1) and (2). Then, we present the long-run estimated effects of working interruptions related to childcare on labor market outcomes by using equation (3).

6.1 *Short-run effects of childcare restrictions*

Table A3 in the Appendix presents the estimated parameters of the short-run model. Then, Table 2 resumes the marginal effect of each of the childcare categories with respect to the scenario where parents are using childcare services. The first row shows that the presence of childcare restrictions stemming from expensive or inaccessible childcare services has no effect in labor force participation of men. However, for women, it decreases labor force participation by 18.4 pp.

Concerning employment, we observe a reduction of 4.9 pp in the employment rate of men, with a reduction of 24.2 pp in the employment rate of women. Likewise, childcare restrictions exhibit no statistically significant impact on the annual hours worked by men but lead to a reduction of 479.0 h worked for women. Similarly, the variable full-time has no impact on males but reduces the full-time employment share of females by 16.5 pp. As a result, childcare restrictions amplify the gender gap in both the extensive and intensive margins of the labor supply.

Table 2 further reveals, as anticipated, that when parents opt not to utilize childcare services because they handle it themselves, the gender gap sees a significant increase. To elaborate, when men undertake childcare responsibilities, their labor force participation and employment rates falls by 1.4 pp and 3.4 pp, respectively. In turn, the labor force participation and employment rates of women who perform childcare experience a decline of 17.9 pp and 26.8 pp, in each case. In terms of the intensive margin of the labor supply, the table reveals that when parents take on childcare responsibilities, it leads to a reduction of 211.7 and 367.5 h worked in males and females, respectively. A portion of the decrease in women's working hours stems from their transition to part-time positions, leading to a 7.7 percentage point decline in the share of full-time employment. Ultimately, the influence of family support on childcare does not exhibit a significant impact on labor outcomes when compared to the benchmark scenario of utilizing professional childcare services.

Concerning the incorporation of flexible working arrangements for childcare, the final row of Table 2 illustrates a reduction in gender disparities associated with working hours. To elaborate, the introduction of flexibility results in a decrease in the annual hours worked by males by 108.7 h but has no significant effect for females. This evidence indicates that the adoption of flexible working hours may contribute to achieving a healthier work-life balance. Furthermore, it serves as a mechanism to mitigate the gender disparity observed in the number of hours dedicated to work by parents.

In summary, the findings presented in Table 2 shed light on the importance of different childcare categories and their impact on labor force participation, employment, full-time jobs, and hours worked for both women and men. The coefficients related to restrictive childcare conditions, marked by cost, quality, or accessibility barriers, reveal statistically significant effects. Males facing such restrictions do not exhibit a significant difference in these labor market outcomes (except in the probability of being employed), whereas females experience a notable decrease in them all. This key result suggests that mothers are the parents who take care of the children when households face difficulties to pay childcare services, which forces fathers to maintain their employment situation in the labor market. More importantly, this scenario generates even more gender disparities with respect to a scenario where parents prefer not to utilize childcare services because they handle it themselves (second row in Table 2). In this alternative scenario named *parents childcare*, fathers as well as mothers reduce their labor force participation and hours worked, suggesting that parents are less restricted when distributing the childcare tasks in the household.

Table 2.
Marginal effects of the childcare categories

	Labor force		Employment		Hours worked		Full-time	
	Father	mother	Father	Mother	Father	Mother	Father	Mother
Childcare restrictions	−0.0014 (0.0095)	−0.1837*** (0.0190)	−0.0490*** (0.0176)	−0.2421*** (0.0214)	−24.7 (120.8)	−479.0 *** (111.7)	0.0084 (0.0119)	−0.1651*** (0.0302)
Parents childcare	−0.0140** (0.0059)	−0.1793*** (0.0111)	−0.0336*** (0.0100)	−0.2680*** (0.0134)	−211.7 *** (79.8)	−367.5*** (75.7)	−0.0026 (0.0082)	−0.0768*** (0.0187)
Family support	0.00678 (0.0058)	−0.0092 (0.0100)	0.0165* (0.0099)	−0.0145 (0.0133)	−152.4 * (87.7)	−118.5 (78.9)	0.0145* (0.0081)	0.0132 (0.0194)
Working flexibility	–	–	–	–	−108.7** (54.8)	33.4 (54.3)	–	–

Notes: We report the marginal effects of the childcare categories in the labor market variables that come from the estimated parameters in Table A3
Source: Authors' own creation

To better visualize the impact of the presence of childcare restrictions on gender gaps, we utilize the estimated parameters from Table A3 and calculate the predicted values of labor market outcomes conditional on each of the childcare categories while holding all other explanatory variables constant (see Table A4). We then compute the resulting gender gaps in labor force, employment, full-time and hours worked. As depicted in Figure 2, the existence of childcare restrictions emerges as a prominent factor, yielding the highest gender gap among the four considered childcare categories. In the presence of these restrictions, the gender gaps in labor force participation, employment rates, full-time share and hours worked stand at 31.3 pp, 38.6 pp, 39.6 pp, and 30.0%, respectively. In contrast, these gaps significantly diminish to 4.5 pp, 6.9 pp, 18.8 pp, and 16.4% when parents are using professional childcare services. This significant contrast underscores the important role of childcare services in fostering gender equality between parents.

In turn, Figure 3 illustrates that the introduction of working flexibility for childcare serves to alleviate gender disparities in hours worked. For instance, when the absence of flexibility in hours worked coexists with the presence of childcare restrictions, the gender gap in annual hours worked is substantial at 31.1%. However, this figure decreases to 28.3% when parents still have childcare restriction but have flexibility in hours worked. It is worth noting that the positive impact of working flexibility extends beyond this scenario, contributing to a reduction in the gender gap for hours worked across the other three childcare categories.

Numerous analyses examining women's labor participation in relation to household children often consider the age of the youngest child as a significant factor (Molina, 2022; Attanasio *et al.*, 2008; Cortes and Pan, 2023). This variable is linked to the stage of life the women are in, acknowledging the varying care requirements for children under 15 years old.

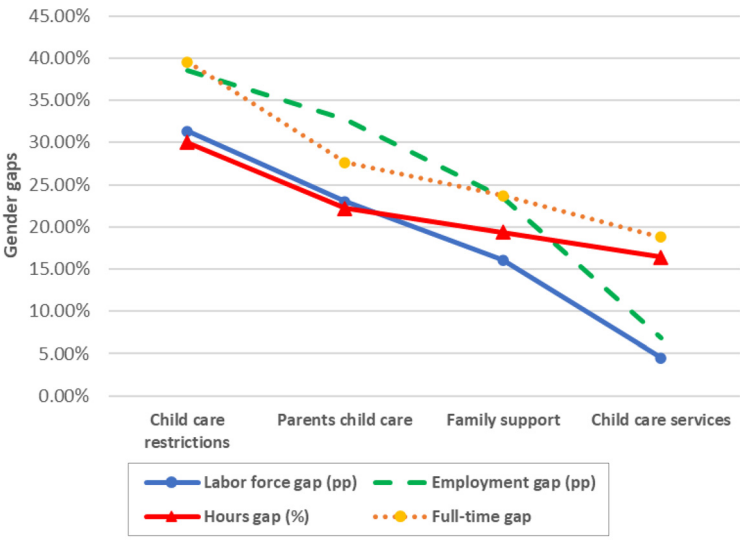
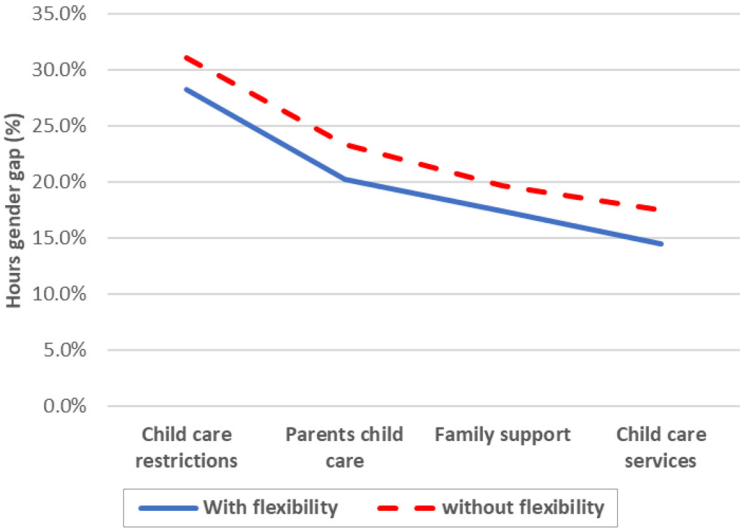


Figure 2.
Predicted gender gaps in labor market variables

Notes: Gender gaps refer to the difference between males and females. These gaps are calculated using the predicted labor market variables from Table A4
Source: Authors' own creation



Notes: Gender gaps denote the disparities between males and females, and these gaps are computed based on the predicted labor market variables presented in Table A4. Working flexibility is defined as the ability to adjust one's working schedule to accommodate childcare responsibilities
Source: Authors' own creation

Figure 3.
Predicted gender gaps in hours worked with and without working flexibility

Specifically, children under three years old, not yet in compulsory schooling, may necessitate care over more extended periods compared to older children, who spend part of the parents' working day in school.

To explore if the age of the child affects the gender gaps between parents with childcare restrictions, we first estimate equations (1) and (2) by dividing the total sample into two groups: parents with the age of the youngest child below 3 years old and those with the age of the youngest child between 3 and 15 years old. Then, we use the estimated coefficients to calculate the predicted labor outcomes.

Figure 4 shows that the child penalty when having young children is particularly important under the presence of childcare restrictions. More precisely, Figure 4(a) shows that the gender gap in the labor force falls from 36.5 pp when the youngest child in the household is below 3 years old to 27.2 pp when the youngest child is between 3 and 15 years old, respectively. In the case of hours worked, Figure 4(d) shows that the gender gaps are equal to 38.4% and 24.7% in each case. Even more interestingly, households with access to childcare services show much lower differences in the gender gaps among the groups of parents with children below and above 3 years old. These findings underscore the critical role of accessible childcare services in mitigating the gender disparities faced by parents in the labor market, particularly mothers with young children, and highlight the potential benefits of policies aimed at improving access to childcare.

Morrissey (2017) points out that it is unclear whether education moderates the effects of childcare costs on parental employment. In turn Boca (2015) finds that increases in employment in response to childcare availability are stronger among less educated women

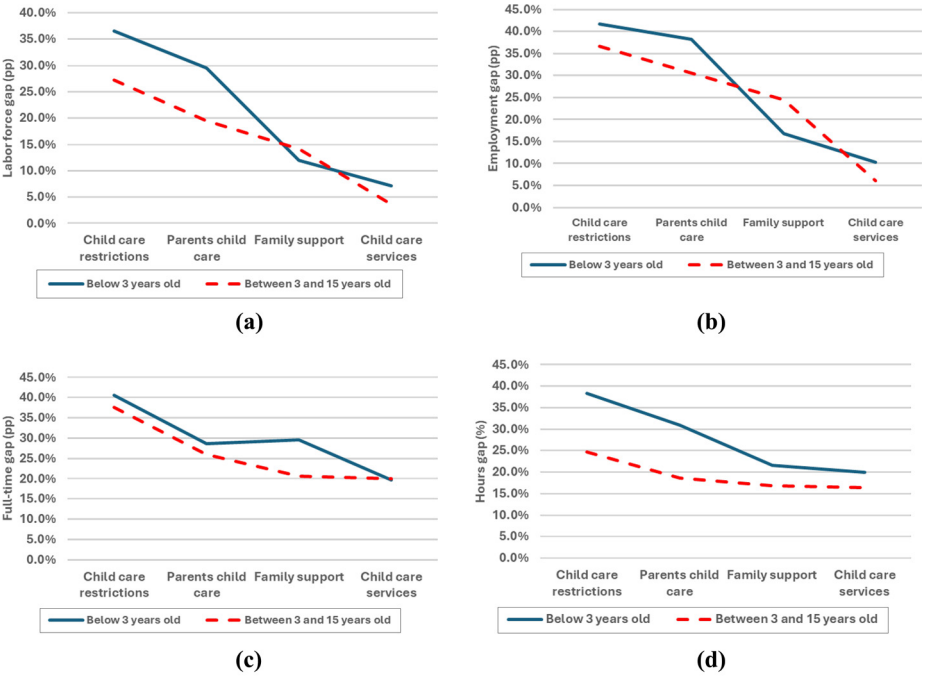


Figure 4.
Predicted gender gaps in labor market variables by children age

Notes: Gender gaps refer to the difference between fathers and mothers. These gaps are calculated using the predicted margins from the estimated equation (1) by the age of the youngest child. (a) Labor force rate gap; (b) employment gap; (c) full-time gap; (d) hours gap
Source: Authors' own creation

across 15 European countries. The special 2018 module of the Spanish Labor Survey shows that low educated parents are more willing to endure childcare restrictions. According to this survey, 16.5% of parents with primary education mention that they do not use childcare services due to the high costs. This number is much lower among parents with tertiary education (6.9%).

To explore if education mitigates the gender gaps between parents with childcare restrictions, we estimate equations (1) and (2) by dividing the total sample into two groups: parents with lower educational level (secondary or below) and those with higher educational level (tertiary or above). Then, we use the estimated coefficients to calculate the predicted labor outcomes.

Figure 5 illustrates the calculated gender gaps. Notably, education emerges as a substantial mitigating factor in the labor force gender gap, particularly among parents refraining from utilizing childcare services due to either their prohibitive costs or unavailability. As depicted in Figure 5(a), this gap significantly decreases from 35.6 pp for parents with lower educational levels to 23.7 pp for those with higher educational attainment. The influence of education is also important in addressing the gender employment gap under the presence of childcare restrictions, with a reduction in the employment gap from 41.3 pp to 33.8 pp [Figure 5(b)].

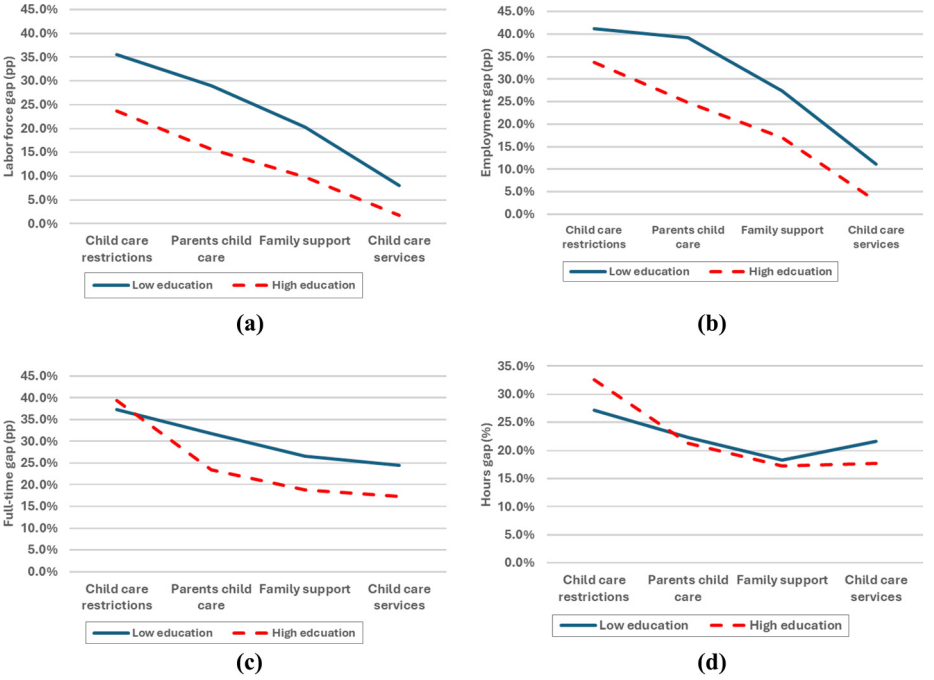


Figure 5.
Predicted gender gaps in labor market variables by level of education

Notes: Gender gaps refer to the difference between fathers and mothers. These gaps are calculated using the predicted margins from the estimated equation (1) by level of education. (a) Labor force rate gap; (b) employment gap; (c) full-time gap; (d) hours gap
Source: Authors' own creation

Our results related to the extensive margin can be explained by several factors. Firstly, the cost of inactivity is higher for individuals with higher education levels. Additionally, highly educated individuals have better job opportunities, and highly educated women are less affected by gender stereotypes. Furthermore, the relative cost of childcare in relation to their salary is lower for highly educated individuals (Cortes and Pan, 2023; Du *et al.*, 2021; Fortin, 2005; Fernandez, 2007).

Regarding the intensive margin, however, Figure 5(c) and (d), show somewhat higher gender gaps in hours worked and full-time share among high educated parents facing childcare restrictions. This result suggests that the presence of childcare constraints reduce the positive effect that education can generate in work-life balance.

These findings underscore the importance of education in addressing gender disparities in the labor outcomes. It also highlights the need for targeted policies to support both high and less educated parents in accessing to childcare services.

6.2 Long-run effects of interruptions in the labor market

In this subsection, we present the long-term effects of labor market disruptions. Figure 6 presents the predicted effects for each period of interruption. Tables 5 and 6 in the Appendix

Figure 6.
Interruptions and labor market outcomes

Notes: Labor force participation, employment, full-time share, and hours are calculated only for women with children above 15 years old
Source: Authors' own creation

show the full set of estimated coefficients of the model and the corresponding predicted labor market outcomes.

We observe distinct patterns for the labor market outcomes. When considering employment, those with interruptions of less than 6 months and those whose interruptions exceed 2 years have employment rates of 80.2% and 61.2%, respectively. In turn, the full-time share falls from 85.5% for interruptions below 6 months to 74.4% for interruptions above 2 years. In terms of labor force participation, the most significant drop occurs after 2 years of interruptions, with participation falling from 86.8% to 73.1%. This implies that accumulated interruptions exceeding two years significantly impact long-term outcomes in the labor market.

In terms of hours worked, our analysis indicates a notable impact, with the hours falling from 3,294 for mothers with working interruptions below 6 months to 3,055 for mothers with more than 2 years of labor interruptions due to childcare, representing an 7.2% decrease.

To conclude, it is evident that an extended absence from the labor market imposes a substantial cost on women. Childcare options become increasingly relevant because interruptions in the labor market make reentry more challenging, leading to a subsequent drop in labor outcomes.

7. Conclusions

While advancements have been made, persistent gender disparities in the labor market remain a global concern. The presence of children emerges as a key driver of gender inequality in the labor market. Empirical evidence suggests that parenthood has a minimal impact on fathers' outcomes, while mothers experience reductions in labor force participation, employment, and hourly wages.

Childcare responsibilities, particularly for mothers, lead to significant interruptions and reduced working hours. These interruptions can be mitigated with working flexibility, family support, or professional childcare services. Childcare costs play a crucial role in mothers' working decisions, with households that can afford childcare services experiencing higher lifetime incomes.

We explore how restrictions in using childcare services affect gender gaps in the labor force, employment, full-time employment share, and hours worked among parents with children under 15. We go beyond financial constraints, examining gender gaps among parents who receive family support or provide childcare themselves. Working time flexibility for childcare is also analyzed, along with the long-term consequences of work interruptions.

Using a specialized module from the 2018 Spanish Labor Force Survey, we identify substantial gender gaps in labor force [31.4 percentage points (pp)], employment (38.6 pp), full-time employment (39.6 pp) and hours worked (30.0%) among parents facing childcare constraints. In contrast, parents without such restrictions experience much lower gender gaps (4.5 pp, 6.9 pp, 18.8 pp, and 16.4%, in each case). We also show that flexibility in working times to allow for childcare helps to alleviate the gender gap in hours worked.

Crucially, the presence of childcare restrictions exacerbates gender gaps when compared with a scenario in which parents choose not to use childcare services, instead managing it themselves. This alternative scenario shows reductions in both maternal and paternal labor force engagement and working hours, implying a more equitable distribution of childcare duties within the household. This underscores that when there are fewer parental constraints, the allocation of childcare responsibilities tends to be more balanced.

Additionally, we explore the long-run consequences of extended work interruptions due to childcare, revealing a significant decline in women's labor supply and employment rates, particularly for career breaks lasting 2 years or more. This underscores the enduring impact of extended career breaks for childcare on women's labor outcomes.

In conclusion, our study sheds light on the impact of childcare on gender disparities in the labor market, emphasizing the importance of childcare accessibility, affordability, and flexibility in shaping women's career trajectories. Addressing these issues is crucial for promoting a more equitable and inclusive labor market.

While our findings reveal significant correlations, it is important to note that they do not establish a causal relationship due to the absence of a clear identification strategy. Nevertheless, these correlations underscore the urgency for policy interventions aimed at dismantling barriers to childcare, encompassing both physical accessibility and affordability.

Additionally, our findings open a wide avenue for future research. Recognizing the constraints inherent in our study, we aim to further investigate the long run impact of labor market disruptions, while also examining the labor market effects of free public daycare services in children up to two years old.

Notes

1. See Table LFS by sex and age - indicators from the OECD.Stat
2. The growing literature on the effects of parenthood on women relative to men includes: Angelov *et al.* (2016), Kleven *et al.* (2019), Sieppi and Pehkonen (2019), Quinto *et al.* (2021), Casarico and Lattanzio (2023) and Kleven *et al.* (2023), among others.
3. See the Eurostat Database table 'Population with work interruption for childcare by duration of interruption and educational attainment level (lfso18stlened)".

4. See the Eurostat Database table "Population not using childcare services by main reason (lfso18cobs)."
5. Similar one-period labor supply models with childcare restrictions are discussed in Connelly (1992), Ribar (1992) and Powell (1997), among others. A comprehensive survey of these of models is available in Akgunduz and Plantenga (2018).

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Further reading

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Appendix

Table A1.
Construction of childcare variables

Variable M3	Variable M4	Variable M5
Do you regularly use professional childcare services for your own children or your partner's children under 15 years old, whether they reside inside or outside the home	If M3 is NO: Main reason why you don't usually use professional childcare services for your own children or your partner's children under 15 years old	If M4 is NO NEED, reason: The main reason why he/she doesn't need or isn't interested in professional childcare services for their own children or their partner's children under 15 years old
1.Yes: Yes, for all their children under 15 years old 2. Occasionally Yes, but not for all their children under 15 years old		
3. No	1. Unavailability: There are no accessible services or no vacancies available	
	2. Expensive: There are two expensive	
	3. Bad Quality: The quality or type of available services	
	4. Bad schedule: The opening hours do not meet the household's needs	
	5. Other reasons: Other reasons related to the available childcare services	
	6. No need: he/she doesn't need or isn't interested in professional childcare services	1. Parents do it: He/she organizes childcare either alone or with their partner
		2. Family Support He/she organizes childcare with the help of grandparents, relatives, or friends

Notes: M3, M4, and M5 are the variable names within the database. We categorize "childcare services" under the blue color. It includes parents regularly using professional services (not related to compulsory education) for the care of their own children or their partner's children under 15 years of age, whether they reside inside or outside the household. The category childcare restrictions in red color is related to the primary reason for not regularly using professional services for childcare. The last two categories are related to the reasons for not needing or being uninterested in professional services for childcare: "Parents childcare" under orange color implies that each parent arranges childcare alone or with her partner, and "family support" in green color implies that parents organize childcare with the assistance of grandparents, relatives, or friends
Source: Authors' own creation

Variable	Mother	Father
Labor force		
Childcare restrictions	0.738	0.967
Parents childcare	0.756	0.963
Family support	0.943	0.983
Childcare services	0.925	0.987
Work		
Childcare restrictions	0.574	0.846
Parents childcare	0.592	0.886
Family support	0.861	0.944
Childcare services	0.853	0.945
Hours		
Childcare restrictions	2888.0	4299.9
Parents childcare	3030.4	4101.8
Family support	3310.1	4097.9
Childcare services	3169.0	4150.3
Full-time		
Childcare restrictions	0.578	0.959
Parents childcare	0.699	0.963
Family support	0.782	0.975
Childcare services	0.765	0.968

Notes: We report the row labor market outcomes in labor force rate, employment rate, full-time employment share and annual hours worked by gender
Source: Authors' own creation

Table A2. Row labor market variables

Table A3.
Estimated results for the short-run model

	Labor force	Work	Hours	Full-time
Mother	0.0480*** (0.0168)	0.0148 (0.0215)	−568.9 *** (143.7)	−0.1537*** (0.0261)
Childcare restriction	−0.0014 (0.0095)	−0.0490*** (0.0176)	−24.7 (120.8)	0.0083 (0.0119)
Mother*childcare restriction	−0.1822*** (0.0210)	−0.1930*** (0.0274)	−454.3 *** (162.7)	−0.1735*** (0.0322)
Parents childcare	−0.0140** (0.0059)	−0.0336*** (0.0100)	−211.7 *** (79.8)	. 0027 (0.0082)
Mother*parents childcare	−0.1653*** (0.0124)	−0.2344*** (0.0164)	−155.8 (108.9)	−0.0742*** (0.0202)
Family support	0.0067 (0.0058)	0.0165* (0.0099)	−152.4* (87.7)	0.01457** (0.0082)
Mother*family support	−0.0160 (0.0114)	−0.0310** (0.0165)	33.9 (117.6)	−0.0012 (0.0209)
Working flexibility	–	–	−108.7 ** (54.8)	–
Mother*working flexibility	–	–	142.2* (76.9)	–
Household size	−0.0148*** (0.0052)	−0.0278*** (0.0065)	100.8 ** (44.8)	0.0125* (0.0069)
Number of children	0.0135** (0.0064)	- 0.0242*** (0.0087)	−67.3 (60.4)	−0.0155* (0.0082)
Mother*number of children	−0.0413*** (0.0077)	−0.0380*** (0.0094)	−36.2 (59.4)	−0.0138 (0.0111)
Non-working couple	−0.0033 (0.0110)	0.0447***- (0.0151)	105.2 (87.8)	. 0222 (0.0162)
Working couple	−0.0301*** (0.0093)	0.0401*** (0.0126)	−124 0.0* (71.6)	−0.0066 (0.0148)
Children below 3	0.0063 (0.0058)	0.0000 (0.0096)	−60.2 (67.1)	0.0068 (0.0072)
Women*children below 3	−0.0667*** (0.0118)	−0.0551*** (0.0147)	−330.9 *** (91.0)	−0.0321** (0.0175)
Age	0.0223*** (0.0051)	0.0502*** (0.0062)	35.2 (35.7)	0.0028 (0.0064)
age^2	−0.0002*** (0.0000)	−0.0005*** (0.00007)	−0.386 (4268)	0.0000 (0.0000)
Spanish	0.05099 (0.0119)	0.0884*** (0.0146)	72.7 (80.2)	0.0472*** (0.0159)
Secondary education	0.0630*** (0.0168)	0.1636*** (0.0206)	56.25 (121.7)	0.0102 (0.0208)
Tertiary education	0.1207*** (0.0170)	0.2776*** (0.0209)	49.0 (128.6)	0.0057 (0.0222)
Post tertiary education	0.1392*** (0.0185)	0.2980*** (0.0232)	144.0 (155.1)	0.0121 (0.0263)
Constant	0.4256*** (0.1097)	−0.4566*** (0.1319)	5708.5 *** (782.3)	0.9893*** (0.1423)
Number of observations	12,168	12,168	8,579	8,579
R-squared	0.1419	0.2111	0.1887	0.1760

Notes: We estimate OLS regressions using equations (1) and (2). Robust standard errors are in parentheses. All regressions control for regional (province) fixed effects and *, **, ***measures statistical significance at 10, 5 and 1 % levels, respectively. Hours and full-time also control for occupation (9 categories), economic activities (agriculture, industry, and services), and professional situation (5 categories)
Source: Authors' own creation

Variable	Mother	Father
Labor force		
Childcare restrictions	0.659	0.973
Parents childcare	0.737	0.967
Family support	0.819	0.979
Childcare services	0.935	0.980
Work		
Childcare restrictions	0.478	0.864
Parents childcare	0.564	0.891
Family support	0.686	0.921
Childcare services	0.857	0.926
Hours		
Childcare restrictions	2796.0	3996.1
Parents childcare	3037.7	3904.5
Family support	3146.4	3903.0
Childcare services	3472.6	4154.9
Full-time		
Childcare restrictions	0.572	0.967
Parents childcare	0.682	0.958
Family support	0.734	0.971
Childcare services	0.769	0.957
Hours with working flexibility		
Childcare restrictions	2581.3	3928.1
Parents childcare	3060.5	3836.1
Family support	3169.1	3834.5
Childcare services	3496.0	4085.7
Hours without working flexibility		
Childcare restrictions	2782.7	4036.2
Parents childcare	3024.5	3944.2
Family support	3169.1	3942.7
Childcare services	3460.0	4193.9

Notes: We report the predicted values of the labor market outcomes conditional on each of the childcare categories while holding all other explanatory variables constant in Table A3 (predicted margins)
Source: Authors' own creation

Table A4. Predicted labor market variables

	Labor force	Work	Hours	Full-time
Interruption 6 to 12 month	−0.0092 (0.0225)	−0.0199 (0.0263)	−105.54 (129.65)	−0.0336 (0.0260)
Interruption 1 to 2 years	−0.0483 (0.0315)	−0.0770** (0.0369)	23.36 (204.74)	−0.0321 (0.0372)
Interruption for more than 2 years	−0.1364*** (0.0254)	−0.1897*** (0.0280)	−238.44* (146.08)	−0.1120*** (0.0326)
Household size	0.0057 (0.0139)	−0.0188 (0.0291)	−22.61 (75.54)	−0.0098 (0.0167)
Couple not working	−0.0799** (0.0330)	−0.0948** (0.0453)	−425.41* (203.34)	−0.0576 (0.0424)
couple working	−0.0573 (0.0241)	−0.0304 (0.0369)	−238.31* (146.52)	−0.0520* (0.0319)
Age	0.0599* (0.0372)	0.0631 (0.0447)	57.83 (255.82)	0.0440 (0.0517)
age^2	−0.0007** (0.0605)	−0.0007 (0.0715)	−0.668 (2.167)	−0.0004 (0.0858)
Spanish	- 0.0126 (0.0606)	−0.0583 (0.0715)	−300.21 (354.01)	−0.0439 (0.0857)
Secondary education	0.0890 (0.0605)	0.1848** (0.0652)	272.98 (420.15)	0.1806** (0.0873)
Tertiary education	0.1751** (0.0604)	0.3058*** (0.0657)	446.53 (439.35)	0.2009** (0.0897)
Post tertiary education	0.1982** (0.0666)	0.3198*** (0.0748)	803.09* (480.85)	0.0989 (0.0981)
Constant	−0.4945** (0.9316)	−0.8935*** (1.141)	5744.78 (5776.87)	−0.0717 (1.327)
Number of observations	1,702	1,702	1,140	1,487
R-squared	0.0841	0.1136	0.1149	0.2163

Table A5. Estimated results for the long-run model

Notes: We estimate OLS regressions using equation (3). Robust standard errors are in parentheses. All regressions control for regional (province) fixed effects and report robust standard errors and *, **, ***measures statistical significance at 10, 5 and 1 % levels, respectively. Hours and full-time also control for occupation (9 categories), economic activities (agriculture, industry and services), and professional situation (5 categories)
Source: Authors' own creation

Variable	Labor force	Work	Hours	Full-time
Interruptions less than 6 month	0.868	0.802	3294.4	0.856
Interruptions 6 to 12 month	0.858	0.782	3188.9	0.822
Interruptions 1 to 2 years	0.818	0.725	3177.8	0.823
Interruptions more than 2 years	0.731	0.612	3055.9	0.744

Table A6. Predicted labor market variables for mothers with children above 15 years old

Notes: We report the predicted values of the labor market outcomes conditional on each length of interruption while holding all other explanatory variables constant in Table A5 (predicted margins)
Source: Authors own creation

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