



HAL
open science

Demand-side determinants of the socioeconomic gap in ECEC enrollment in France

Laudine Carbuccia

► **To cite this version:**

Laudine Carbuccia. Demand-side determinants of the socioeconomic gap in ECEC enrollment in France. Laboratoire Interdisciplinaire d'Evaluation des Politiques Publiques; Caisse Nationale d'Allocations Familiales. 2024, 91 p. hal-04643692

HAL Id: hal-04643692

<https://sciencespo.hal.science/hal-04643692v1>

Submitted on 10 Jul 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial - NoDerivatives 4.0 International License

Demand-side determinants of the socioeconomic gap in ECEC enrollment in France

Report of the Laboratory for Interdisciplinary Evaluation of Public Policies (LIEPP)* coordinated in partnership with the Caisse Nationale des Allocations Familiales.

May 2024

Project holder: Laudine Carbuccia¹

*Laboratory for Interdisciplinary Evaluation of Public Policies (LIEPP) supported by the France 2030 investment plan through IdEx Université Paris Cité (ANR-18-IDEX-0001).

The opinions expressed in this report are those of the authors alone.

i: Sciences Po, Centre for Research on Social Inequalities (CRIS), Laboratory for Interdisciplinary Evaluation of Public Policies (LIEPP).

Demand-side determinants of the socioeconomic gap in ECEC enrollment in France:

Final report for the Caisse Nationale des Allocations Familiales

Laudine Carbuccia

2024-05-09

Table of Contents

Glossary	1
I. Introduction.....	2
II. Background and context of the study	3
III. Descriptive Analyses	5
A. General Research Design.....	6
B. Sample description.....	6
IV. Structure of the demand for ECEC during pregnancy.....	11
A. Structure of the demand for ECEC after birth (one year later).....	14
B. Type of ECEC used	17
C. Types of ECEC known.....	21
D. Cost of daycare.....	21
E. Subsidies	21
F. Determinants of the intention to apply to ECEC during pregnancy, and actual intention	22
V. Towards a causal approach: the Randomized Controlled Trial	57
A. Research design	57
B. Intervention design.....	58
C. Research questions	60
D. Theory of change and main outcomes of interest	60
E. Empirical strategy	62
1. Intention to treat	62
2. Average treatment effects on the treated	62
F. Results.....	63

1. Balance checks	64
2. Analysis of non-response and differential attrition	65
3. Treatment effects of the programme	67
A Intention to treat analysis	68
B Treatment effect on the treated	70
4. Heterogeneity of the treatment effects	73
A Level of education.....	73
B Migration background	77
C Past ECEC usage.....	81
D Information level at baseline.....	85
VI. Limitations.....	88
VII. References.....	89

Glossary

- **Childcare:** used to refer to any childcare type, be it formal (regulated) or informal (non regulated).
- **Early Childhood Education and Care (ECEC):** “mode d’accueil formel”. Any type of childcare that is regulated by an institution before children enter preschool.

I. Section I: Introduction

Early cognitive and socio-emotional skills play a crucial role in shaping academic achievement and overall well-being (Heckman & Masterov, 2007; OECD, 2001, 2015). Consequently, socioeconomic disparities in the development of these skills raise significant concerns. These disparities are evident even before preschool (Carbuccia et al., 2020; Downey et al., 2019; Grobon et al., 2019; OECD, 2009). Participation in high-quality early childhood education and care (ECEC) before preschool is associated with improved cognitive and socio-emotional abilities (Bennett, 2012; Camilli et al., 2010; Melhuish, 2004; Van Huizen & Plantenga, 2013), particularly so among children from low socioeconomic status (SES) backgrounds (Berger et al., 2020; Ghirardi et al., 2022; Schmutz, 2024; Waldfogel, 2002). Additionally, access to ECEC facilitates women's employment, leading to increased family income (d'Albis et al., 2017; Hermes et al., 2022; Kimmel, 1998; Martinez & Perticara, 2022; Simintzi et al., 2022). ECEC therefore has the potential to reduce early inequalities in child development (Ghirardi et al., 2022; Schmutz, 2024).

However, in most OECD countries, there is a socio-economic gap in ECEC enrollment, meaning that families with a low-socioeconomic status (low-SES) attend these structures the least (OECD, 2016). This gap is particularly large in France, where there is a 65 percentage points difference in attendance between the third and first-income tertiles in 2014, despite ECEC being heavily subsidized for low-SES families and its costs being means-tested (OECD, 2016). In 2018, only 19% of families below the poverty had access to ECEC (Zaouche-Gaudron et al., 2021; CREDOC, 2023). This unequal attendance can thus further exacerbate inequalities in child development and school success (Berger et al., 2020; Downey et al., 2019; Ghirardi et al., 2022; Grobon, 2018; Melhuish, 2004).

If policymakers want ECEC to act as a means of reducing inequalities, they must ensure that those with the highest potential benefits can easily access it. Yet, very little is known about the determinants of the ECEC enrollment gap. This is particularly true in France, where, to our knowledge, only a few observational studies investigated this question (Carbuccia et al., 2021). In particular, we do not know whether the SES-based gap in ECEC enrollment mainly stems from parental preferences, a lack of information about ECEC, behavioral and administrative barriers during the application process, or other factors down the application process line such as the criteria to allocate the available ECEC slots.

Our project aimed to fill this gap by examining the determinants of the SES-based gap in ECEC enrollment in France. Producing the first data to document the demand for ECEC structures in France and how it is socially stratified, we also investigate the barriers to ECEC access through a multi-arm experiment testing two easily reproducible interventions. In one treatment arm, the intervention consists in providing information to parents through simple text-messages and videos in several languages emphasizing important features of the ECEC application process and links to more detailed information. In the second treatment arm, we also alleviate behavioral and administrative barriers by also offering families a personalized administrative support to register to ECEC.

We use a randomized controlled trial (RCT) to assess the effectiveness of these interventions in increasing ECEC enrollment among a sample of 1849 families ($N_{low-SES} = 729$) in Paris region. To account for the diversity of structural barriers, we implemented our trial in three different areas (Paris, Val de Marne, and Seine Saint Denis), with different application processes and availability of ECEC slots. We recruited a sample of 1849 expectant families in several maternity wards in these areas, between four and nine months of pregnancy. The treatments were delivered to all assigned participants regardless of their socioeconomic status, but was designed to address the barriers low-SES families face when applying to ECEC. We tackled information barriers in both treatment arms by providing information about ECEC structures costs, availability, and application processes, which low-SES families were shown to lack in a preliminary fieldwork. We tackle administrative and behavioral barriers by providing personalized application support by trained experts. Our design thus allow us to separate the effects of a light-touch information intervention from the ones of a more costly but still easily scalable intervention.

Distinguishing the effects of informational and behavioral interventions is of paramount importance from a policy perspective. Our text messages and videos represent a cost-effective intervention that any policymaker would consider when confronted with the issue of the ECEC access gap, which could be readily expanded if its effectiveness is

demonstrated. However, given the potential presence of additional behavioral and administrative barriers preventing low-SES parents from taking action, even when they express an intention to use ECEC, this treatment may yield minimal to negligible effects in closing the access gap.

In intention-to-treat analyses, we find clear and consistent evidence that the bundle of information plus personalized application support increases the probability that low-SES families apply to ECEC slot, while not affecting high-SES families. However, despite this increase in application, we find limited effects on ECEC access. The effects are the strongest for families with lowest information level at baseline. We also aim to analyze the mechanisms through which these interventions work or not. To better understand the reasons behind the observed effects, we will leverage the rich data we collected on parental preferences, knowledge, behavioral (namely, present bias) and administrative barriers, but also an ex-post qualitative fieldwork we are currently running with participants.

This report contributes to the literature on ECEC and inequality by providing the first causal evidence on the determinants of the SES-based gap in ECEC enrollment in France. Our results have the potential to inform policymakers on the most effective policies to reduce this gap and promote ECEC as a means of reducing inequalities in child development and school success. Our study is also one of the first of its kind enabling us to dig deeper and in a causal fashion into the demand-side factors contributing to the universal low take-up of ECEC by low-SES families (OECD, 2018). In particular, to our knowledge, this is the first experiment able to disentangle the effect of information provision from the one of administrative support to mitigate the SES-gap in ECEC access. There is only one similar recent study by Hermes et al. (2021) we know of. The authors targeted information and behavioral barriers to ECEC access through a similar intervention in Germany, but their design does not allow for separating the two. They found that reducing informational and behavioral barriers during the application process increased low-SES families' application rates by 21 percentage points and their enrollment rates by 16pp.

The remainder of this report is structured as follows. Section 2 contextualizes our research within i) the literature on the determinants of ECEC enrollment and the effectiveness of policies to promote it, ii) France's ECEC supply, and iii) the study setting. Leveraging data from our longitudinal design, Section 3 is devoted to providing the first large-scale descriptive analysis of the demand-side factors correlated with the intention to use ECEC during pregnancy, with ECEC application, and with ECEC access in the French context, and how these outcomes are socially stratified. We start by presenting the research design, then provide data on the determinants of the intention to use ECEC during pregnancy, and finally present data on application and access for the same families one year later (using data from the control group of our intervention). Section 4 is devoted to the randomized controlled trial. We start by presenting the design of the RCT in detail, then present our empirical strategy, before finally turning to the preliminary results.

II. Section 2: background and context of the study

1. 1.2.1 1. Theoretical framework: Determinants of the ECEC enrollment gap

Drawing on the framework of Carbuccia et al. (2023), we categorize the potential determinants of the ECEC enrollment gap into two main groups for heuristic purposes: supply-side factors and demand-side factors.

Structural factors, such as affordability and accessibility, are known to be critical determinants affecting access to ECEC (Carbuccia et al., 2023). Affordability encompasses both the direct financial costs of ECEC and the opportunity costs incurred by parents, often mothers. While the burden of the direct financial costs might affect low-SES families to a greater extent, the opportunity costs are often higher for families with higher incomes, which may further motivate them to use ECEC (Workman & Jessen-Howard, 2018). Accessibility barriers arise from various sources, including residential inequalities, as ECEC facilities are often concentrated in affluent areas despite low-SES families being less mobile. Additionally, admission criteria to allocate ECEC spots, mismatches between parents' work schedule and ECEC opening hours, and bureaucratic requirements contribute to accessibility barriers (Archambault et al., 2019; OECD, 2001).

At the individual level, parental preferences play a significant role (Archambault et al., 2019; Lazzari, 2012). Low-SES parents may view reliance on ECEC as less desirable due to traditional social norms surrounding motherhood and children's needs (Leseman, 2002; Edin and Kefalas, 2005; Galland and Lemel, 2010; Pape, 2009; Schwartz, 2012). However, research in psychology suggests that caution must be exercised when interpreting the role of these preferences. Preferences may be influenced by perceived constraints and socially biased information about ECEC (Pungello and Kurtz-Costes, 2000; Vandebroek and Lazzari, 2014).

In this regard, low-SES families may have limited information about the availability, out-of-pocket costs, and application procedures of ECEC, mainly due to their decreased access to expert sources and less informative social networks. These information gaps can drive their childcare decision-making process towards parental care (e.g., if they think that they couldn't afford ECEC), and negatively impact their chances of securing a spot in ECEC, particularly when demand outweighs supply (Lazzari, 2012; Vandebroek and Lazzari, 2014).

Cognitive and behavioral factors further complicate access to ECEC for low-SES families. Poverty and economic insecurity may divert parents' cognitive resources away from ECEC-related decisions during the early years and lead them to rely more on fast and frugal heuristics to make decisions when choosing childcare (Chaudry et al., 2010; Kahneman, 2013). One such heuristic is to conform to prevailing practices within their social circles and default to the option of keeping the child at home. Moreover, low-SES populations are more prone to present bias, which may cause parents to delay the application process (Harrison et al., 2002; Ludwig et al., 2019; Pepper & Nettle, 2017; Yesuf & Bluffstone, 2008). If a mother is not employed, the probability of delaying application increases, as applying for and accessing ECEC incurs immediate costs, while the benefits in terms of child development or maternal employment are delayed and uncertain (Chaudry et al., 2010; Herbaut & Geven, 2019; Hunter et al., 2018; Wang & Sloan, 2018). The cumulative impact of these factors creates significant challenges for low-SES families in accessing ECEC. Friction costs, including cognitive and administrative burdens associated with the ECEC application process, further exacerbate these challenges and act as significant barriers to equitable access (Herd & Moynihan, 2019; Sunstein, 2019).

Given the wide array of potential factors involved, it is crucial to understand which factors have the most significant impact on the SES-based gap within a specific context. Such understanding is essential for developing effective policies that promote equitable access to ECEC for all families. For instance, if information, administrative and behavioral barriers hinder low-SES families from effectively applying to ECEC, policies that solely address the financial costs or supply of these services may not effectively reduce this gap.

2. 1.2.2 2. The French context

In this section, we present an overview of the ECEC landscape in France and examine how the factors outlined in the previous section may manifest within this context.

France operates under a dual system where ECEC is distinct from preschool education before children enter elementary school. ECEC becomes accessible to children as early as three months old, following the end of maternity leave, while preschool education becomes free and mandatory by the age of three. Although France boasts a relatively high ECEC coverage rate compared to other OECD countries, access remains highly unequal, particularly concerning the socio-economic backgrounds of families (OECD, 2016; Carbuccia et al., 2020). The majority of children below three years old are primarily cared for by their parents (56% in 2021; ONAPE, 2021).

The French ECEC landscape is multifaceted, featuring a combination of public, private, and associative providers offering various types of ECEC. Private childminders¹, known as *assistantes maternelles*, represent the most common

¹ Private childminders should not be confused with nannies, who take care of children in parents' own house. In France, Nannies account for only 1% of the care provided for children less than 3-years-old. Because only one to two families can employ the same nanny, nannies are most often more expensive than private childminders. In 2021, 20% of children below 3 years old had a private childminder as their primary care provider, while 18% attended daycare centers (ONAPE, 2022). Notably, private childminders tend

type of ECEC, accounting for 55.3% of early places in 2019 (ONAPE, 2021). Private childminders can care for up to four children from different families in their own homes.

Due to heavy subsidies and means-testing, affordability barriers are still considered as low in France compared to other countries (Panico, 2019). A full-time daycare slot can cost less than 75 USD for low-SES families, inclusive of diapers and meals. Regarding accessibility, private childminders are predominantly concentrated in rural areas, whereas daycare centers are more prevalent in urban settings (ONAPE, 2021). Public daycare applications are typically centralized at the municipal or district level, whereas there is no centralized application process for private or associative daycare centers or private childminders. Most often, parents have to do one application per daycare center or childminder. Moreover, daycare placements typically follow a strict calendar aligned with the school year, with most allocations occurring around June for infants under one year old to start care in September, resulting in seasonal variations in daycare placement probability based on birth month (ref). Securing a place for children older than one year old proves considerably more challenging. Because of these key features and given the limited availability of ECEC services, it is crucial for parents to submit applications to as many providers as possible, as early as possible. By doing so, they can maximize their chances of securing a slot.

Understanding the intricate workings of this complex system is therefore essential to navigate it effectively, leaving ample room for informational barriers to operate. Furthermore, even with the necessary information, the greater cognitive burden during pregnancy and the first year that low-SES families may face can lead them to delay the application processes and apply to fewer providers, thereby potentially reducing their odds of securing a spot. Consequently, we hypothesize that providing information and administrative support to low-SES families to mitigate informational and behavioral barriers will increase their application rates for ECEC. Assuming supply-side barriers are not too high, this intervention should also increase enrollment rates of low SES families, thereby mitigating the SES-based gap in ECEC enrollment. Additionally, we predict that the combined impact of administrative support and information provision will outweigh that of information provision alone, as the former addresses both informational and behavioral obstacles in the application process

3. 1.2.3 3. Study setting

Our study takes place in three urban areas in the Paris region: Paris (75), Val de Marne (94), and Seine Saint Denis (93). Despite these areas being geographically close and densely populated, they differ in terms of availability of ECEC slots and the application process. In Paris, the application process is centralized at the level of the neighborhood (*arrondissement*), and the availability of ECEC slots is relatively high compared to the national average (73.5 ECEC slots for 100 children under 3 years old, national average of 59.4 in 2021) (Cnaf Data, 2022). In Val de Marne, the application process is most often centralized at the city level, and the availability of ECEC slots is about average (50.7 per 100 children). Importantly, in Val de Marne, all applications for public daycare have to go through a website with no mobile version. In Seine Saint Denis, the application process is also most often centralized at the level of the city, but the availability of ECEC slots is among the lowest (33.6). While one limitation of this study is that our population is mostly urban, these variations in the availability of ECEC slots and the application process still allow us to enhance the external validity of our findings.

III. Section 3: Descriptive Analyses

In this section, we present descriptive statistics on the demand for ECEC in our sample, as well as evidence on the demand-side factors correlated with ECEC application and access. We start by presenting the research design and some descriptive statistics of our sample. Secondly, we provide data on structure of the demand for ECEC during

to be more expensive for low-SES parents (approximately 160 USD per month) compared to public, associative, and sometimes private daycare options (IGAS, 2017).

pregnancy based on our baseline questionnaire. Then, we present data on application and access for the same families one year later (using data from the control group of our intervention). Finally, we present the demand-side factors correlated with ECEC use intention, application and access in our data. While section 4 is causal, it should be noted that section 3 is descriptive and does not allow for causal inference.

A. 2.1 1. General Research Design

Between September and December 2022, we contacted pregnant mothers (4 to 9 months of pregnancy) during their visits to maternity wards of eight hospitals in the metropolitan area of Paris (Ile de France). Baseline questionnaires were administered right after receiving their informed consent. A total of 2027 questionnaires were administered, but only 1849 were retained for the study due to inclusion criteria. To be eligible for the study, participants had to be at least 18 years old, allowed to stay in the French territory, possess a smartphone (99.9% of the people interviewed), and understand and speak a basic level of French, English, or Arabic (spoken by 99% of the population in these areas). The primary reason for exclusion was undocumented status, with the secondary reason being refusal to provide phone numbers. The baseline questionnaire collected rich information, including sociodemographic characteristics, knowledge of the French ECEC system, and intentions to use ECEC.

One year later, between October and December 2023, participants were contacted again to complete the Endline questionnaire via assisted telephone interviews. As a token of appreciation for their time, participants were sent a 10 EUR voucher. 79% of families included in the study participated in the Endline survey (N = 1453).

B. 2.2 2. Sample description

This section presents basic sample characteristics, and differences between lower- and higher-SES families in the sample.

1. 2.2.1 A. General sample characteristics at baseline

Map 1 illustrates the distribution of our baseline sample across the Paris region. The labels correspond to the names of the 15 cities or districts of Paris where we have the highest number of participants at the baseline, with the size of the black dots being proportional to the number of participants residing in the city. The color corresponds to the ECEC coverage in each city: the darker the color, the greater the number of ECEC slots available for every 100 children who are less than 3 years old.

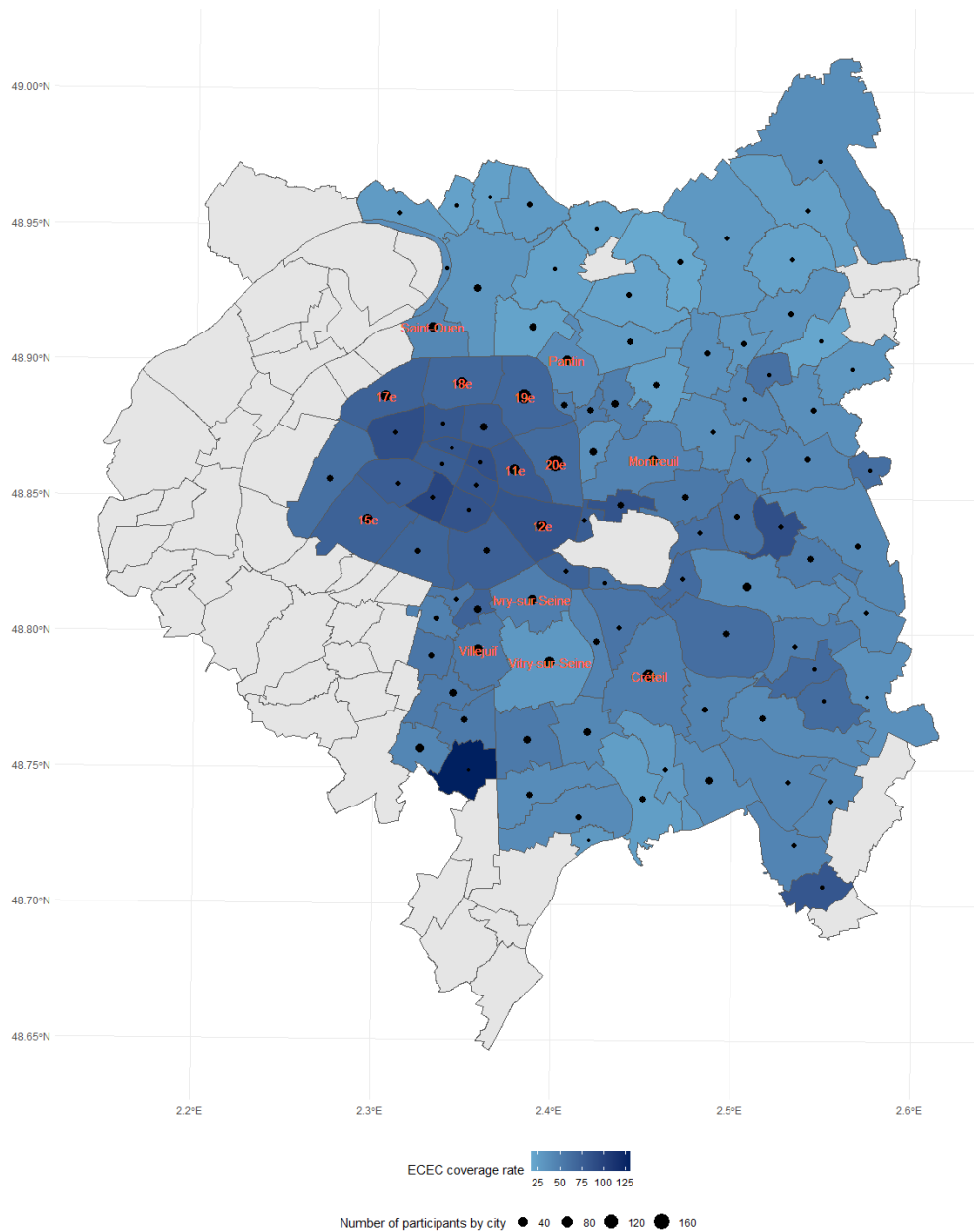


Figure 1. Figure 2.1: Map 1: Distribution of the sample across the Paris region

Table 1 shows the characteristics of our baseline sample. Because we recruited families in maternity wards, all the participants interviewed were expectant mothers. Partners also attended the interview 16.2 % of the time. Mothers were on average 7 months pregnant when surveyed, and 32 years old. 42% of the mothers are first time mothers, and 9% are single mothers. At the time of the interview, 67% of the mothers were employed, and 39% of them do not have any kind of tertiary education, which will be our main proxy for “lower-SES”. In the only nationally representative French cohort (ELFE) we have access to, this last proportion is 41.06% in Île De France. 18% of the families have a monthly income of less than 2500 EUR. In our sample, 47% of mothers were born abroad. In ELFE, the proportion of mothers

born abroad is 37% in Île De France, and according to INSEE estimates, focusing on Seine Saint Denis, Paris and Val de Marne would bring this proportion up to 45% ².

Tableau 1 - Main characteristics of our sample at baseline

Characteristic	N = 1,849¹
Age of the mother (years)	32.0 (28.0, 36.0)
First time mother	784 (42%)
Missing	3
Month of pregnancy	7.00 (6.00, 8.00)
Mother born in France	984 (53%)
Single parent family	159 (8.6%)
The mother is active	1,291 (70%)
Family earns less than 2500 EUR	332 (18%)
Can access a computer	1,564 (85%)
Department (Département)	
75	692 (37%)
93	451 (24%)
94	706 (38%)
Has already used ECEC	745 (40%)
Lives in a Low ECEC coverage area	1,099 (59%)

¹Median (IQR); n (%)

Turning to ECEC-related outcomes, 40% of the mothers have already used ECEC, 59% of the mothers are in a low ECEC coverage area, and 81% of them plan to use ECEC before preschool at Baseline. 33% of the mothers know only one or no ECEC type. 48% of the mothers do not know how much a slot in daycare would cost them.

2. 2.2.2 B. Differences between lower- and higher-SES families

As pre-registered, we use mothers' level of education as our main measure of SES. The rationale behind this choice is that other proxies of socioeconomic status such as income or employment status may be endogenous with respect to access to ECEC: there may be a bidirectional relationship between income or employment and access to ECEC (see Carbuccia et al., 2020 for a discussion). Therefore, we refer to as Low-SES that 39.4 % of families in our sample in which the mother has no tertiary education (N = 729), and conversely we classify as high-SES the remaining 60.6 % of families in which the mother attended tertiary education (N = 729). Following to the OECD guidelines, we will also run robustness checks using a composite measure of SES that also includes occupation.

Table 2 shows the differences between lower- and higher-SES families in our sample at baseline. We find that lower-SES families are significantly more likely to be single mothers (11pp), to be born outside of France (22pp), to be inactive

² IRB Number: 2022-015

(26pp), and to be in a household earning less than 2500 EUR a month (18pp). Low-SES mothers are also significantly more likely to be in an area with less ECEC supply (8pp).

Tableau 2 - Main characteristics by level of education of the mothers (Low-SES: No tertiary education)

Characteristic	Low-SES, N = 729¹	High-SES, N = 1,120¹
Month of pregnancy	6.7 (1.5)	6.9 (1.5)
Age of the mother (years)	30.8 (6.2)	33.2 (5.0)
First time mother		
No	472 / 727 (65%)	590 / 1,119 (53%)
Yes	255 / 727 (35%)	529 / 1,119 (47%)
Missing	2	1
Mother born in France		
No	434 / 729 (60%)	431 / 1,120 (38%)
Yes	295 / 729 (40%)	689 / 1,120 (62%)
The mother is active		
No	333 / 729 (46%)	225 / 1,120 (20%)
Yes	396 / 729 (54%)	895 / 1,120 (80%)
The family earns less than 2500 EUR		
No	519 / 729 (71%)	998 / 1,120 (89%)
Yes	210 / 729 (29%)	122 / 1,120 (11%)
Can access a computer		
No	233 / 729 (32%)	52 / 1,120 (4.6%)
Yes	496 / 729 (68%)	1,068 / 1,120 (95%)
Live in a Low ECEC coverage area		
No	260 / 729 (36%)	490 / 1,120 (44%)
Yes	469 / 729 (64%)	630 / 1,120 (56%)
Have already used ECEC		
No	446 / 729 (61%)	658 / 1,120 (59%)
Yes	283 / 729 (39%)	462 / 1,120 (41%)
Single parent family		
No	619 / 729 (85%)	1,071 / 1,120 (96%)
Yes	110 / 729 (15%)	49 / 1,120 (4.4%)

¹Mean (SD); n / N (%)

a) 2.2.2.1 C. Place of birth of migrants mothers

Most of the mothers born abroad come from Sub-Saharan Africa or MENA. The distribution of the birthplaces of participants is as follows:

Region of birth	n
En France métropolitaine	945
Afrique subsaharienne	386
MENA (Maghreb +Arabie saoudite, etc.)	298
Europe/Amérique du Nord, Australie	87
Asie (hors MENA)	65
Dans un territoire français d'outre-mer	39
Amérique Latine (à partir du Mexique)	25
Autre	2
Je ne souhaite pas répondre	2

Most mothers arrived in France less than 10 years ago. The distribution of the time since arrival of participants is as follows:

Years since the mother arrived in France	n
Moins de 5 ans	293
Entre 5 et 10 ans	261
Entre 10 et 20 ans	187
Il y a plus de 20 ans	121
Je ne sais pas	1

3. 2.2.3 D. Geographical distribution of the participants

Numéro de département	n
94	706
75	692
93	451

We have more people from Val de Marne (94) and Paris (75) than from Seine Saint Denis (93), probably due to the location of the maternity wards.

C. 2.3 3. Structure of the demand for ECEC

In this section, we present raw estimates on the demand for ECEC during pregnancy in our sample, as well as how this demand relates to application and access to ECEC one year later. In this section, we mainly on bivariate statistics

between the demand for ECEC and the SES of the families. In the next section, we will present multivariate analyses of the determinants that may drive this the demand for ECEC.

IV. A. Structure of the demand for ECEC during pregnancy

a) 2.3.0.1 Childcare plans after birth

When asked during pregnancy, 80 % of families want to use ECEC after birth, as represented in Figure 2.2

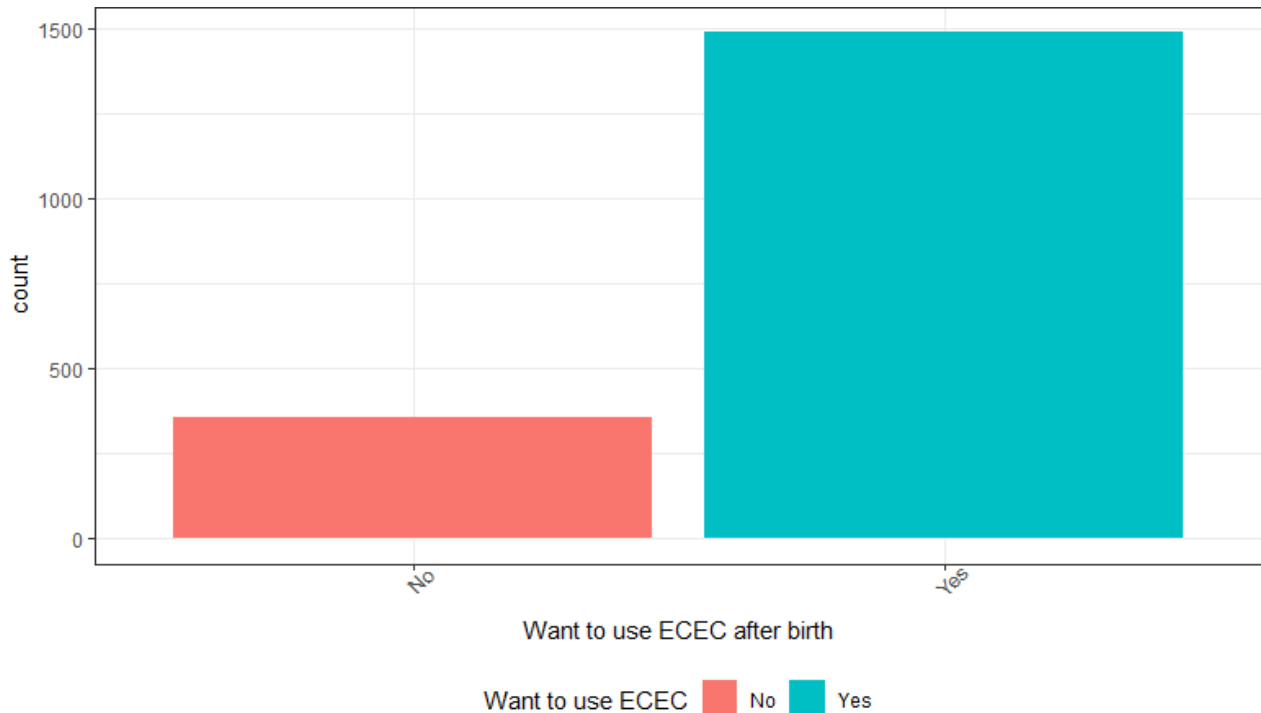


Figure 2.2: Number of parents that want to use ECEC after birth at baseline

b) 2.3.0.2 Analysis for low-SES

Parents wanting to use an ECEC are still over-represented among low-SES parents: 70 % of them want to use ECEC. The same holds for mothers born outside of France: 80 % of them want to use ECEC. Interestingly, even among inactive parents, parents wanting to use an ECEC are still over-represented: 70 % want to use ECEC.

2. 2.3.1 Timing of ECEC wanted

High-SES families tend to be willing to put their child significantly earlier in ECEC than low-SES families (X-squared = 22.459, df = 1, p-value = 2.147e-06). For instance, 40% of high SES mothers wanted to put their child in ECEC in September 2023 or before, while it is the case for only 30% low-SES mothers. As discussed previously, this decision is likely impact their probability of getting a slot given that most of the places are allocated around June for September within the first year of the child.

3. 2.3.2 Type of ECEC wanted

Consistently with the literature and as shown in figure 2.3 parents wanting to use daycare centers (*crèches*) are over-represented in our study: 60 % of the whole sample want to use this type of ECEC.

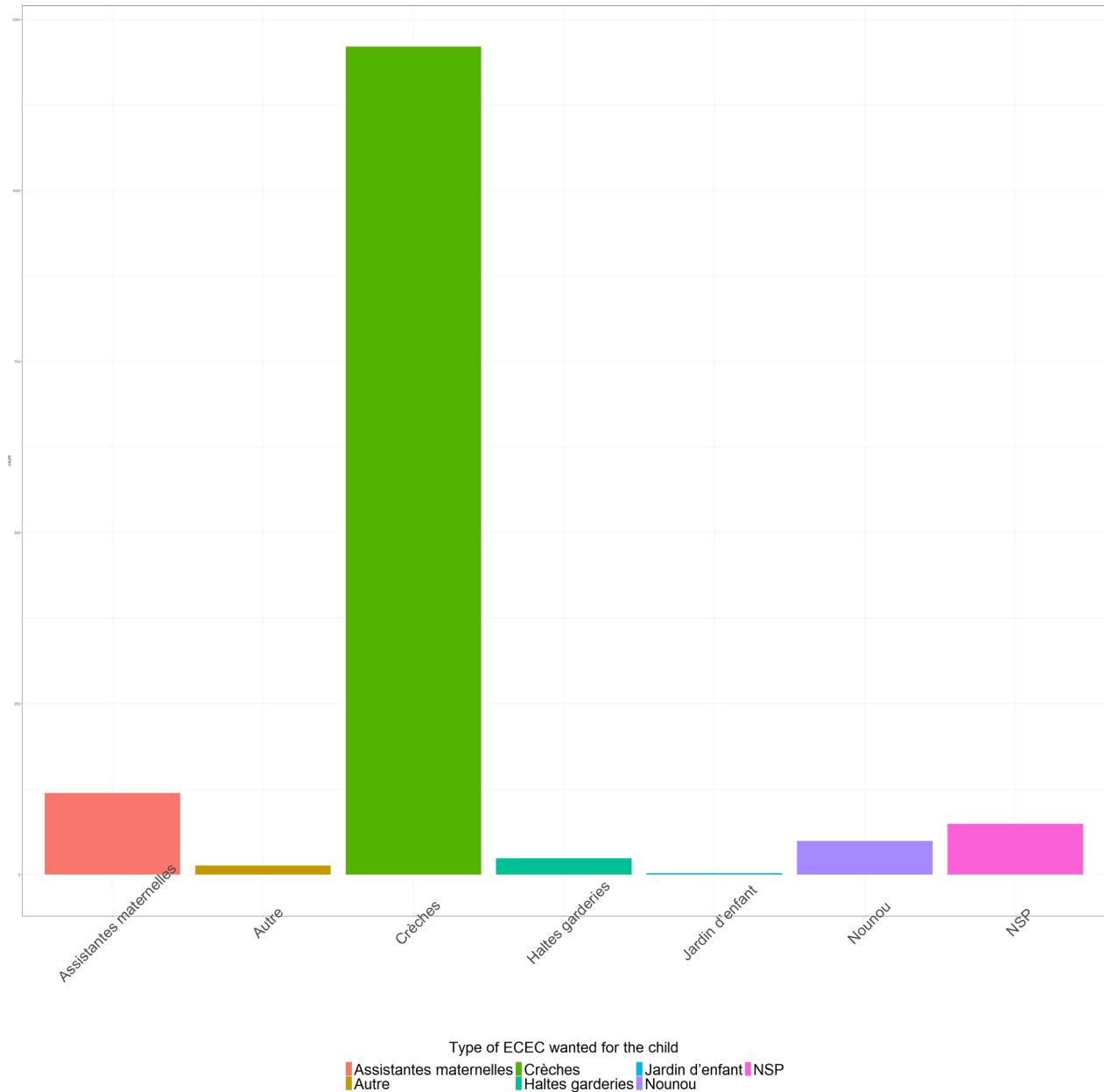


Figure 2.3: Type of ECEC wanted at baseline

a) 2.3.2.1 Analysis for low-SES

Again, the pattern is quite similar if we restrict the analyses to low-SES mothers: 60 % want to use daycare. The same holds for families in which the mother is not born in France: 60 % want of to use daycares. Interestingly, even among inactive parents, the proportion wanting to use daycare is still quite high: 50 % of mothers who are inactive at baseline want to use daycare. Interestingly enough, while occasional daycare centers (*halte garderies*) would be the more appropriate type of care for these families - this is a part-time and more flexible ECEC type-, there is only a 1 percentage

point difference between inactive mothers and the whole sample in the proportion wanting to use these occasional daycare centers.

This raises the question of the types of ECEC that are known by families at baseline. Maybe daycare is the only ECEC they know of. In the next sub-section, we thus look at information dynamics and how they may differ across socioeconomic groups.

4. 2.3.3 Information dynamics

a) 2.3.3.1 Number of ECEC known

First, low-SES mothers knew on average significantly less ECEC types than their more affluent counterparts. When asked to tell us all the ECEC type they knew, mothers knew 2.26 ECEC types on average. But low-SES mothers know on average 0.9 ECEC types less than high SES mothers. While high-SES mothers knew on average 2.62 ECEC types, low-SES mothers knew on average 1.72 of them ($t = -14.294$, $p\text{-value} < 2.2e-16$).

The same hold for mothers born abroad. They knew 1.71 ECEC types on average regardless of their socioeconomic background ($t = -18.845$, $p\text{-value} < 2.2e-16$). This mean is even lower for inactive mothers ($M_{inactive} = 1.59$, $t = 15.507$, $p\text{-value} < 2.2e-16$).

b) 2.3.3.2 Types of ECEC known

Not only low-SES mothers knew less ECEC types than high-SES mothers did, but low-SES mothers were significantly more likely to know daycare centers and only daycare centers ($\%_{low-SES} = 27$, $\%_{high-SES} = 9$, $t = 11.164$, $p\text{-value} < 2.2e-16$). This is also true for mothers born outside of the French territory regardless of their socioeconomic status. They were even more likely to be in this situation ($\%_{born\ abroad} = 28$), while only 6 % mothers born in France were in this situation.

Strikingly, it was also the case for inactive mothers: 29.2% of them only knew daycare centers, while it was the case for 10.4 % of active mothers. This even though generally, inactive mothers are less likely to access a place in daycare because they don't work. Conversely, inactive mothers were not significantly more likely to know about occasional daycare centers (*Haltes Garderies*) than they active counterparts, even when this type of care could be more suitable to their expressed needs. Overall, the awareness of the existence this occasional and flexible ECEC type seems quite low: only 18.9 % of respondents knew this type of ECEC (19.2% for inactive mothers, and 18.7 % for active mothers).

c) 2.3.3.3 Cost of daycare

Similarly, low-SES mothers were significantly less likely to have an idea of the costs of a place in daycare. The proportion was 78 % for low-SES mothers, compared to 52% for high-SES mothers. The same holds for mothers born abroad and inactive mothers regardless of their level of education. These proportions of mothers having no idea of these costs are 77.8 % and 81.8 % of them respectively. However, it is worth noting that the consequences of being unaware of the cost of ECEC might vary depending on one's socioeconomic status. While high-SES families are likely to be confident that they can afford the expenses regardless of their magnitude (or nearly), low-SES families may hesitate to apply for childcare services to a greater extent due to concerns about potential financial burdens. We restrict the analyses only to the ones that have never used ECEC to avoid confounders.

d) 2.3.3.4 Subsidies

Relatedly, low-SES mothers were also significantly less likely to know that the ECEC costs are reduced by subsidies, even if we restrict the analyses to mothers who have never used ECEC ($\%_{low-SES} = 57.8\%$, $\%_{high-SES} = 84.3\%$, $X\text{-squared} = 149.7$, $p\text{-value} < 2.2e-16$)

B. 2.4 B. Structure of the demand for ECEC after birth (one year later)

In the last section, we provide evidence of how the two treatment groups differ from the control group in terms of ECEC outcomes after birth. However, before delving into these analyses, we want to offer descriptive overview of how our primary variables of interest about ECEC are distributed in our sample in absence of intervention. For this end, this section leverages data from the *control group* of our experiment we measured at baseline. While this descriptive approach holds significance given the current state of the scientific literature, it is essential to note the limited sample size: 494 participants. We start by describing ECEC application behavior, then ECEC access, and finally information dynamics.

1. 2.4.1 ECEC application

Even in the control group, the vast majority of parents (70 % of them) had applied to at least one ECEC at the time of the interview, between October and December 2023 ³ By this time, children are on average 11 months old.

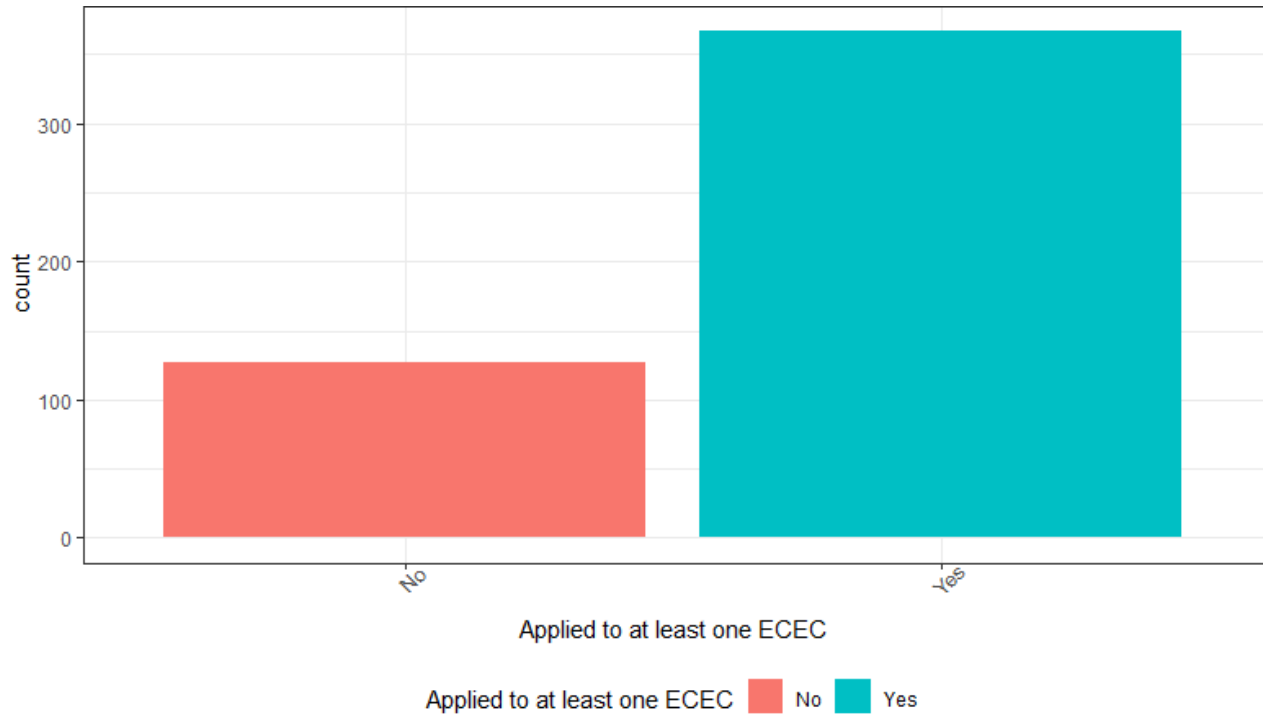


Figure 2.4: Number of parents that applied to at least one ECEC

a) 2.4.1.1 Analyses for low-SES

There is a socioeconomic bias in the proportion of parents who applied to at least one ECEC:

³ RCT ID AEARCTR-0009901

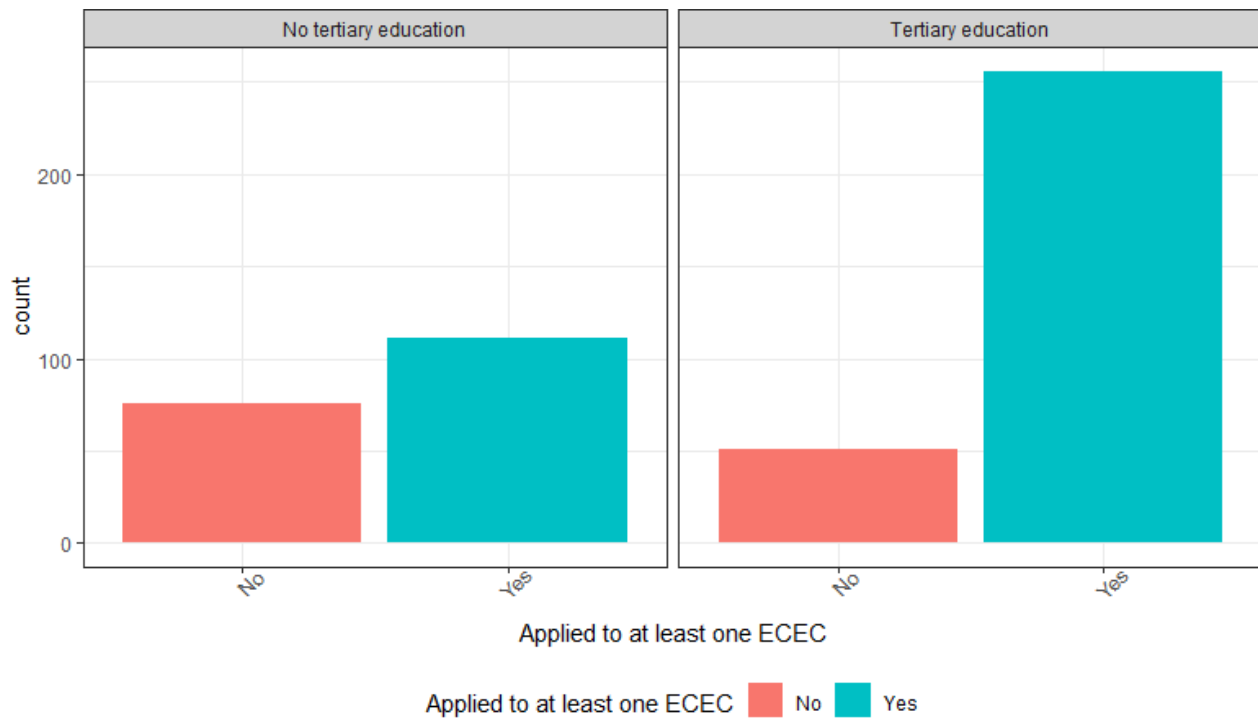


Figure 2.5: Number of parents that applied to at least one ECEC by level of education

Low-SES parents are significantly less likely to have applied to at least one ECEC: 60 % them have applied to at least one ECEC compared to 74 % for the general population and 83 % for high-SES participants. The same holds for women born abroad regardless of their level of education: 66 % has applied to at least one ECEC compared to 80 % for mothers born in France. 52 % of inactive mothers have applied to at least one ECEC at endline compared to 91 % of active mothers. However, even though inactive mothers are less likely to have applied to ECEC at baseline, it also means that more than half of them have applied to at least one ECEC at the time of the endline interview.

2. 2.4.2 Timing of ECEC application

While the timing of application is crucial to get an ECEC place, we find that low-SES mothers applied significantly later than high-SES mothers: the average time difference is two months.

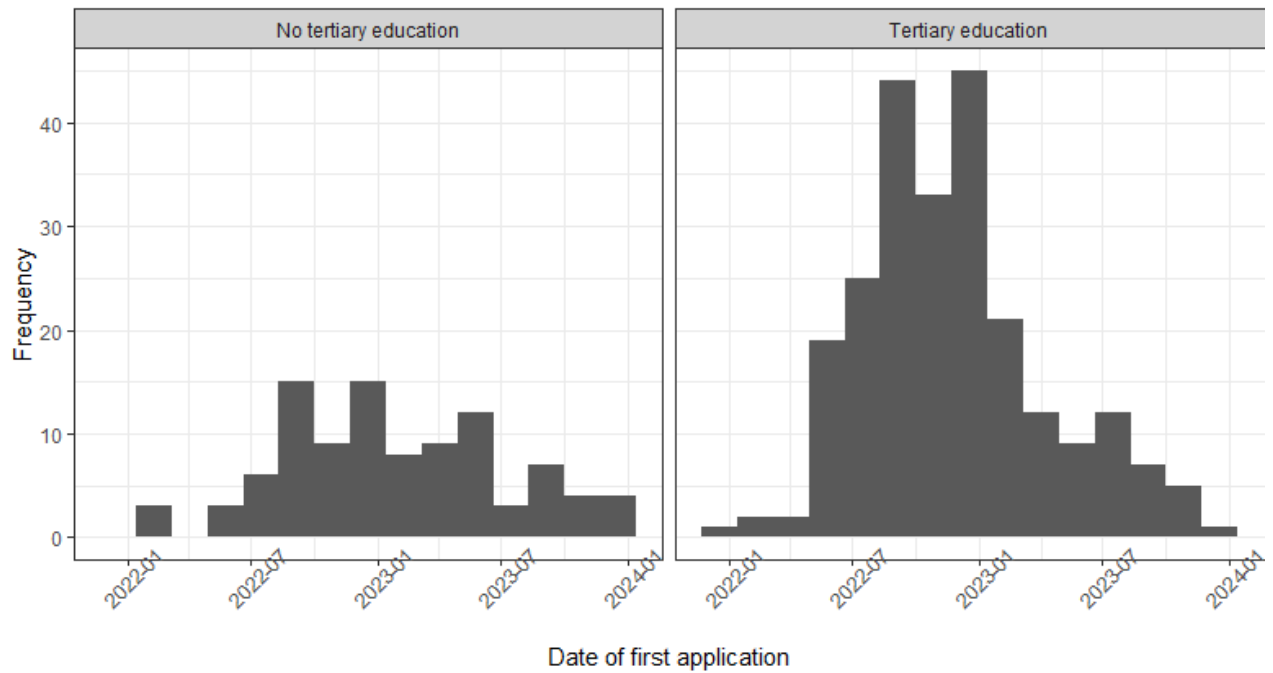
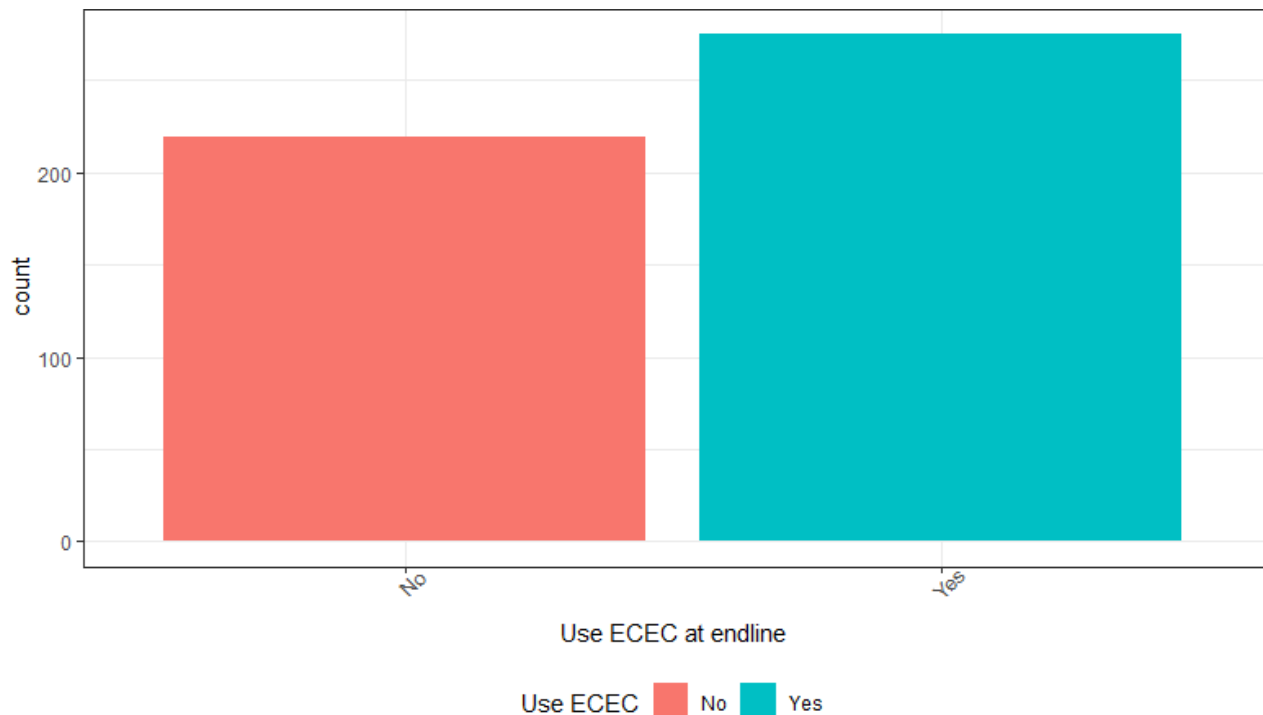


Figure 2.6: Histogram of the first ECEC application date according to the education level of the mother

3. 2.4.3 ECEC use after birth

Turning to ECEC use at endline, parents using ECEC are slightly over-represented in the sample: 60 % of parents in the sample use them, which is in line with the French national statistics (ONAPE, 2022).



4. 2.4.4 Analysis for low-SES

Low-SES parents are significantly less likely to use ECEC: 30 % them use ECEC at endline compared to 60 % for the general population and 70 % for high-SES families. The same holds for women born abroad, regardless of their level of education: 40 % use ECEC while it is the case of 70 % of mothers born in France. 20 % of inactive mothers use ECEC compared to 80 % of active mothers. It is important here to bear in mind that more than half of inactive mothers applied to at least one ECEC, which means inactive mothers in our sample they have on average less than 50% of chances to get a place when they apply to ECEC, in absence of intervention.

C. 2.5 Type of ECEC used

Among parents using ECEC, those using *daycare*, especially public daycare are over-represented in the sample. One must bear in mind that a vast majority of respondents lives in urban areas. Our results should not be generalized, especially to rural areas.

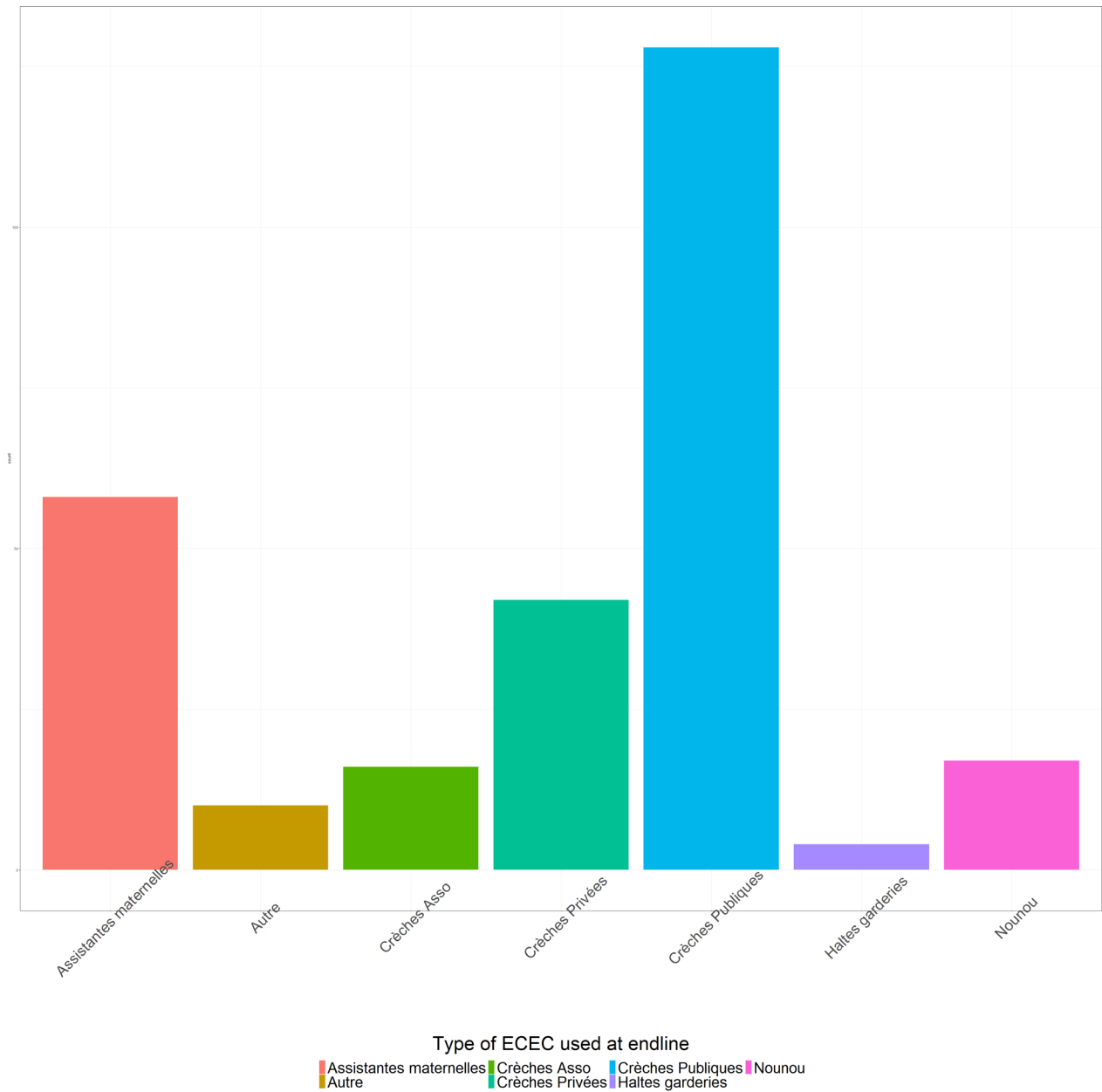


Figure 2.7: Distribution of the type of ECEC used at endline

As displayed in Table X, the use of public daycare is particularly frequent among low-SES (low-educated) parents who use ECEC. 70 % of them use public daycare compared to 40 % of high-SES families:

Type of ECEC used		Education level of the mother		
		Low-SES No tertiary education	High-SES Tertiary education	Total
Assistantes maternelles	Count	8 (2.9%)	50 (18.2%)	58 (21.1%)
	Mar. pct ⁽¹⁾	12.3% ; 13.8%	23.8% ; 86.2%	

		Education level of the mother		
		Low-SES No tertiary education	High-SES Tertiary education	Total
Autre	Count	2 (0.7%)	8 (2.9%)	10 (3.6%)
	Mar. pct	3.1% ; 20.0%	3.8% ; 80.0%	
Crèches Asso	Count	3 (1.1%)	13 (4.7%)	16 (5.8%)
	Mar. pct	4.6% ; 18.8%	6.2% ; 81.2%	
Crèches Privées	Count	5 (1.8%)	37 (13.5%)	42 (15.3%)
	Mar. pct	7.7% ; 11.9%	17.6% ; 88.1%	
Crèches Publiques	Count	45 (16.4%)	83 (30.2%)	128 (46.5%)
	Mar. pct	69.2% ; 35.2%	39.5% ; 64.8%	
Haltes garderies	Count	2 (0.7%)	2 (0.7%)	4 (1.5%)
	Mar. pct	3.1% ; 50.0%	1.0% ; 50.0%	
Nounou	Count		17 (6.2%)	17 (6.2%)
	Mar. pct		8.1% ; 100.0%	
Total	Count	65 (23.6%)	210 (76.4%)	275 (100.0%)

⁽¹⁾ Columns and rows percentages

When they are asked if they would have preferred to use another type of care, more than a third of parents in the sample are not satisfied with their current childcare solution, and say they would have like to use another type of childcare instead. When they don't use Public daycare, Public daycare is still the ideal type of care for parents of the sample:

		Education level of the mother		
		Low-SES No tertiary education	High-SES Tertiary education	Total
Assistantes maternelles	Count	2 (1.2%)	2 (1.2%)	4 (2.4%)
	Mar. pct ⁽¹⁾	3.5% ; 50.0%	1.9% ; 50.0%	
Autre	Count		1 (0.6%)	1 (0.6%)
	Mar. pct		0.9% ; 100.0%	
Crèches Asso	Count		1 (0.6%)	1 (0.6%)
	Mar. pct		0.9% ; 100.0%	
Crèches Privées	Count	2 (1.2%)	2 (1.2%)	4 (2.4%)
	Mar. pct	3.5% ; 50.0%	1.9% ; 50.0%	
Crèches Publiques	Count	49 (29.9%)	97 (59.1%)	146 (89.0%)
	Mar. pct	86.0% ; 33.6%	90.7% ; 66.4%	

Ideal ECEC type		Education level of the mother		
		Low-SES No tertiary education	High-SES Tertiary education	Total
Garde informelle	Count	2 (1.2%)	1 (0.6%)	3 (1.8%)
	Mar. pct	3.5% ; 66.7%	0.9% ; 33.3%	
Haltes garderies	Count		1 (0.6%)	1 (0.6%)
	Mar. pct		0.9% ; 100.0%	
Nounou	Count	2 (1.2%)	2 (1.2%)	4 (2.4%)
	Mar. pct	3.5% ; 50.0%	1.9% ; 50.0%	
Total	Count	57 (34.8%)	107 (65.2%)	164 (100.0%)

⁽¹⁾ Columns and rows percentages

All things being equal and controlling for SES, parents using daycare centers are 33 percentage points more likely to be satisfied with their childcare solution, while parents using private childminders are 9 pp less likely to be less satisfied. All things being equal, those using ECEC are more satisfied with their childcare solution than those who are not.

Table 2.1: Probability to be satisfied with the current childcare solution according to education level and ECEC used

	(1)	(2)
Constant	0.618*** [0.548, 0.687]	0.580*** [0.515, 0.645]
	0.034 (<0.001)	0.032 (<0.001)
Level of Education of the mother: High-SES	-0.039 [-0.122, 0.044]	
	0.041 (0.351)	
Use of Public Creche: Yes	0.332*** [0.262, 0.403]	
	0.034 (<0.001)	
Use of Assistante Maternelle: Yes	-0.098 [-0.220, 0.024]	
	0.060 (0.110)	
Use ECEC: Yes		0.129*** [0.048, 0.211]
		0.040 (0.003)
R2	0.093	0.018
R2 Adj.	0.088	0.016
Num.Obs.	494	494
Std.Errors	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

40 % of the parents that don't use ECEC wanted to use ECEC instead and thus consistently say they are unsatisfied with this situation. This is even more true for mothers born abroad (48% compared to 34% for mothers born in France). 40% of inactive mothers that care of the child themselves declared to be unsatisfied with this type of care.

1. 2.5.1 Information Dynamics

In this part, we review the main information variables that were presented during pregnancy in the last section, but this time as measured one year later, at the endline survey.

a) 2.5.1.1 Number of ECS known

First, on average, mothers have learnt 1.5 ECEC type between the interview during pregnancy and the one one year later. At endline, when asked to tell us all the ECEC type they knew, mothers knew 3.9 ECEC types on average. Low-SES mothers knew on average significantly less ECEC types than their more affluent counterparts: while high-SES mothers knew on average 4.4 ECEC types, low-SES mothers knew on average 3 of them ($t = -15.374$, $p\text{-value} < 2.2e-16$).

This is also true for mothers born abroad who knew 3.08 ECEC types on average regardless of their socioeconomic background ($t = -15.335$, $p\text{-value} < 2.2e-16$) and even truer for inactive mothers ($M_{inactive} = 2.84$, $t = -14.745$, $p\text{-value} < 2.2e-16$).

D. 2.6 Types of ECEC known

Not only low-SES mothers knew less ECEC types than high-SES mothers did, but low-SES mothers were still significantly more likely to know daycare centers and only daycare centers ($\%_{low-SES} = 10.7$, $\%_{high-SES} = 1.63$, $X\text{-squared} = 76.77$, $p\text{-value} < 2.2e-16$). This is also true for migrants mothers, that were even more likely to be in this situation ($\%_{born\ outside\ of\ France} = 11.5\%$), $\%_{born\ in\ France} = 0.68\%$ of native mothers were in this situation.

This is also the case for inactive mothers. 14.8% of them only knew only daycare centers, while it was the case for 1.6 % of active mothers. Besides, even when occasional daycare centers (*Haltes Garderies*) best fits the needs expressed by inactive mothers, these mothers were just as likely as active mothers to know occasional daycare center ($p\text{-value} = 0.7847$, $X\text{-squared} = 0.07466$, $\%_{inactive} = 32.8\%$, $\%_{active} = 31.4\%$). Overall, only about a third of mothers knew occasional daycare center.

E. 2.7 Cost of daycare

Similarly, low-SES mothers were significantly less likely to have an idea of the costs of a place, even if we restrict the analyses only to the ones that have never used ECEC at the time of the interview: the proportion were 63.1 % for low-SES mothers, compared to 43.3% for high-SES mothers.

F. 2.8 Subsidies

Similarly, low-SES mothers were also significantly less likely to know that ECEC costs are reduced by subsidies, even if we restrict the analyses to mothers that have never used ECEC ($\%_{low-SES\ knowing} = 78.7\%$, $\%_{high-SES\ knowing} = 92.8\%$, $X\text{-squared} = 51.684$, $p\text{-value} = 5.983e-12$). Again, the same holds for mothers born abroad and inactive mothers: this proportion is 77.1 % and 77.2 % of them respectively.

G. 2.9 C. Determinants of the intention to apply to ECEC during pregnancy, and actual intention

1. 2.9.1 Intention to apply to ECEC during pregnancy, level of education and migration background

As a brief reminder, during pregnancy, 81% of the surveyed parents expressed a desire to use ECEC after the birth for their future child. Low-SES parents are significantly less likely to be willing to use ECEC after birth compared to more affluent parents. However, even for the former, the proportion of parents wanting to use ECEC after birth is still 71% (compared to 87 % for educated parents). The difference of probability to be willing to use ECEC between low- and high SES parents of our sample is therefore 16 percentage points as measured during pregnancy. The result holds robust if considering the father's education level instead of mother's level of education as a measure for SES. Turning to migration background, mothers born in France are slightly more likely to want to use ECEC after birth compared to those born abroad, but the magnitude of the difference is smaller than by level of education. The gap is of 7 percentage points ($\%_{born\ in\ France} = 84$ and $\%_{born\ abroad} = 77\%$).

As displayed in figure 2.8, there is an interaction between the level of education and the place of birth of mothers. Education level significantly impacts the intention to use ECEC mostly when mothers are born *in France*. It is less the case when mothers are born abroad. At Endline, we find the same patterns on the probability to apply to ECEC: education level plays mostly a role in the probability to apply to ECEC when mothers are born in France.

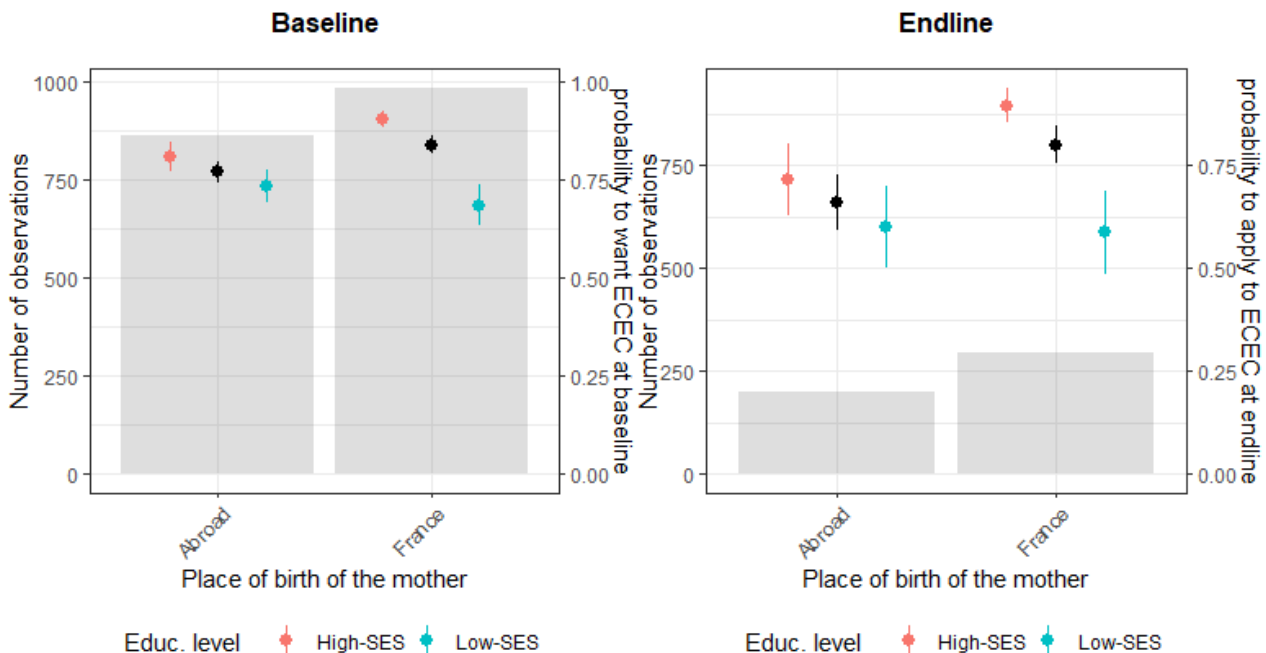


Figure 2.8: ECEC intention and application by place of birth and level of education of the mother

However, looking at the probability to use ECEC at endline (Figure 2.9) reveals a different story. While the effect of education by place of birth does not have much impact neither on the intention nor the probability to apply to ECEC for mothers born abroad, both variables are significantly related with the probability to use ECEC at endline. Mothers born abroad are significantly less likely to use ECEC at endline, even when controlling for the education level. Besides,

mothers in France with a low level of education appear to be more likely to use ECEC than low-educated mothers also born abroad, even though they are not more likely to apply to at least one ECEC.

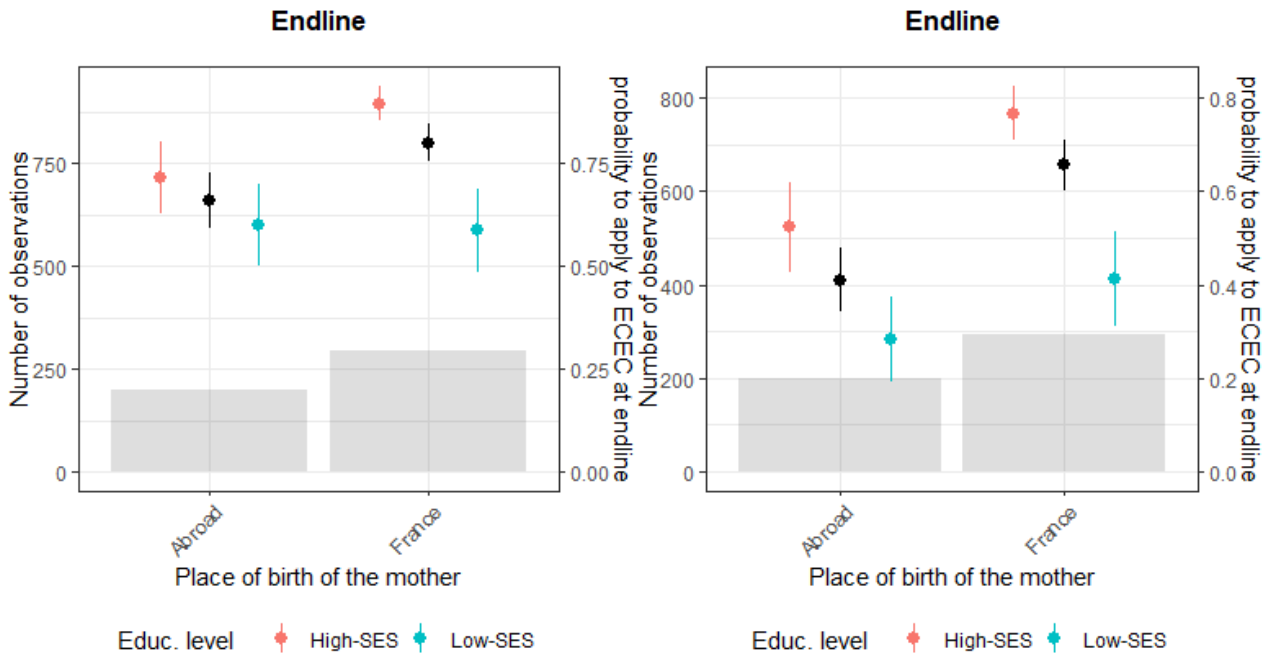


Figure 2.9: ECEC Application and use at endline by place of birth and level of education of the mother

The regressions in table 2.2 give us an estimate of the size of these disparities. While being born in France has no additional effect on the probability of wanting to use ECEC nor on the probability to apply to ECEC for low-SES in France, being born in France is correlated with a 14.7 percentage points increase in the probability of getting a spot and by 25 percentage point increase in the probability getting a slot among the mothers who applied to ECEC. For mothers born abroad, having attended tertiary education is associated with a 7 percentage points increase in the intention to use ECEC at baseline, with a 12 percentage points increase on the probability to apply to ECEC at endline, and a 20 percentage points increase to use ECEC at endline. Being born in France and having attended tertiary education is associated with a 16 percentage points increase in the probability of wanting to use ECEC at baseline, with a 27 percentage points increase on the probability to apply to ECEC at endline, and a 45 percentage points increase to use ECEC at endline. It must be emphasized that these coefficients are correlational by nature and should not be interpreted in a causal way.

Table 2.2: ECEC outcomes, Place of birth, and level of education of the mothers

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Born in France: Low-SES	-0.037 [-0.100, 0.027]	-0.009 [-0.158, 0.140]	0.147** [0.029, 0.264]	0.251*** [0.091, 0.411]

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
	0.031 (0.249)	0.073 (0.904)	0.058 (0.016)	0.078 (0.003)
Born abroad in France: High-SES	0.071*** [0.020, 0.123]	0.120** [0.009, 0.232]	0.202*** [0.082, 0.323]	0.193*** [0.063, 0.323]
	0.025 (0.008)	0.055 (0.035)	0.059 (0.002)	0.064 (0.005)
Born in France: High-SES	0.159*** [0.116, 0.201]	0.273*** [0.157, 0.388]	0.452*** [0.322, 0.582]	0.356*** [0.211, 0.502]
	0.021 (<0.001)	0.057 (<0.001)	0.064 (<0.001)	0.071 (<0.001)
R2	0.072	0.188	0.221	0.217
R2 Adj.	0.054	0.126	0.162	0.137
Num.Obs.	1849	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

a) 2.9.1.1 Beyond migration background: country of origin

So far, we considered migration background as an homogeneous construct. However, there may be substantial heterogeneity based on the world region of origin given that social norms regarding family models differ across countries. In this section, we explore the role of the world region of origin of the mother on the intention to use ECEC at baseline, the probability to have applied to at least one ECEC at endline, and the probability to use ECEC at endline.

Looking at the world region of origin reveals an interesting pattern as seen in Figure 2.10. It's not so much being born in France or not that significantly matters for the intention to use ECEC at baseline, but rather where mothers were born. Being born in Asia and in the Middle East (MENA) is significantly associated with a reduced probability of wanting to use ECEC at baseline.

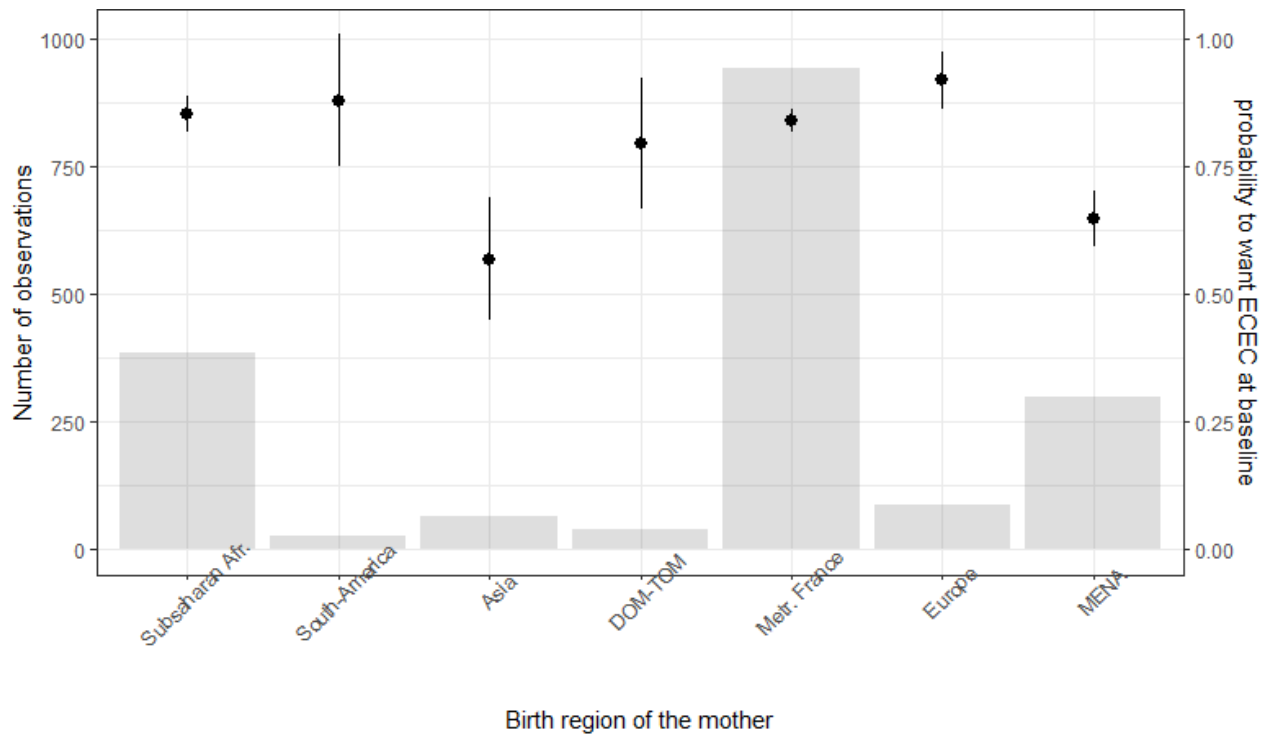


Figure 2.10: Intention to use ECEC at baseline and application at endline

Based on these findings, we can group mothers born in France, those born in Asia or MENA countries, and others. Figure 2.11 reveals that education level seems to play a significant role in the intention to use ECEC during pregnancy only for mothers born in France and those born either in Asia or in MENA countries. We reproduce the figures of last paragraph and observe the same patterns. While we see no heterogeneous effect of the level of education on the intention to use ECEC at baseline and the probability to apply to ECEC at endline for mothers born abroad but not in Asia or MENA countries, we see a significant effect of the level of education on the probability of accessing ECEC at endline.

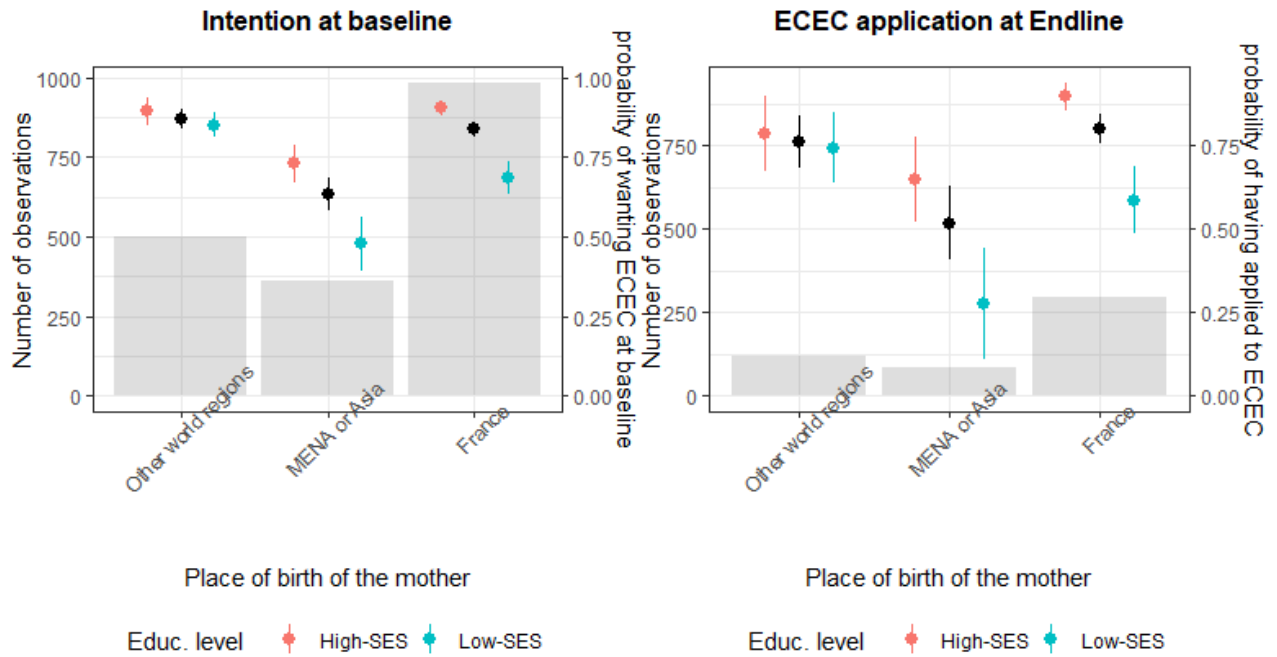


Figure 2.11: Intention to use ECEC at baseline and to have applied to ECEC at endline by world region of birth and level of education of the mother

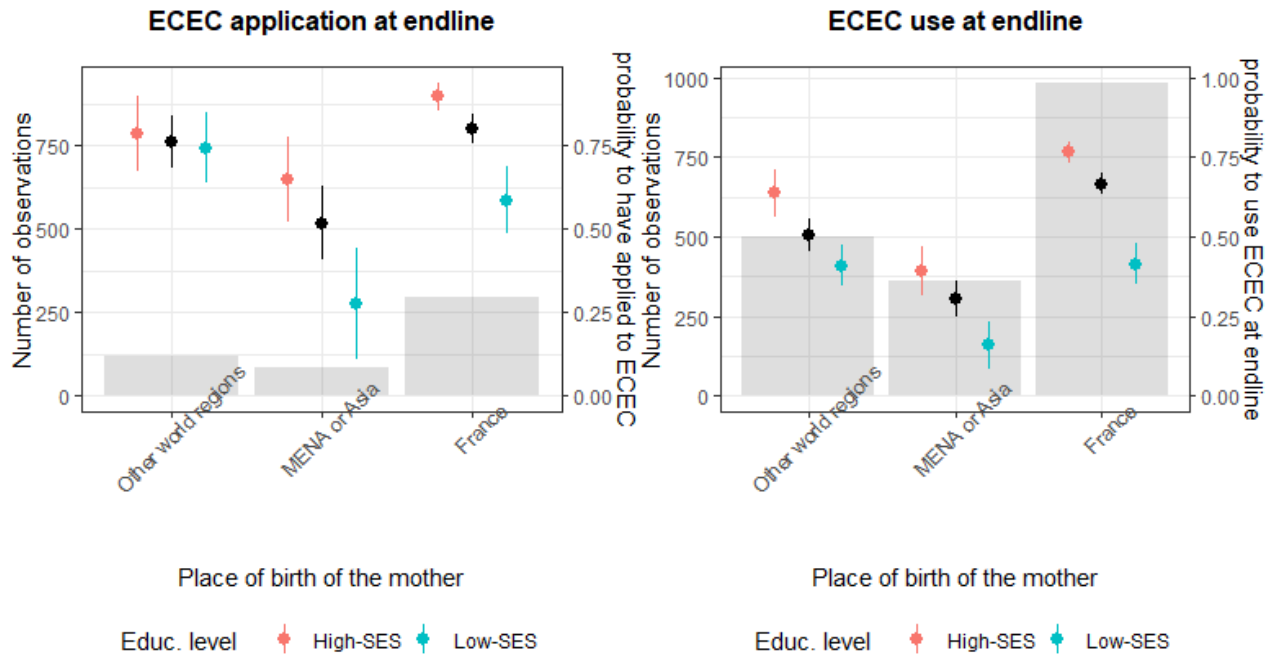


Figure 2.12: probability to use ECEC at endline by world region of birth and level of education of the mother

2. 2.9.2 Occupation at baseline

The mother's activity at baseline is highly predictive of the intention to use ECEC at baseline (Figure 2.13), while the father's activity is not. Being employed, a student, or a job seeker is associated with a higher intention to use ECEC. We observe the same patterns in the probability of having applied to ECEC at endline. However, when it comes to the probability of using ECEC at endline, only being employed seems to stand out as strongly related to this outcome. Students and job seekers are less likely to use ECEC at endline compared to employed mothers, and they become more similar to unemployed mothers in their probability to access ECEC. This is true even if they are more similar to employed mothers in their probability to apply to ECEC at endline.

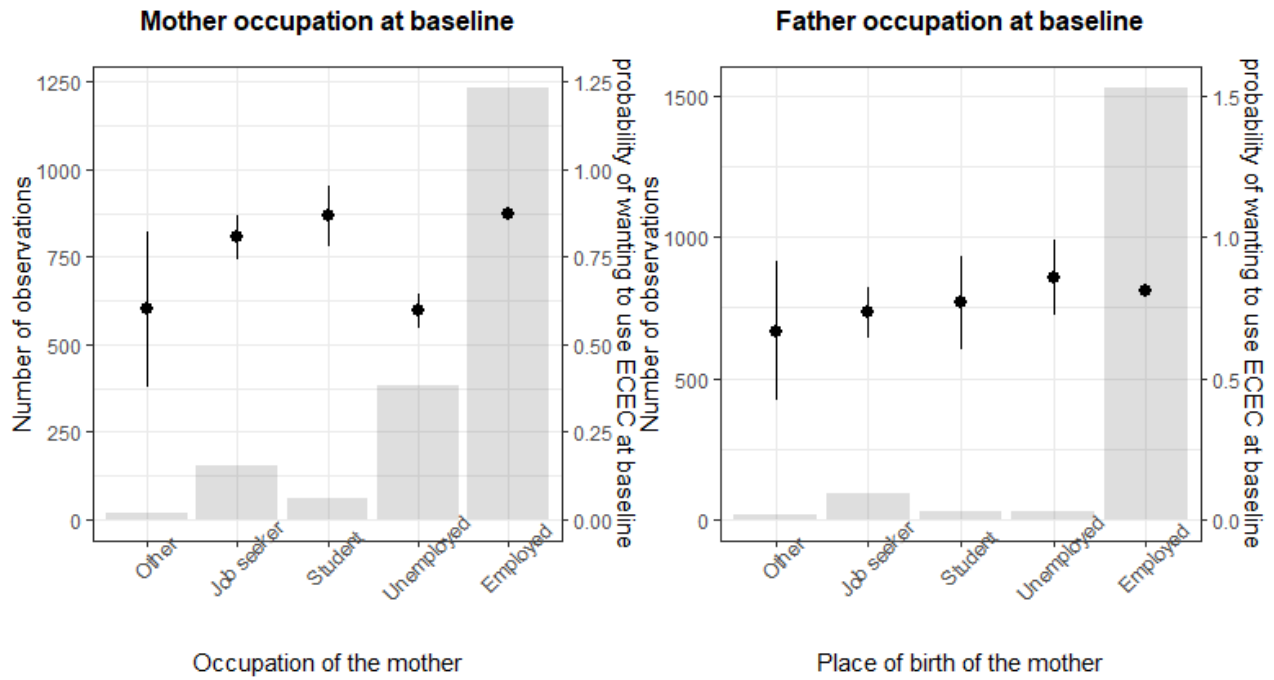


Figure 2.13: Intention to use ECEC by occupation of the both parents

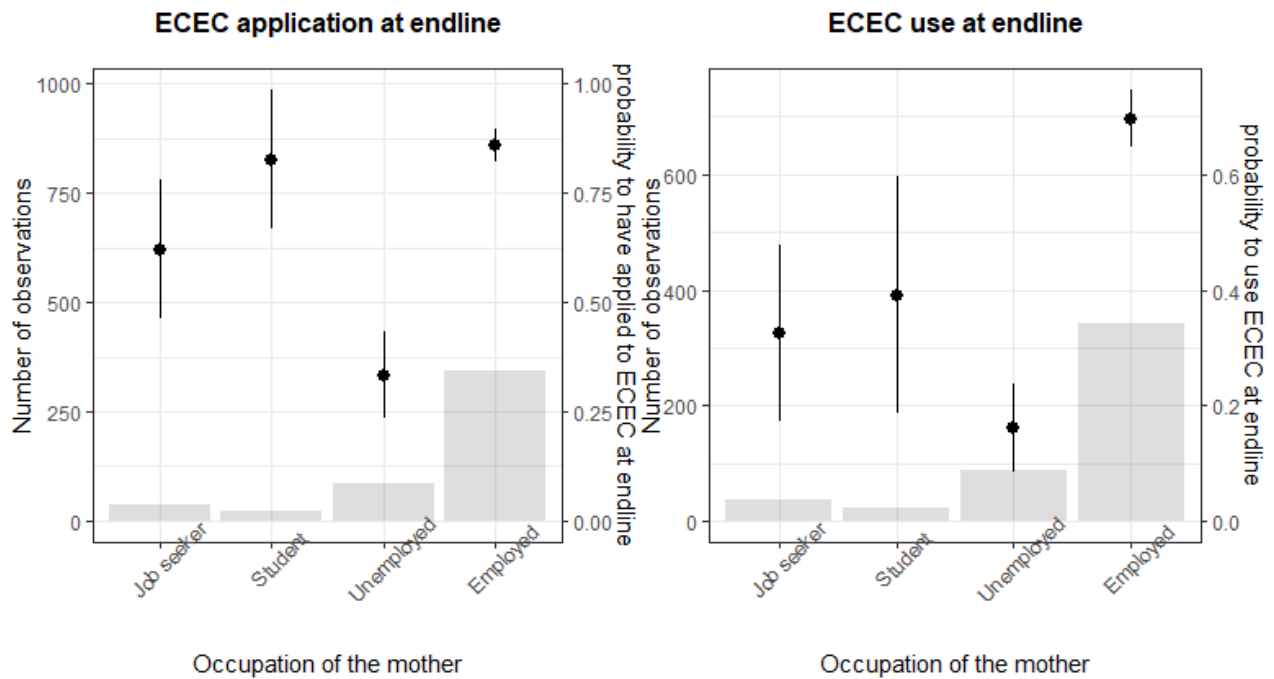


Figure 2.14: ECEC outcomes at endline by activity of the mother

3. 2.9.3 Other predictors of ECEC outcomes

a) 2.9.3.1 Level of information

In this section, we analyse the relationship between the level of information at baseline and ECEC outcomes. We will start by a broad measure of the level of information at baseline, and then specifically look at information revolving around the costs of ECEC.

b) 2.9.3.2 Broad level of information at baseline

We start by using an aggregate measurement of the level of information about ECEC at baseline. The level of information is broken down in four categories: very low, basic, good, and excellent. Looking at the relationship between this measure of level of information and ECEC outcomes displayed in Figures 2.15 and 2.16, we see an upward sloping trend: the more the mothers know about ECEC at baseline, the more likely they are to i) want to use ECEC at baseline, ii) apply to ECEC at endline, and iii) use ECEC at endline.

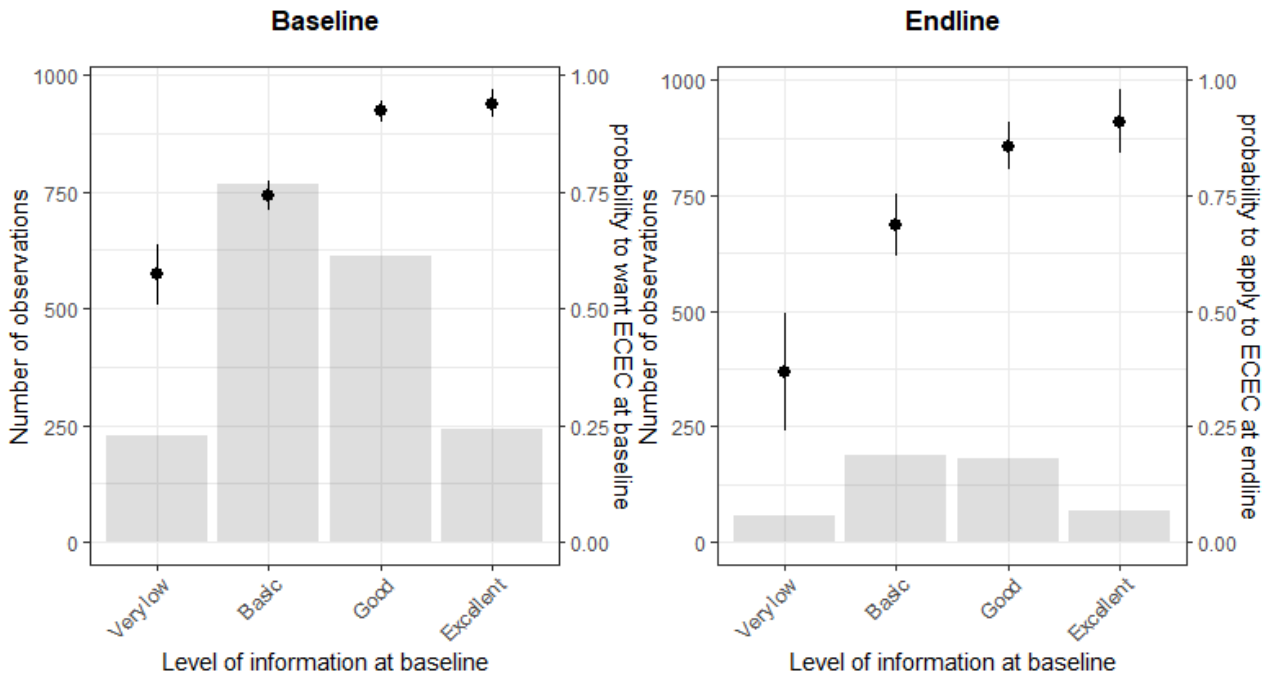


Figure 2.15: ECEC intention and application by place of birth and level of education of the mother

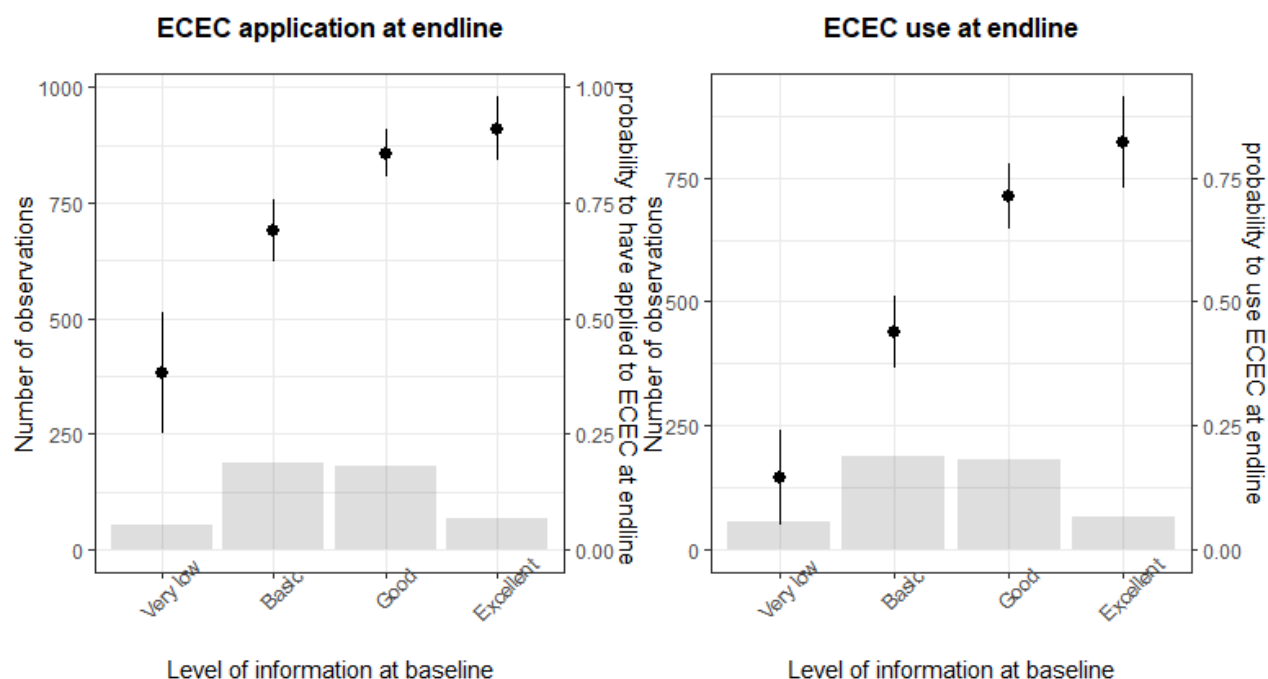


Figure 2.16: ECEC outcomes at endline by level of information

As shown in the previous section, the level of information is highly stratified by level of education and migration background. We can also imagine that families that have already used ECEC in the past are more informed about ECEC. Therefore, we include these variables in our regressions shown in Table 2.3: we look at the relationship between level of information at baseline at ECEC outcomes at endline, controlling for level of education (high-SES according to our definition), migration background, and previous ECEC use.

Table 2.3: Relation between level of information and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Level of information: Basic	0.137*** [0.040, 0.234]	0.278*** [0.155, 0.401]	0.207*** [0.089, 0.325]	0.218* [-0.009, 0.446]
	0.048 (0.007)	0.060 (<0.001)	0.058 (0.001)	0.111 (0.059)
Level of information: Good	0.292*** [0.199, 0.384]	0.387*** [0.222, 0.553]	0.380*** [0.216, 0.545]	0.328** [0.062, 0.594]
	0.045 (<0.001)	0.081 (<0.001)	0.081 (<0.001)	0.130 (0.017)
Level of information: Excellent	0.307*** [0.201, 0.413]	0.411*** [0.204, 0.619]	0.445*** [0.236, 0.655]	0.379*** [0.111, 0.648]
	0.052 (<0.001)	0.102 (<0.001)	0.103 (<0.001)	0.132 (0.007)
Level of Education of the mother: High-SES	0.073*** [0.031, 0.116]	0.129*** [0.035, 0.224]	0.169*** [0.063, 0.275]	0.085 [-0.030, 0.199]

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Born in France	0.021 (0.001)	0.046 (0.009)	0.052 (0.003)	0.056 (0.141)
	-0.036** [-0.067, -0.005]	0.009 [-0.082, 0.101]	0.114** [0.023, 0.205]	0.147*** [0.053, 0.241]
Have already used ECEC before	0.015 (0.024)	0.045 (0.840)	0.045 (0.016)	0.046 (0.003)
	0.105*** [0.068, 0.141]	0.082* [-0.005, 0.169]	0.094** [0.014, 0.175]	0.046 [-0.030, 0.122]
R2	0.018 (<0.001)	0.043 (0.063)	0.039 (0.023)	0.037 (0.229)
R2 Adj.	0.151	0.258	0.291	0.255
Num.Obs.	0.133	0.196	0.232	0.171
Std.Errors	1849	494	494	367
	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

We see that there is a positive significant relationship between the level of information at baseline and ECEC outcomes, controlling for the level of education of the mothers and migration background, and the level of information at baseline. For instance, compared to mothers with a very low level of information at baseline, mothers with an excellent level of information are 30 percentage points more likely to want to use ECEC at baseline, 41 percentage points more likely to have applied to ECEC at endline, and 45 percentage points more likely to use ECEC at endline. Among the mothers that applied to ECEC, those with an excellent level of information are 38 percentage points more likely to use ECEC at endline than those with a very low level of information at baseline.

(1) 2.9.3.2.1 Perceived cost of daycare

The perceived costs of ECEC constitute a significant piece of information for parents to consider when deciding whether or not to enroll their children in ECEC. The lack of knowledge or an overestimation of the costs associated with ECEC can negatively impact the probability of wanting to use ECEC, particularly for families with limited financial resources. Thus, in this section, we start by looking at the relationship between the unawareness of ECEC costs, ECEC outcomes, and SES. Then, for parents who had an estimation of ECEC costs, we investigate the association between the perceived costs of ECEC, ECEC outcomes, and SES. We hypothesize that being unaware of the costs of ECEC is negatively correlated with ECEC outcomes, especially for low-SES families. Furthermore, we anticipate that higher perceived costs of ECEC will be negatively associated with ECEC outcomes, particularly for families with low SES who face greater financial constraints and may therefore be more sensitive to the costs of ECEC.

However, it is important to clarify that these analyses do not aim to evaluate the accuracy of mothers' perception of ECEC costs. Instead, our focus is on determining whether mothers have any understanding of these costs, regardless of accuracy, and if so, how the perceived costs influence their decision-making. The rationale behind this is that their perceptions of the costs, rather than the actual costs, will likely matter for their decision-making.

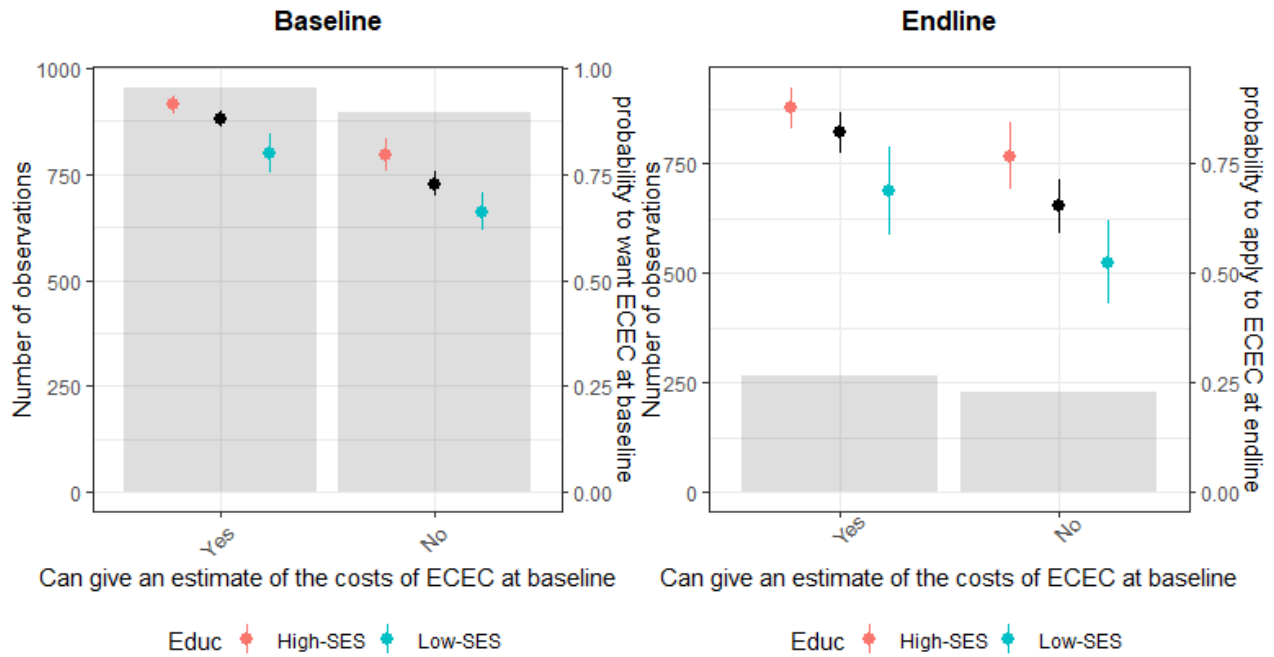


Figure 2.17: Awareness of ECEC costs, ECEC intention and application by place of birth and level of education of the mother

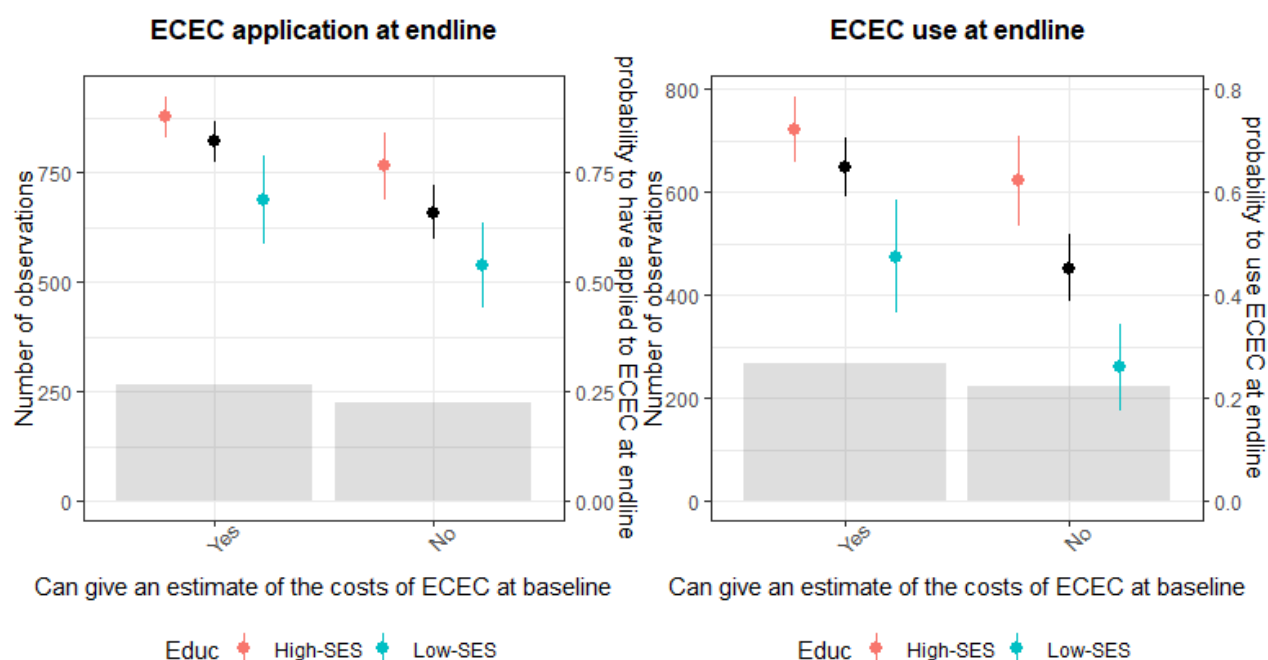


Figure 2.18: ECEC outcomes at endline by level of information

We see that not “knowing”⁴ the cost of ECEC seems negatively correlated with ECEC outcomes. However, there do not seem to be an interaction between the level of education (or being born in France or not - not shown here) and not “knowing” the cost of ECEC. We therefore run regressions *ceteris paribus*, controlling for the level of education of mothers and their migration background.

Table 2.4: Relation between not knowing the costs and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Have no idea of ECEC costs	-0.122*** [-0.172, -0.071] 0.025 (<0.001)	-0.120*** [-0.191, -0.050] 0.035 (0.002)	-0.104** [-0.186, -0.023] 0.040 (0.014)	-0.033 [-0.105, 0.040] 0.036 (0.366)
The mother is born in France	0.012 [-0.020, 0.044] 0.016 (0.436)	0.063 [-0.034, 0.160] 0.048 (0.193)	0.187*** [0.085, 0.289] 0.050 (<0.001)	0.185*** [0.095, 0.276] 0.044 (<0.001)
Level of Education of the mother: High-SES	0.111*** [0.070, 0.153]	0.191*** [0.102, 0.280]	0.244*** [0.141, 0.347]	0.142** [0.035, 0.249]

⁴ We use this word for simplicity, but it is actually a simplification: the estimate here is more about being able to give an estimate of the costs than knowing the costs here, which would imply that estimate one gives is what ECEC would actually cost them.

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
R2	0.020 (<0.001)	0.044 (<0.001)	0.051 (<0.001)	0.052 (0.011)
R2 Adj.	0.087	0.196	0.228	0.217
Num.Obs.	1849	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

Controlling for the level of education of mothers and their migration background, we see that mothers who do not know the costs of ECEC are 12 percentage points less likely to want to apply to ECEC and to effectively apply, and 10 percentage points less likely to use ECEC at endline. If proven to be causal by future studies, this association makes sense from a theoretical point of view. As we explained in previous sections, not knowing the cost of ECEC can have asymmetrical consequences depending on socioeconomic status. While high-SES families could be confident they can afford the costs no matter what they are (or nearly), low-SES families will be more reluctant to apply because they “cannot end up with another bill they cannot pay”.

We also see no effect of not knowing the costs of ECEC on the probability of using ECEC among mothers who applied. This makes sense from a theoretical point of view: cost perception matters more for decision-making of whether or not to apply than for actual ECEC use once applied.

As discussed above, one additional indication supporting this hypothesis would be to check the existence of a negative relationship between perceived costs and ECEC outcomes. Even though, again, this analysis would be far from being causal, Figure 2.19 displays these relationships. As predicted, we see that the negative relationship between perceived costs and the probability of wanting to use ECEC only holds for low-SES mothers, who are also more likely to be on tight budget constraints. We observe the same relationship at endline on the probability of having applied to ECEC.

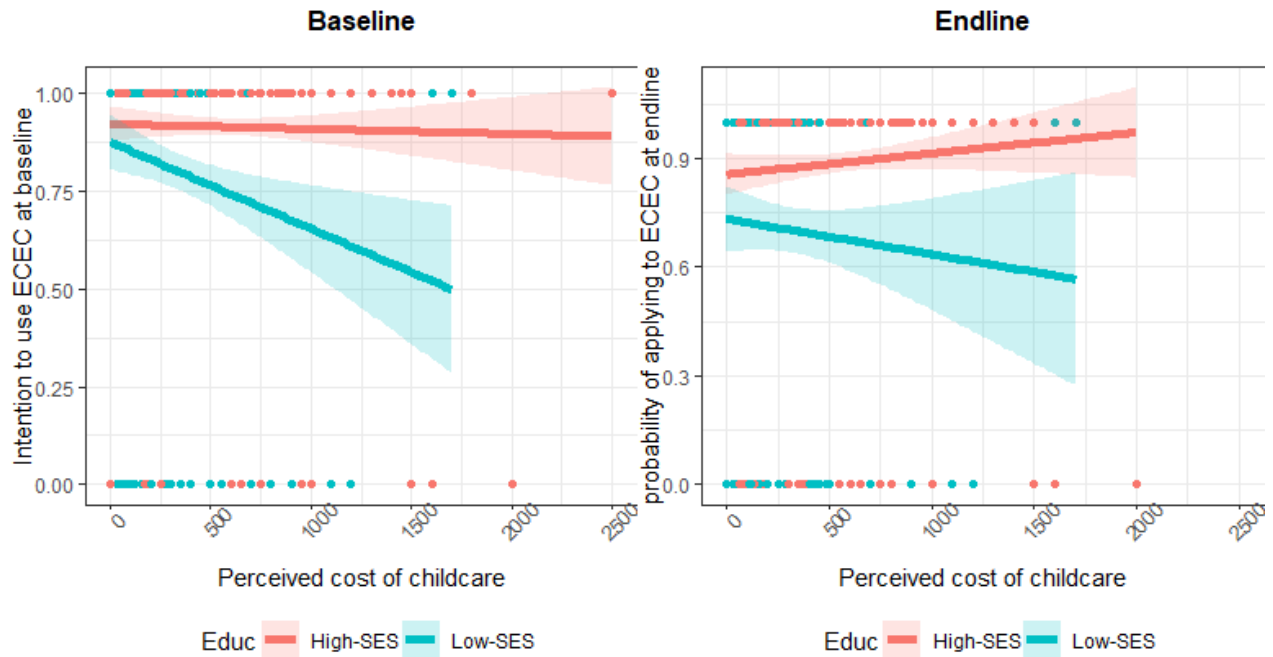


Figure 2.19: Perceived cost, education level and ECEC outcomes

c) 2.9.3.3 Perceptions of ECEC

(1) 2.9.3.3.1 Perceived Accessibility

Another factor that may influence ECEC decision-making is the perceived fit between working hours and ECEC opening hours. If one’s working schedule is perceived not to match ECEC hours (e.g., working on night shifts), it is less likely that the person will want to use ECEC. This more likely to be the case for low-SES families, who are more likely to work in jobs with non-standard hours, and also less likely to have the resources to hire a second caregiver to take care of the child when ECEC is closed.

Consistently with these predictions, Table 2.5 displays the results of the regressions, allowing for an interaction between mothers’ level of education and perceived match between ECEC opening hours and working schedule. We lack power to detect significant effects, but the coefficients are in the expected direction. Being one of the 127 mothers that perceived ECEC opening hours as incompatible with their work schedules is associated with a 11 percentage points decrease in the intention to use ECEC at baseline only for low-SES mothers (NS), a 15 percentage points decrease in the probability of having applied to ECEC at endline, but again only for low-SES mothers (NS), and a significant 22 percentage points decrease in the probability of using ECEC at endline, again only for low-SES mothers. We see no evidence of any negative impact of this perceived mismatch for high-SES mothers.

Table 2.5: Relation between not knowing the costs and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
High-SES x ECEC and working schedule match	0.124*** [0.070, 0.179]	0.202*** [0.101, 0.303]	0.240*** [0.118, 0.361]	0.132** [0.008, 0.257]

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
	0.027 (<0.001)	0.050 (<0.001)	0.060 (<0.001)	0.061 (0.038)
Low-SES x ECEC and working schedule don't match	-0.109 [-0.255, 0.038]	-0.149 [-0.421, 0.123]	-0.226** [-0.432, -0.020]	-0.188 [-0.436, 0.060]
	0.072 (0.141)	0.133 (0.273)	0.101 (0.033)	0.122 (0.133)
High-SES x ECEC and working schedule don't match	0.085* [-0.009, 0.178]	0.331*** [0.164, 0.498]	0.368*** [0.105, 0.631]	0.188 [-0.064, 0.439]
	0.046 (0.074)	0.082 (<0.001)	0.129 (0.008)	0.123 (0.139)
The mother is born in France	0.049** [0.005, 0.094]	0.103** [0.006, 0.200]	0.220*** [0.120, 0.321]	0.193*** [0.110, 0.277]
	0.022 (0.031)	0.047 (0.037)	0.049 (<0.001)	0.041 (<0.001)
R2	0.078	0.204	0.228	0.208
R2 Adj.	0.053	0.137	0.163	0.117
Num.Obs.	1362	460	460	339
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

d) 2.9.3.4 Social norms

As displayed in Figure 2.20, we observe a strong difference in the share of family members and friends who also use ECEC depending on socioeconomic status and place of birth of mothers. High-SES mothers and mothers born in France in the sample are more likely to have family and friends who use or have used ECEC.

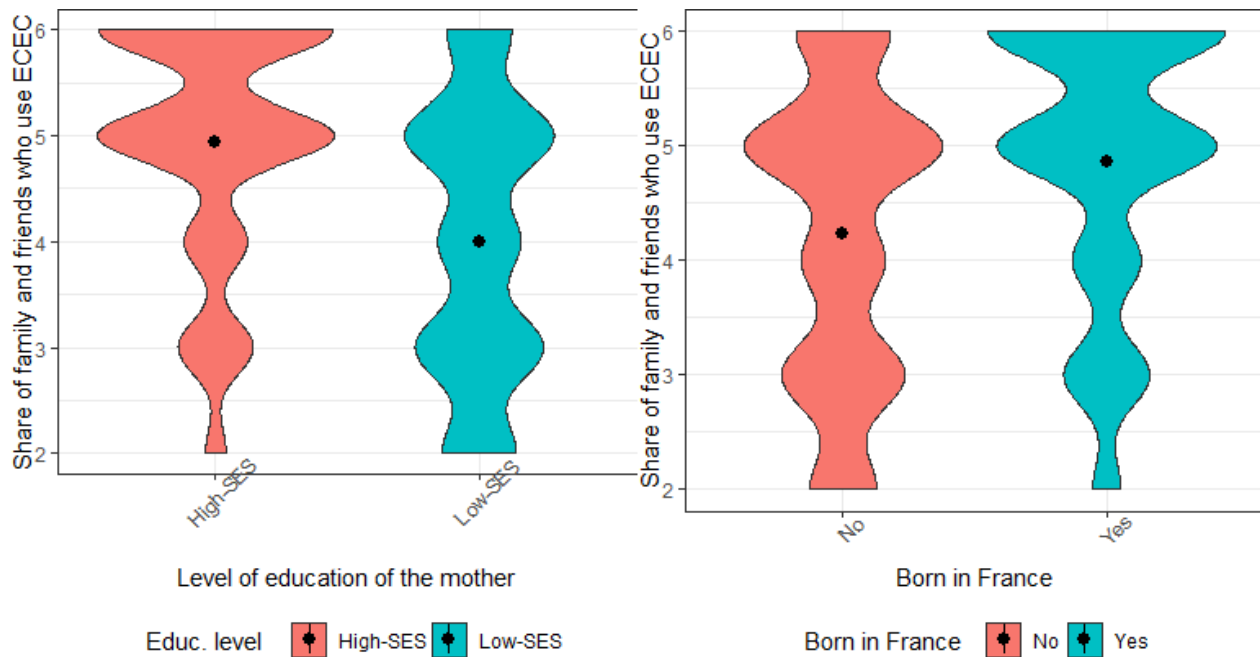


Figure 2.20: Perceived share of relatives who use ECEC by SES

The perceived norms within mothers' social circle may explain the aforementioned disparities in ECEC outcomes based on SES and migration background. Firstly, having family members and friends who also use ECEC makes it more likely for mothers to consider and choose to resort to ECEC when making childcare decisions. Secondly, it signals positive social norms. Conversely, if mothers perceive that their family and friends are opposed to using ECEC, they may conform to this (perceived) prevailing social norm. Lastly, having friends and family who have successfully navigated the ECEC system increases the probability of accessing key information (such as the importance of applying early), thereby increasing the probability of applying more efficiently to secure a spot. In this section, we therefore investigate the relationships between the perceived share of family and friends who use ECEC, ECEC outcomes, and SES.

Figures X and X displays the relationship between the perceived share of family and friends who use ECEC, SES, and ECEC outcomes. We see the expected correlation: the more family members and friends use and used ECEC, the more likely the mother is i) to be willing to use ECEC, ii) to have applied to it at endline, and iii) to use it at endline.

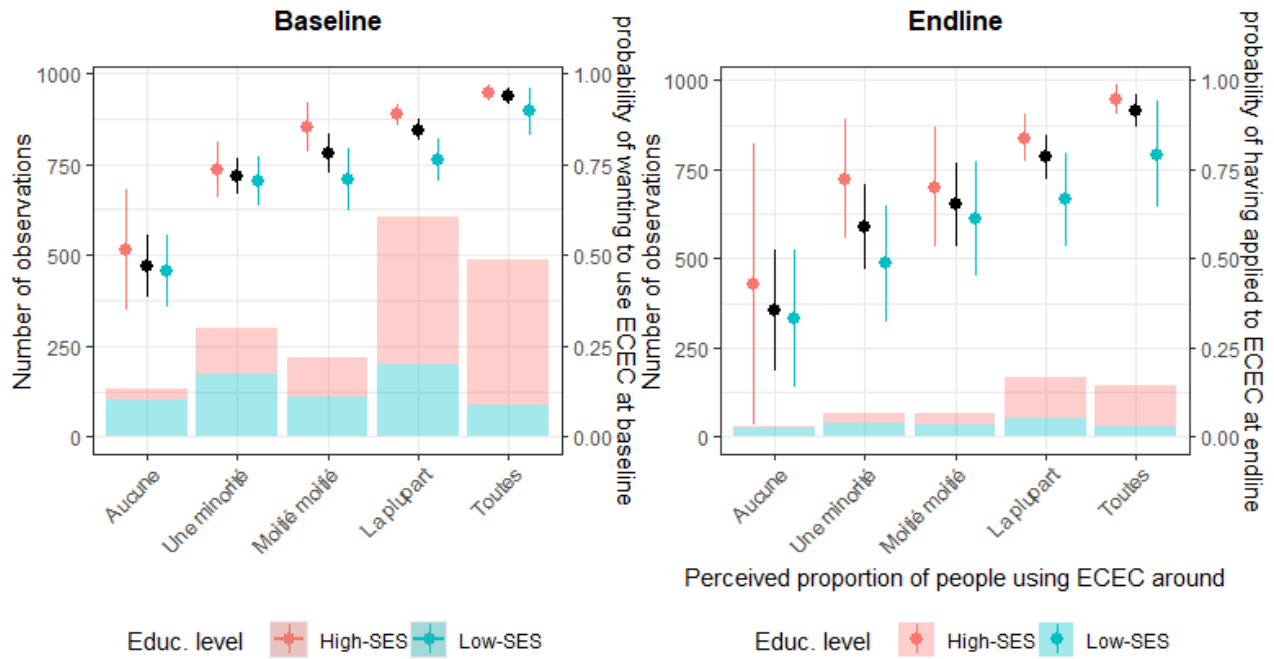


Figure 2.21: ECEC outcomes by perceived amount of family and friends that uses ECEC

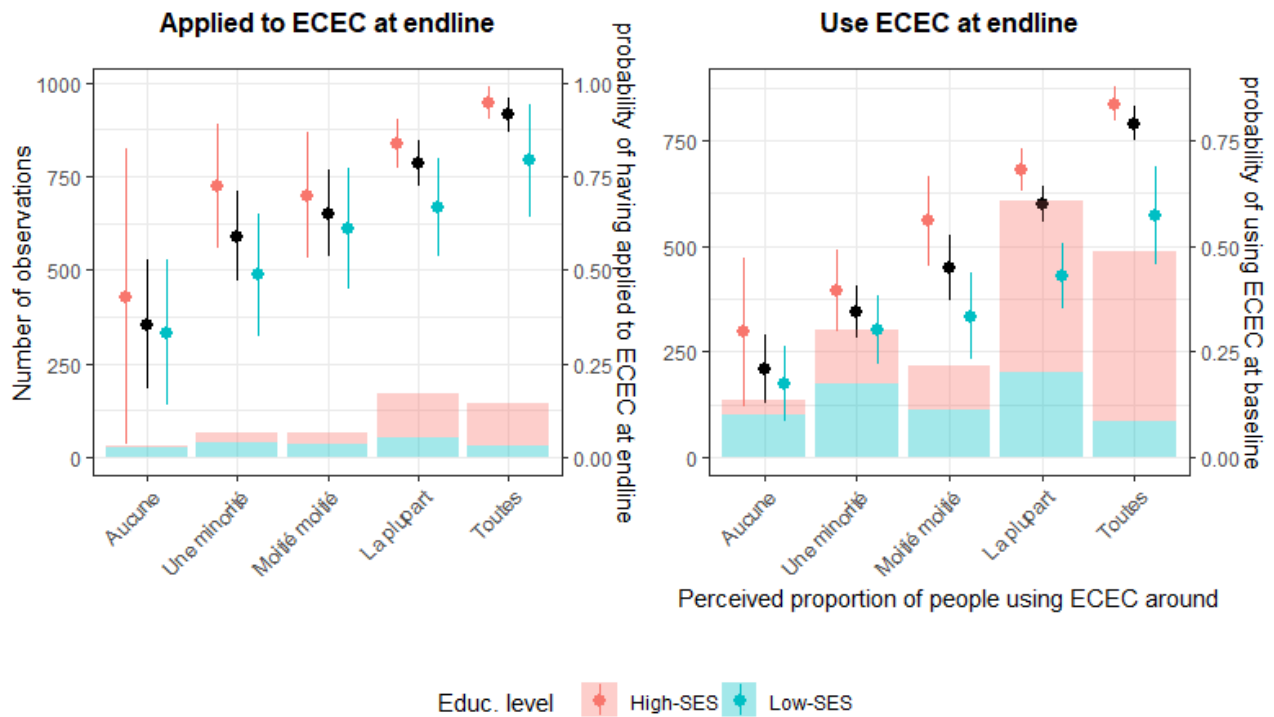


Figure 2.22: ECEC outcomes at endline by perceived amount of family and friends that uses ECEC

Table 2.6 displays results of the regressions. To increase power, we grouped mothers in three categories instead of five depending on the share of family and friends using ECEC: “Low” (small share of users), “Half-Half” and “High” (high share). Compared to mothers with few people around them using ECEC facilities, those with many people utilizing these structures are 20 percentage points more likely to be willing to use them at baseline, 24 percentage points more likely of having applied at endline, and 30 percentage points more likely to use ECEC themselves, controlling for education level and migration background. Among the mothers that applied, those with many people utilizing these structures are also 21 percentage points more likely to use ECEC at endline, controlling for level of education and migration background.

Table 2.6: ECEC outcomes by perceived mismatch with social norms

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Norms3 = Half-Half	0.112*** [0.059, 0.166]	0.117** [0.006, 0.228]	0.163** [0.039, 0.286]	0.166 [-0.055, 0.388]
	0.026 (<0.001)	0.054 (0.039)	0.061 (0.012)	0.109 (0.136)
Norms3 = High	0.204*** [0.152, 0.256]	0.240*** [0.121, 0.359]	0.300*** [0.182, 0.417]	0.210*** [0.059, 0.361]
	0.026 (<0.001)	0.058 (<0.001)	0.058 (<0.001)	0.074 (0.008)
FrenchYNBaselineFrench	0.014 [-0.019, 0.047]	0.072 [-0.021, 0.165]	0.190*** [0.096, 0.285]	0.183*** [0.106, 0.260]
	0.016 (0.396)	0.046 (0.123)	0.046 (<0.001)	0.038 (<0.001)
EducSup	0.085*** [0.047, 0.123]	0.150*** [0.053, 0.248]	0.188*** [0.083, 0.292]	0.113** [0.005, 0.222]
	0.019 (<0.001)	0.048 (0.004)	0.051 (<0.001)	0.053 (0.041)
R2	0.105	0.221	0.267	0.239
R2 Adj.	0.087	0.160	0.209	0.158
Num.Obs.	1849	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

As a robustness check, but also as an attempt to isolate the influence of perceived social norms, we now turn to another variable: the perceived number of family members and friends who believe that ECEC is harmful for children. Consistent with our previous findings, we should find that the more parents perceive that many people around them believe ECEC are harmful to children, the less they intend to use them themselves, apply them, and use them.

Results are displayed in Figures 2.23 and 2.24. We find the expected pattern.

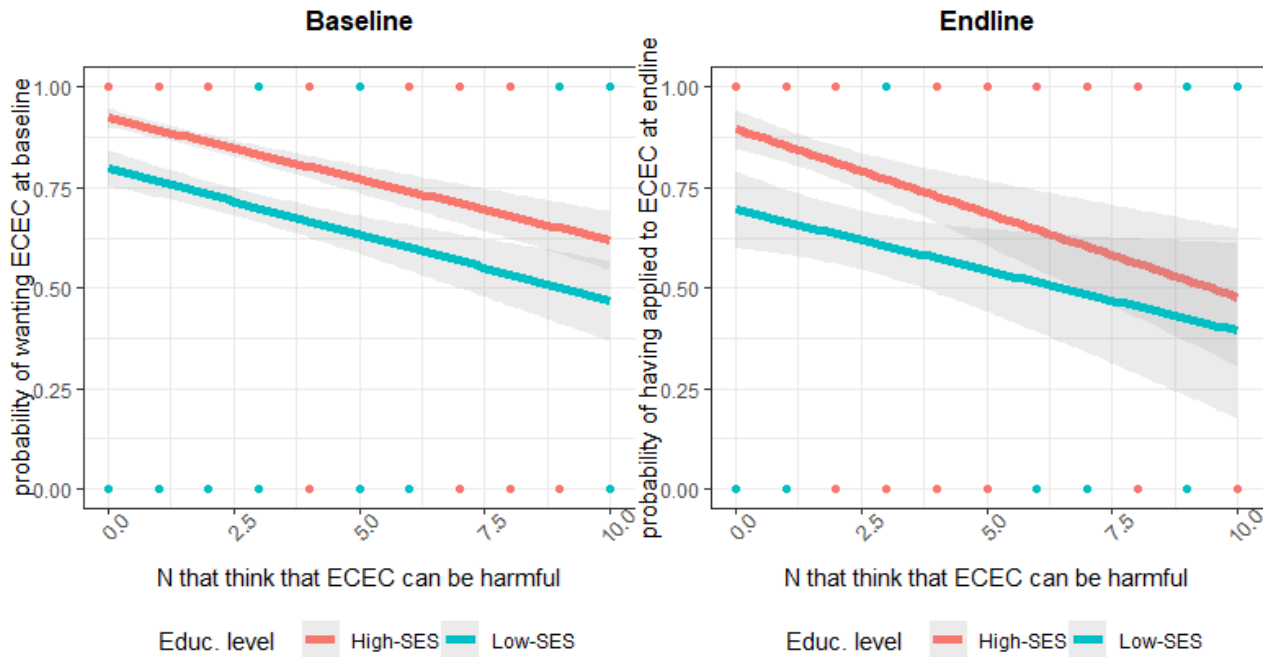


Figure 2.23: Intention and probability to apply to ECEC by perceived amount of family members and friends that think ECEC is bad for children

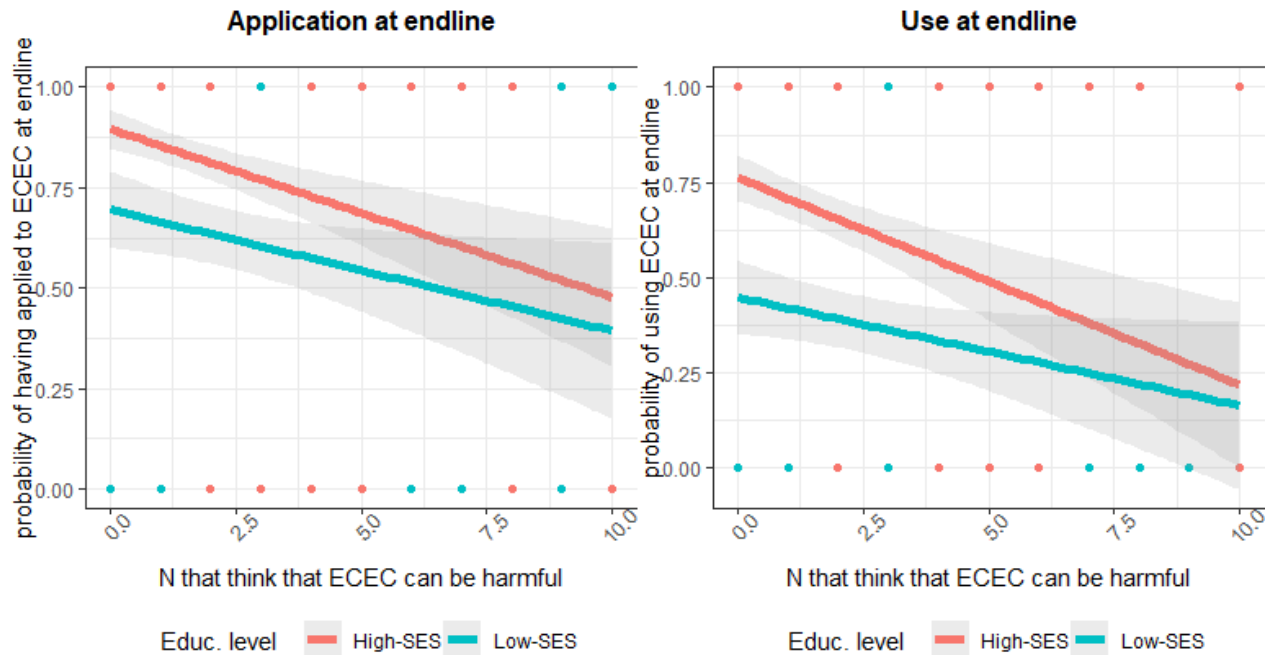


Figure 2.24: ECEC outcomes at endline by perceived number of family and friends that think ECEC is harmful for children

When examining the regression coefficients presented in Table 2.7, it is observed that for every additional person who is perceived to believe that ECEC can be harmful to children, there is an associated decrease of 3 percentage points in ECEC outcomes, whether it is the probability of wanting to use ECEC at baseline, the probability of applying, or the probability of using ECEC at endline. This relationship holds true even after controlling for factors such as the educational level and migration background of the mother.

Table 2.7: Perceived number of family and friends that think ECEC is harmful for children, SES, and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Number of people who think that ECEC can be harmful	-0.029*** [-0.039, -0.019] 0.005 (<0.001)	-0.034*** [-0.058, -0.011] 0.011 (0.005)	-0.036*** [-0.054, -0.018] 0.009 (<0.001)	-0.018* [-0.040, 0.003] 0.010 (0.087)
High-SES	0.112*** [0.072, 0.153] 0.020 (<0.001)	0.161*** [0.073, 0.249] 0.043 (<0.001)	0.205*** [0.100, 0.310] 0.052 (<0.001)	0.110* [-0.008, 0.228] 0.058 (0.066)
The mother is born in France	0.020 [-0.020, 0.060] 0.020 (0.319)	0.055 [-0.048, 0.158] 0.050 (0.284)	0.173*** [0.065, 0.281] 0.053 (0.003)	0.171*** [0.083, 0.259] 0.043 (<0.001)

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
R2	0.112	0.196	0.228	0.209
R2 Adj.	0.093	0.131	0.165	0.125
Num.Obs.	1694	464	464	354
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

e) *2.9.3.5 Private beliefs in the impact of ECEC on children*

Finally, we turn to mothers' beliefs regarding the impact of ECEC on children. We expect that the less a parent believes that ECEC is beneficial for children, the less likely they will be to want to use ECEC, apply to it, and use it at endline. These relationships are displayed in Table 2.8. Consistently with what was found in the two last sections, we find that holding the belief that ECEC can be harmful for children is associated with a 19,5 percentage points decrease in the probability of wanting to use it at baseline, a 23 percentage points decrease in the probability of having applied to it at endline, and a 21 percentage points decrease in the probability of using it at endline, controlling for level of education and migration background of mothers.

Table 2.8: Relation between perceived impact of ECEC on children, SES, and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
The mother thinks ECEC can be harmful for the child	-0.195*** [-0.237, -0.153]	-0.232*** [-0.308, -0.157]	-0.210*** [-0.308, -0.111]	-0.066 [-0.221, 0.089]
	0.021 (<0.001)	0.037 (<0.001)	0.048 (<0.001)	0.076 (0.395)
High-SES	0.131*** [0.088, 0.174]	0.199*** [0.105, 0.293]	0.250*** [0.143, 0.357]	0.146** [0.037, 0.254]
	0.021 (<0.001)	0.046 (<0.001)	0.052 (<0.001)	0.053 (0.010)
The mother is born in France	0.047*** [0.015, 0.080]	0.101** [0.007, 0.196]	0.221*** [0.118, 0.323]	0.196*** [0.107, 0.284]
	0.016 (0.006)	0.046 (0.036)	0.050 (<0.001)	0.043 (<0.001)
R2	0.107	0.225	0.247	0.218
R2 Adj.	0.090	0.166	0.189	0.138
Num.Obs.	1849	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

f) 2.9.3.6 Perceived non-monetary costs

Consequences on children, perceived social norms, and perceived direct out-of-pocket costs of ECEC are not the only factors that could influence childcare decision-making. Mothers may also consider the non-monetary costs of using ECEC versus caring for their child themselves, such as the impact on their careers, wages, and well-being. Looking at the associations between SES and these perceived impacts, we find that high-SES mothers are more likely to perceive significant costs associated with staying at home to care for their child compared to their less privileged counterparts. These costs include negative impacts on their wages, well-being, and career. Therefore, we can expect that, the higher these perceived non-monetary costs (or the higher the non-monetary benefits of using ECEC), the more likely families are to utilize ECEC after birth. This section is dedicated to analyzing these relationships.

We allow for interactions between SES and these perceived non-monetary costs in our analyses because we may expect that mothers may weigh these impacts differently depending on their SES. We review each factor in this order: i) perceived impact on wages, ii) perceived impact on well-being, and iii) perceived impact on career.

Table 2.9 first examines the relationship between the perceived costs of staying at home on wages and the outcomes of ECEC. We find that low-SES mothers who perceive negative costs for staying at home on their wages are 24 percentage points more likely to be willing to use ECEC after birth, and 18 percentage points more likely to have applied to ECEC at endline compared to low-SES mothers who do not hold such beliefs. We see no evidence of a relationship between a perceived negative impact on wages and ECEC use at endline for low-SES mothers. These relationships seem to be stronger for high-SES mothers. Compared to high-SES mothers who do not perceive that taking care of the child themselves would have a negative impact on their wages, high-SES mothers who have this perception are 18 percentage points more likely to be willing to utilize ECEC at baseline, 21.5 percentage points more likely to have applied to ECEC at endline, and 23 percentage points more likely to be using ECEC at endline.

Table 2.9: Perceived impact on mothers' wages and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Low-SES mothers who perceive a negative impact of staying at home on wages	0.238*** [0.159, 0.317]	0.183** [0.001, 0.364]	0.071 [-0.083, 0.226]	-0.063 [-0.234, 0.109]
	0.039 (<0.001)	0.089 (0.049)	0.076 (0.356)	0.084 (0.462)
High-SES mothers who perceive no negative impact of staying at home on wages	0.134*** [0.063, 0.205]	0.162** [0.007, 0.317]	0.134* [-0.026, 0.294]	0.029 [-0.155, 0.213]
	0.035 (<0.001)	0.076 (0.041)	0.078 (0.098)	0.090 (0.752)
High-SES mothers who perceive a negative impact of staying at home on wages	0.318*** [0.254, 0.383]	0.377*** [0.222, 0.533]	0.365*** [0.206, 0.524]	0.124 [-0.025, 0.273]
	0.032 (<0.001)	0.076 (<0.001)	0.078 (<0.001)	0.073 (0.101)
The mother is born in France	0.012 [-0.022, 0.046]	0.064 [-0.023, 0.150]	0.186*** [0.089, 0.283]	0.188*** [0.097, 0.280]
	0.017 (0.473)	0.042 (0.142)	0.048 (<0.001)	0.045 (<0.001)
R2	0.125	0.220	0.243	0.221
R2 Adj.	0.107	0.159	0.183	0.139
Num.Obs.	1849	494	494	367

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

Table 2.10 then examines the relationships between the perceived costs of staying at home on mothers' well-being and ECEC outcomes. We find that low-SES mothers who perceive negative costs for staying at home on their wages are 22-percentage points more likely to be willing to use ECEC after birth. There is no evidence of a relationship between a perceived negative impact on mothers' well-being and the probability of applying to ECEC at the endline, nor with the probability of ECEC use at endline for low-SES mothers. Again, these relationships seem to be stronger for high-SES mothers. Compared to high-SES mothers who do not perceive that taking care of the child themselves would have a negative impact on their well-being, high-SES mothers who have this perception are 12-percentage points more likely to be willing to utilize ECEC at baseline, 11.4-percentage points more likely to have applied to ECEC at endline, and 18.6-percentage points more likely to be using ECEC at endline.

Table 2.10: Perceived impact on mothers' well-being and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Low-SES mothers who perceive a negative impact of staying at home on their well-being	0.224*** [0.175, 0.273]	0.064 [-0.147, 0.274]	0.085 [-0.121, 0.291]	0.068 [-0.063, 0.199]
	0.024 (<0.001)	0.103 (0.542)	0.101 (0.406)	0.064 (0.297)
High-SES mothers who perceive no negative impact of staying at home on their well-being	0.143*** [0.100, 0.186]	0.189*** [0.073, 0.305]	0.224*** [0.100, 0.349]	0.126** [0.014, 0.239]
	0.021 (<0.001)	0.057 (0.002)	0.061 (<0.001)	0.055 (0.029)
High-SES mothers who perceive a negative impact of staying at home on their well-being	0.262*** [0.225, 0.300]	0.303*** [0.208, 0.398]	0.410*** [0.271, 0.549]	0.227*** [0.098, 0.357]
	0.018 (<0.001)	0.047 (<0.001)	0.068 (<0.001)	0.064 (0.001)
The mother is born in France	0.027 [-0.009, 0.064]	0.072 [-0.025, 0.169]	0.183*** [0.076, 0.290]	0.179*** [0.085, 0.273]
	0.018 (0.132)	0.048 (0.141)	0.053 (0.001)	0.046 (<0.001)
R2	0.097	0.189	0.236	0.224
R2 Adj.	0.079	0.126	0.176	0.141
Num.Obs.	1849	494	494	367

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

Finally, table 2.11 examines the relationship between the perceived costs of staying at home to take care of the child themselves on mothers' career and ECEC outcomes. We find that low-SES mothers who perceive negative costs for staying at home on their career experience a 16-percentage point increase in their desire to use ECEC after birth. We see no evidence of a relationship between a perceived negative impact on mothers' career and the probability to have applied to ECEC at the endline, nor with the probability ECEC use at endline for low-SES mothers. Again, these relationships seem to be stronger for high-SES mothers. Compared to high-SES mothers who do not perceive that taking care of the child themselves would have a negative impact on their careers high-SES mothers who have this perception are 11 percentage points more likely to be willing to utilize ECEC at baseline, 7 percentage points more likely to have applied to ECEC at endline, and 7 percentage points more likely to be using ECEC at endline.

Table 2.11: Perceived impact on mothers' career and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Low-SES mothers who perceive a negative impact of staying at home on their career	0.161*** [0.078, 0.244]	0.100 [-0.048, 0.247]	0.079 [-0.088, 0.245]	0.093 [-0.075, 0.261]
	0.041 (<0.001)	0.072 (0.178)	0.082 (0.343)	0.082 (0.268)
High-SES mothers who perceive no negative impact of staying at home on their career	0.134*** [0.072, 0.196]	0.213*** [0.086, 0.340]	0.254*** [0.109, 0.400]	0.175** [0.019, 0.331]
	0.030 (<0.001)	0.062 (0.002)	0.071 (0.001)	0.076 (0.029)
High-SES mothers who perceive a negative impact of staying at home on their career	0.243*** [0.189, 0.296]	0.280*** [0.161, 0.399]	0.324*** [0.198, 0.450]	0.193*** [0.051, 0.336]
	0.026 (<0.001)	0.058 (<0.001)	0.062 (<0.001)	0.070 (0.009)
The mother is born in France	0.035** [0.000, 0.069]	0.080* [-0.013, 0.174]	0.201*** [0.098, 0.304]	0.193*** [0.102, 0.284]
	0.017 (0.048)	0.046 (0.090)	0.050 (<0.001)	0.045 (<0.001)
R2	0.092	0.188	0.224	0.219
R2 Adj.	0.074	0.125	0.163	0.136
Num.Obs.	1849	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Intention at
Baseline

Application at
Endline

Use at Endline

Use conditional on
having applied

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

g) 2.9.3.7 Trust in ECEC

Another factor that could influence families' decision-making is their trust in ECEC. We expect that the more a family trusts ECEC, the more likely they will be to want to use ECEC, apply to it, and use it at endline. Bivariate analyses reveal that high-SES mothers are more likely to trust daycare centers than their less privileged counterparts. This section is dedicated to analyzing the relationships between trust in ECEC, SES, and ECEC outcomes.

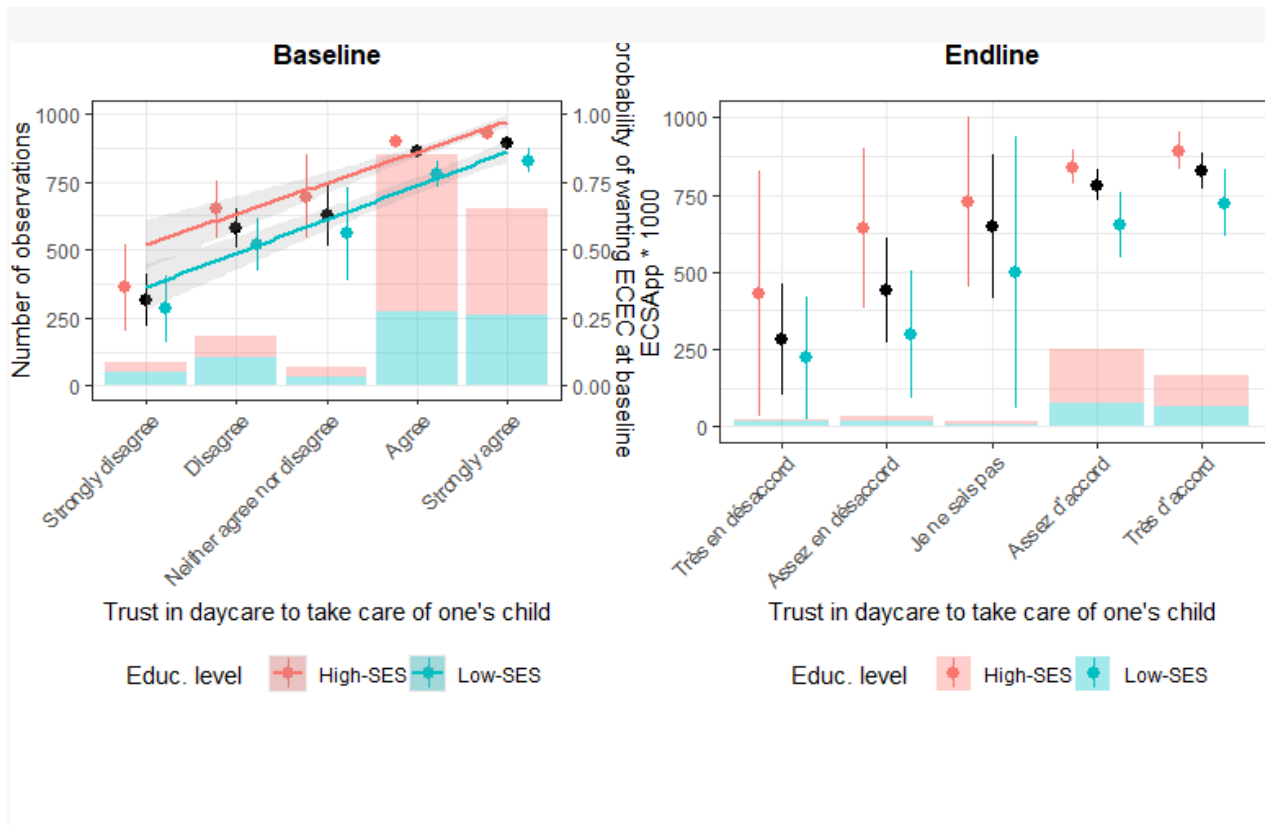


Figure 2.25: Trust in daycare and ECEC outcomes

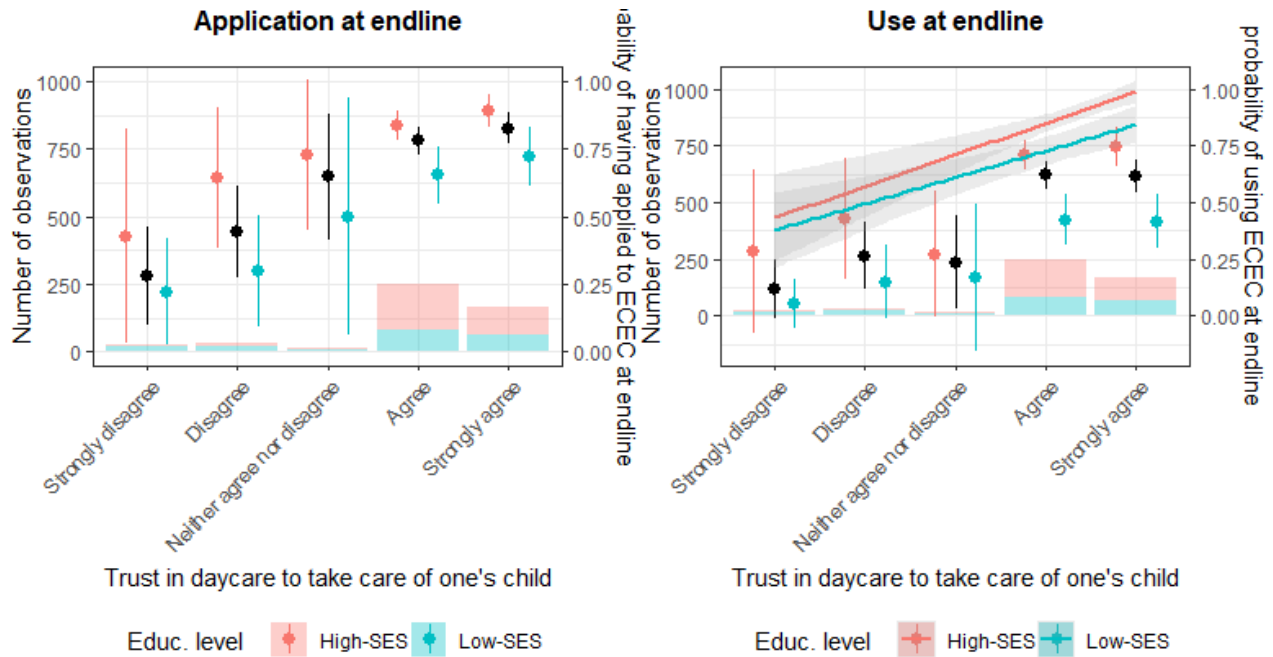


Figure 2.26: Trust in daycare and ECEC outcomes

We see in Figures 2.25 and 2.26 that the relationship between trust in daycare centers and ECEC outcomes is not homogeneous across SES, especially for use. Therefore, we allow for interaction effects between SES and trust in daycare.

Table 2.12 shows the coefficients of the regression results controlling for migration background. Compared to low-SES mothers who do not trust ECEC to take care of their child, low-SES mothers who do are 34 percentage points more likely to want to use ECEC at baseline and 43 percentage points more likely to apply to ECEC than others. They are also 34 percentage points more likely to use ECEC at endline. The relationship is somewhat weaker for high-SES mothers. Compared to high-SES mothers who do not trust ECEC to take care of their child, high-SES mothers who do are 31 percentage points more likely to want to use ECEC at baseline, 16.3 percentage points more likely to apply to ECEC than others, and 31 percentage points more likely to use ECEC at endline.

Table 2.12: Relation between trust in daycare, SES and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Low-SES mothers who trust daycare centers	0.341*** [0.250, 0.431]	0.431*** [0.282, 0.580]	0.344*** [0.235, 0.453]	0.236* [-0.003, 0.474]
	0.044 (<0.001)	0.073 (<0.001)	0.053 (<0.001)	0.117 (0.053)
High-SES mothers who do not trust daycare centers	0.112** [0.009, 0.215]	0.387*** [0.132, 0.642]	0.238** [0.029, 0.446]	0.122 [-0.207, 0.451]
	0.050 (0.034)	0.125 (0.004)	0.102 (0.027)	0.161 (0.455)

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
High-SES mothers who trust daycare centers	0.427*** [0.350, 0.504] 0.038 (<0.001)	0.555*** [0.406, 0.705] 0.073 (<0.001)	0.556*** [0.437, 0.674] 0.058 (<0.001)	0.373*** [0.107, 0.640] 0.130 (0.007)
The mother is born in France	0.045*** [0.012, 0.078] 0.016 (0.009)	0.106** [0.016, 0.197] 0.044 (0.023)	0.220*** [0.118, 0.323] 0.050 (<0.001)	0.190*** [0.101, 0.278] 0.043 (<0.001)
R2	0.167	0.249	0.270	0.237
R2 Adj.	0.150	0.190	0.212	0.157
Num.Obs.	1843	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

h) 2.9.3.8 Preference for later care

One additional factor that could differ between families is their preference for an early entry in ECEC (e.g., before their child is one year-old) compared to a later entry. This preference for later care could influence ECEC outcomes through at least two main channels. On the one hand, families who prefer later care might be less likely to want to use ECEC if they perceive that applying after the first few months brings near to zero their chances of securing a place. On the other hand, because of the way the ECEC system works (see section XX for more details), applying after the first year could greatly reduce their chances of getting a slot. In this section, we thus document this preference for later care and its relationship with SES and ECEC outcomes.

Figures 2.27 and 2.28 graphically show the relationship between preference for later care and ECEC outcomes. We find the expected negative relationship between the preference for using ECEC only after the first year and ECEC outcomes. We can also see that this relationship is not homogeneous across SES, especially for use. Therefore, we allow for interaction effects between SES and the preference for later care in our regression models.

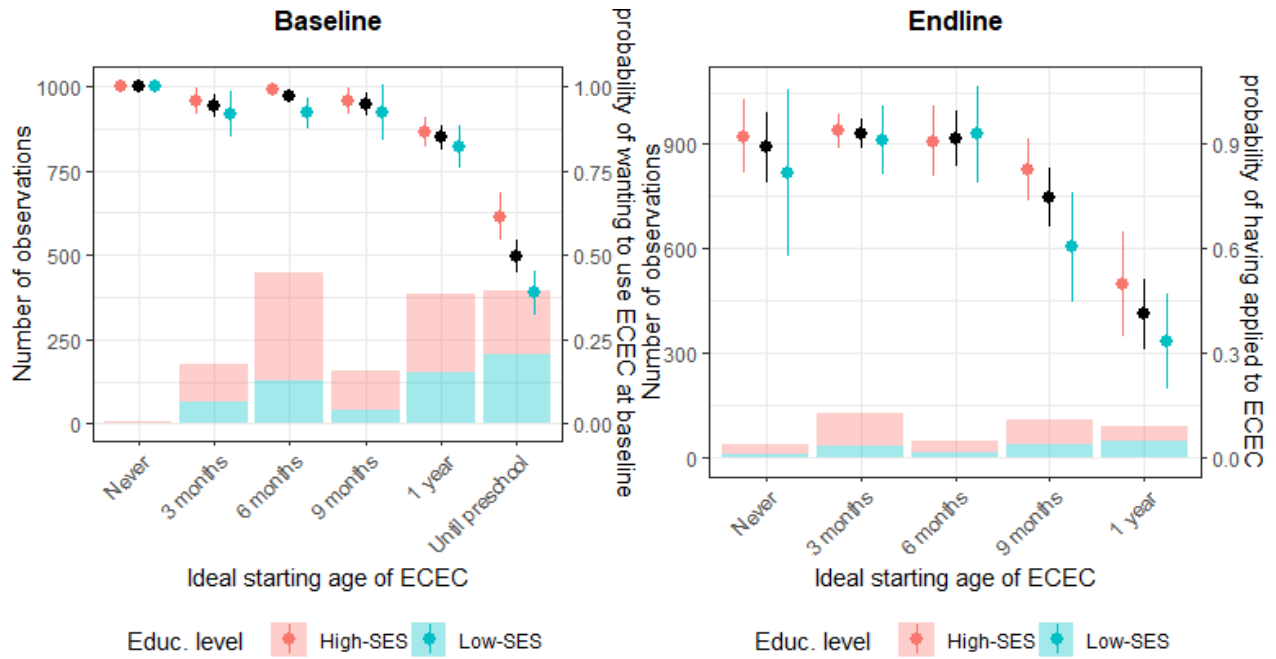


Figure 2.27: Intention to use ECS by age of entry wanted and SES

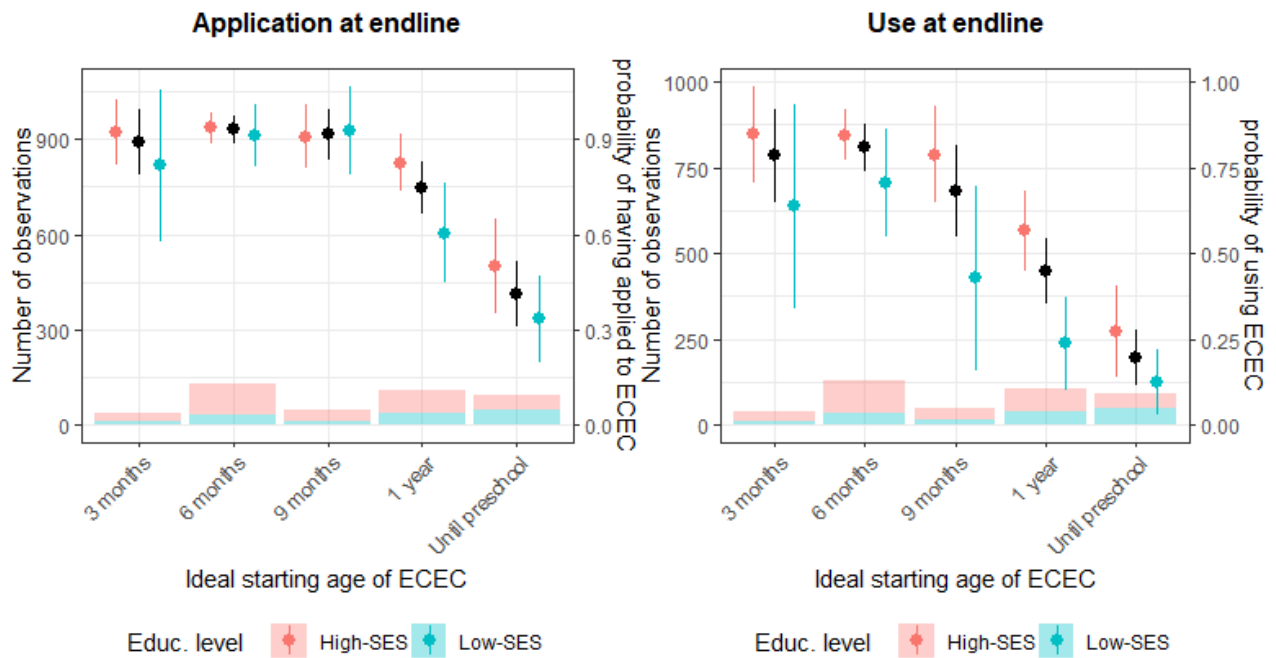


Figure 2.28: ECEC outcomes by age of entry wanted and SES

Table 2.13 presents the results of the regression analyses. An interaction term between SES and the preference for later care was included because figures 2.27 and 2.28 suggest that preference may impact low- and high-SES groups differently.

The results indicate that the association between preference for later care and ECEC outcomes is strongest among low-SES mothers. Compared to low-SES mothers who prefer using ECEC only after their child turns one year old, low-SES mothers who prefer using ECEC before are 33 percentage points more likely to want to use ECEC, 41 percentage points more likely to apply to ECEC than others, and 42 percentage points more likely to use ECEC at endline, even when controlling for level of education and migration background. The relationship is weaker for high-SES mothers. Compared to high-SES mothers who prefer using ECEC only after their child turns one year old, high-SES mothers who prefer using ECEC before are 11 percentage points more likely to want to use ECEC, 11 percentage points more likely to apply to ECEC than others, and 3 percentage points more likely to use ECEC at endline, even when controlling for level of education and migration background. Interestingly, among the mothers who prefer using ECEC early, there is no significant difference between low- and high-SES mothers in terms of willingness to use ECEC at baseline and probability to apply to ECEC at endline. Yet, high-SES mothers are 15 percentage points more likely than low-SES mothers to use ECEC at endline.

Table 2.13: Relation between not knowing the costs and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Low-SES mothers who prefer using ECEC only after their child turns one year old	-0.333*** [-0.408, -0.257]	-0.410*** [-0.528, -0.293]	-0.419*** [-0.595, -0.244]	-0.254** [-0.498, -0.010]
	0.037 (<0.001)	0.058 (<0.001)	0.086 (<0.001)	0.120 (0.042)
High-SES mothers who prefer using ECEC only before their child turns one year old	0.047** [0.008, 0.085]	0.040 [-0.046, 0.126]	0.152** [0.007, 0.297]	0.116 [-0.028, 0.261]
	0.019 (0.019)	0.042 (0.349)	0.071 (0.040)	0.071 (0.110)
High-SES mothers who prefer using ECEC only after their child turns one year old	-0.162*** [-0.220, -0.105]	-0.155** [-0.278, -0.031]	-0.188*** [-0.325, -0.051]	-0.115 [-0.268, 0.039]
	0.028 (<0.001)	0.061 (0.016)	0.067 (0.009)	0.075 (0.137)
The mother is born in France	0.007 [-0.033, 0.048]	0.070 [-0.020, 0.159]	0.192*** [0.098, 0.287]	0.179*** [0.092, 0.267]
	0.020 (0.714)	0.044 (0.123)	0.046 (<0.001)	0.043 (<0.001)
R2	0.186	0.279	0.356	0.310
R2 Adj.	0.167	0.214	0.298	0.225
Num.Obs.	1594	424	424	322
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

4. 2.9.4 Formal and Informal care opportunities

In this last section, we investigate how the availability of both informal care opportunities and formal care opportunities (i.e. ECEC coverage rate) could influence the relationship between SES and ECEC outcomes. But again, these analyses are only correlational by nature and should not be interpreted in a causal way.

a) 2.9.4.1 Informal care opportunities

First, to the extent that families have a preference for informal care (e.g. care by grand-parents) and that can easily access this type of care as much as needed, they may be less likely to want to use ECEC.

Figures 2.29 and 2.30 depict the relationships between having the opportunity to access informal care as much as needed or not, SES, and ECEC outcomes we find in our sample.

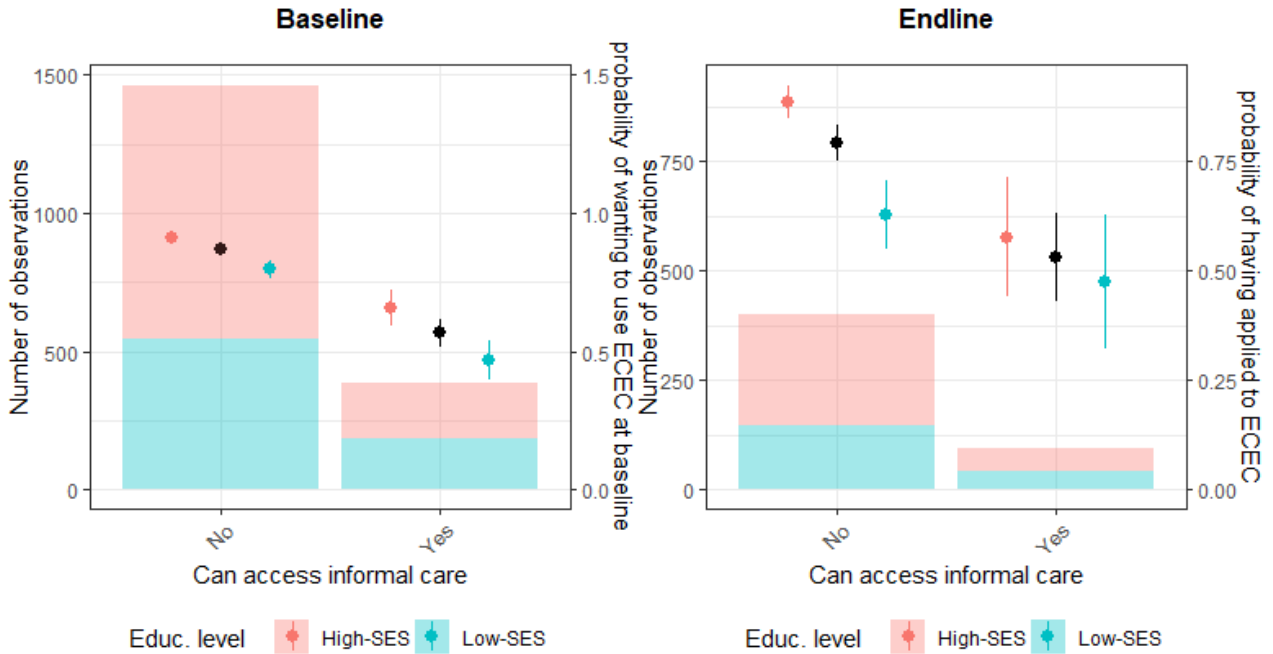


Figure 2.29: Intention to use ECS by access to informal care and SES

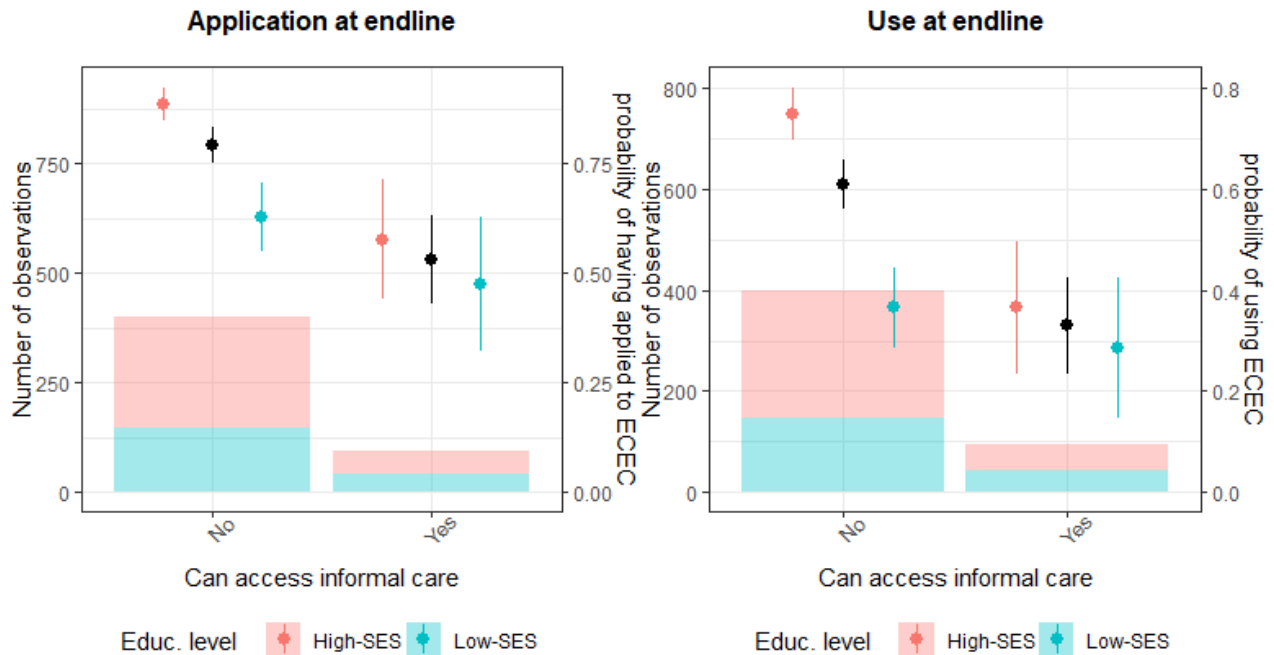


Figure 2.30: ECEC outcomes by access to informal care and SES

Table 2.14 presents the results of the regression analyses. We included an interaction term between SES and availability of informal care as much as needed because figures 2.29 and 2.30 suggest that it may impact low- and high-SES groups differently, especially for application and use. Unlike families that have limited access to informal care, we do not observe significant differences in the probability of application and use based on SES for families that do have access.

The coefficients align with this graphical interpretation. We observe a mere 9 percentage point difference between low and high SES families with access to informal care in the probability of applying to ECEC at endline, and a 1 percentage point difference in the probability of using ECEC. However, there is a 17-percentage point difference between these two groups in the probability of wanting to use ECEC at baseline. This suggests that the opportunity to access informal care may have a greater influence on behaviors than attitudes. When examining mothers who have limited access to informal care, we observe the expected disparities based on SES. Compared to low SES families without access to informal care, high SES families without access to informal care are only 8 percentage points more likely to want to use ECEC at baseline. However, they are 21 percentage points more likely to have applied at endline, and 29 percentage points more likely to be using ECEC at endline. If we restrict the analyses to families who have applied to ECEC, these families are still 17.5 percentage points more likely to use ECEC at endline.

Additional analyses in the appendix, including also the place of birth in the interaction term, suggest that the differences between high and low-SES families with access to informal care are primarily driven by low-SES mothers born in the Middle East and Asia. In comparison to low-SES families with mothers born in France and without access to informal care, low-SES families with mothers born in the Middle East or in Asia and with access to informal care are 59 percentage points more likely to want to use ECEC at baseline, 23 percentage points more likely to have applied at endline, and 36 percentage points more likely to be using ECEC at endline. For low-SES families with mothers born abroad but outside of the Middle East and Asia and with access to informal care, these coefficients are 25 percentage points, 22 percentage points, and 9 percentage points, respectively.

Table 2.14: Relation between access to informal care and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
Low-SES families who have access to informal care as much as needed	-0.351*** [-0.414, -0.289]	-0.204** [-0.368, -0.040]	-0.144 [-0.329, 0.042]	0.012 [-0.219, 0.242]
	0.030 (<0.001)	0.080 (0.016)	0.091 (0.124)	0.113 (0.919)
High-SES families who do not have access to informal care as much as needed	0.083*** [0.041, 0.125]	0.210*** [0.112, 0.309]	0.292*** [0.176, 0.407]	0.176*** [0.067, 0.285]
	0.020 (<0.001)	0.048 (<0.001)	0.057 (<0.001)	0.053 (0.002)
High-SES families who have access to informal care as much as needed	-0.182*** [-0.246, -0.118]	-0.110 [-0.263, 0.044]	-0.136** [-0.270, -0.002]	-0.101 [-0.265, 0.063]
	0.032 (<0.001)	0.075 (0.155)	0.066 (0.046)	0.080 (0.219)
The mother is born in France	0.075*** [0.045, 0.105]	0.111** [0.023, 0.199]	0.230*** [0.138, 0.322]	0.197*** [0.108, 0.285]
	0.015 (<0.001)	0.043 (0.015)	0.045 (<0.001)	0.043 (<0.001)
R2	0.161	0.236	0.283	0.243
R2 Adj.	0.144	0.176	0.226	0.162
Num.Obs.	1849	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

b) 2.9.4.2 Coverage rate

Finally, we investigate how the availability of formal care opportunities (i.e. ECEC coverage rate) could influence the relationship between SES and ECEC outcomes.

Figures 2.31 and 2.32 depict the relationships between the ECEC coverage rate in the city, SES, and ECEC outcomes we find in our sample.

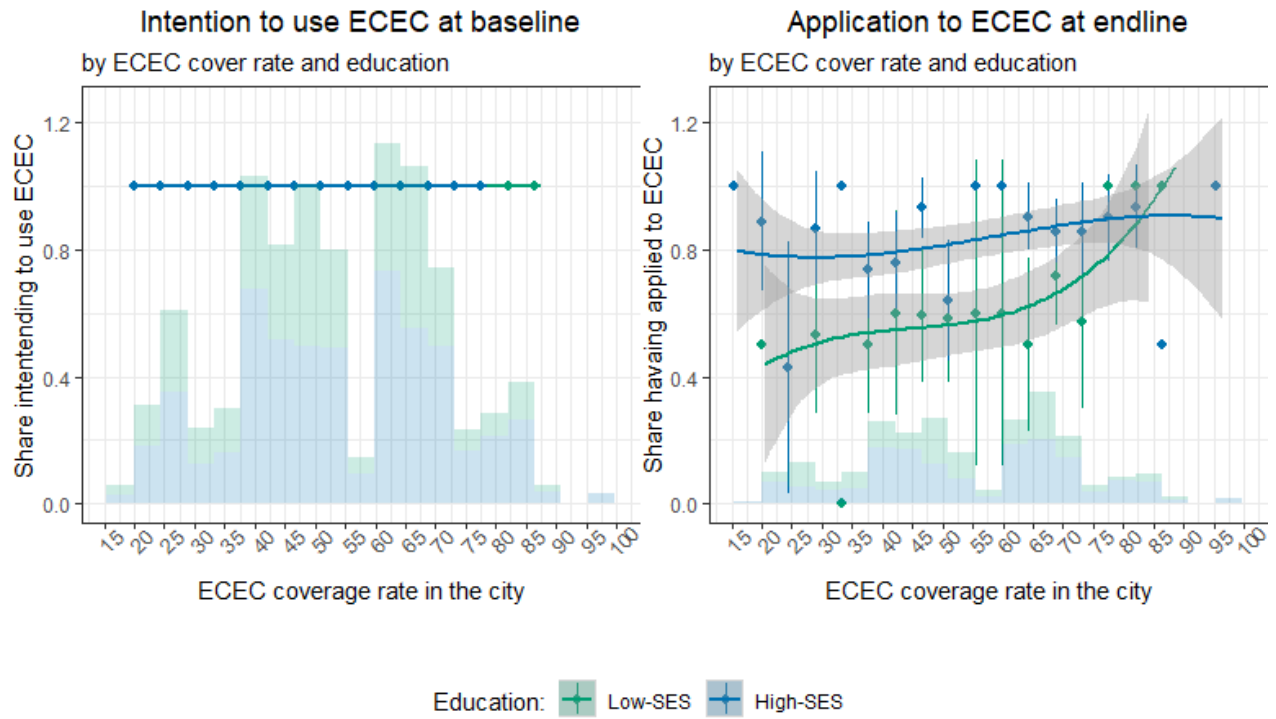


Figure 2.31: Intention to use formal childcare correlates with higher the ECEC cover rate, but only for those with higher education

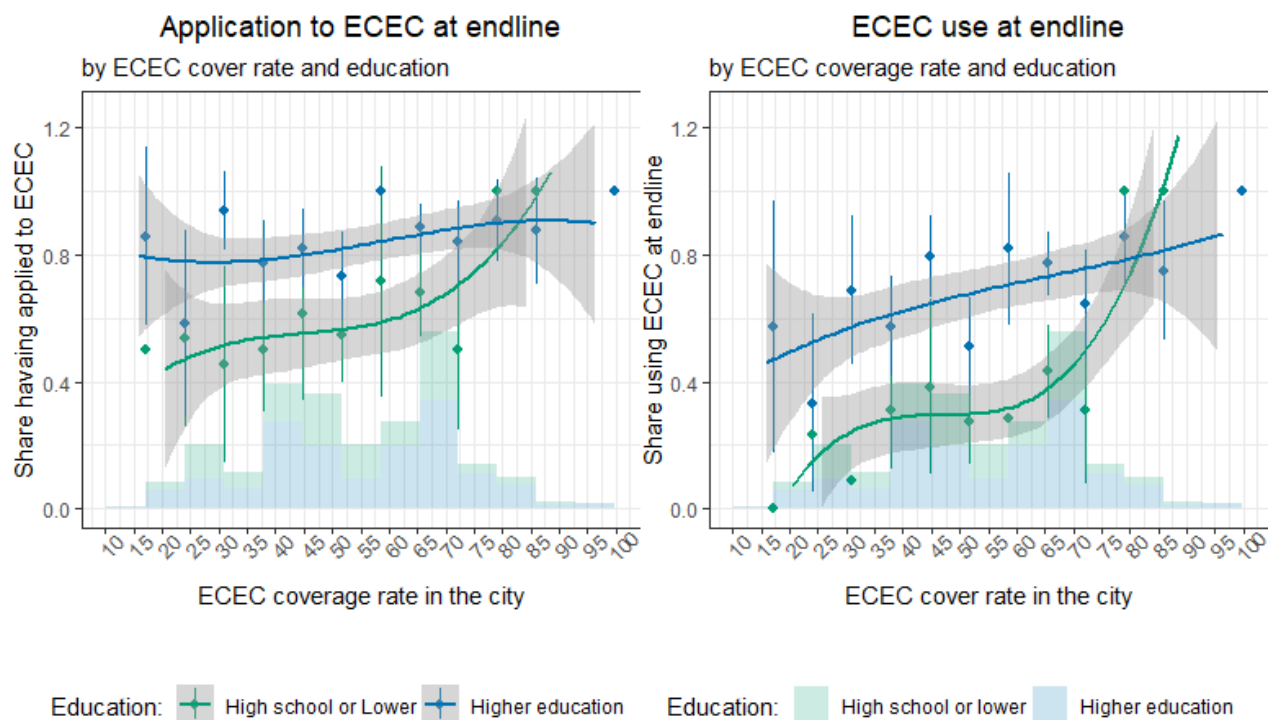


Figure 2.32: Use of ECEC correlates with higher the ECEC cover rate, but only for those with lower education

We find different patterns according to SES for ECEC outcomes.

For the intention to use ECEC during pregnancy (Figure 2.31), we find that the ECEC coverage rate is only positively correlated with this outcome for high-SES mothers. Even though this relationship is not causal, it may suggest that high-SES mothers update their childcare decision-making based on their probability of securing a slot. We find no evidence of such relationship for low-SES mothers, which could suggest that they do not have the same information about the probability of securing a place where they live.

Looking at ECEC application at endline (Figure 2.32) reveals a different story. The ECEC coverage rate seems positively correlated with application for both low- and high-SES mothers, but the coefficients of the regressions are not significant as shown in Table 2.15. On the other hand, for the probability of using ECEC (Figure X), the ECEC coverage rate is significantly positively correlated with the probability of using ECEC, but more so for low-SES mothers (Table X). This suggests that low-SES mothers may have fewer resources to secure a place when the competition is high.

Table 2.15: Relation between not knowing the costs and ECEC outcomes

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
ECEC coverage rate	0.000 [-0.001, 0.002]	0.004 [-0.001, 0.008]	0.005** [0.001, 0.010]	0.006*** [0.002, 0.010]
	0.001 (0.800)	0.002 (0.101)	0.002 (0.015)	0.002 (0.005)
The mother is High-SES	0.015 [-0.123, 0.154]	0.379*** [0.108, 0.651]	0.426*** [0.164, 0.688]	0.376*** [0.124, 0.628]

	Intention at Baseline	Application at Endline	Use at Endline	Use conditional on having applied
	0.068 (0.824)	0.133 (0.008)	0.129 (0.002)	0.124 (0.005)
The mother is born in France	0.035** [0.001, 0.069]	0.089* [-0.007, 0.185]	0.206*** [0.107, 0.306]	0.193*** [0.111, 0.275]
	0.017 (0.047)	0.047 (0.069)	0.049 (<0.001)	0.040 (<0.001)
ECEC coverage rate X High-SES	0.002* [0.000, 0.005]	-0.003 [-0.008, 0.001]	-0.003 [-0.008, 0.001]	-0.004* [-0.009, 0.001]
	0.001 (0.066)	0.002 (0.161)	0.002 (0.176)	0.002 (0.090)
R2	0.072	0.188	0.233	0.231
R2 Adj.	0.053	0.124	0.173	0.149
Num.Obs.	1849	494	494	367
Std.Errors	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave	by: blocksMatWave

Coefficient, 95 % CI in brackets, standard errors, p-value or adjusted p-value in parenthesis

V. 3 Section 3: the Randomized Controlled Trial

So far, all analyses have been correlational, meaning that we cannot rule out the possibility that a third unobserved factor could influence both the independent (e.g. level of information) and dependent variables (e.g. access to ECEC). Nevertheless, the results presented in the previous section suggest that the relationship between SES and ECEC outcomes is complex and may be influenced by various factors. In particular, beliefs and the level of information of families are socially stratified, and families also differ in the amount of resources they can mobilize to secure a place in ECEC. This section is devoted to isolating the causal effects of the latter two factors and evaluating the impact of two low-cost interventions that aim to equalize families' opportunities throughout the ECEC application process. We assess the impact of these interventions through a Randomized Controlled Trial (RCT) with two treatment arms and a control group. The first treatment arm targets only information barriers. The intervention consists of providing information to parents through simple text messages and videos in several languages, emphasizing important features of the ECEC application process, and providing links to more detailed information. The second treatment arm also targets administrative and behavioral barriers. We supplement the information given to families by offering personalized administrative support to help them apply to ECEC.

In the first part of this section, we present in detail the design of these two interventions and the design of the RCT. In the second part, we present the preliminary results of the RCT. It should be noted that the results are still preliminary and have not yet stabilized.

This experiment has been approved by the IRB of Paris School of Economics⁵ and its detailed pre-registration is available on the AEA social science registry⁶ (www.socialscienceregistry.org/trials/9901).

A. 3.1 Research design

As a reminder, baseline interviews for this study were conducted between September 2022 and December 2023 (see section 2). After the Baseline interview, eligible participants were randomly assigned to the three experimental arms (control, information-only treatment - T1, information plus administrative support treatment - T2) within blocks of pre-registered covariates. We employed individual randomization with blocking based on the cross product of the following pre-registered covariates: i) Education E ("tertiary"/"secondary or lower"), ii) Intention to use ECEC I ("no"/"yes but has never used ECEC before"/"yes and already has used ECEC before"), and iii) Supply S (ECEC coverage rate higher/lower than the average in the department). This approach was guided by the rationale that parental education level and intention to use ECEC are strongly associated with ECEC utilization, with varying effectiveness depending on the ECEC coverage rate and previous experience with the ECEC system. If these covariates are predictive of the outcomes, blocking improves precision of the treatment effects and enforces between groups balance. We can therefore estimate conditional average treatment effects based on these variables averaging within-block treatment effects on the relevant subset of blocks with weights proportional to block share in the sample. Participants were randomized within blocks every two weeks throughout the enrollment period, which lasted up to three months.

One year later, between October and December 2023, participants were called back to answer the Endline questionnaire through assisted telephone interviews. We sent participants a 10 EUR voucher to thank them for their participation. Of the 1849 families that were randomized, 79 % of them took-up the Endline survey (1453) out of 1849).

⁵ IRB Number: 2022-015

⁶ RCT ID AEARCTR-0009901

The design and timeline of our study is reflected in Figure 1.

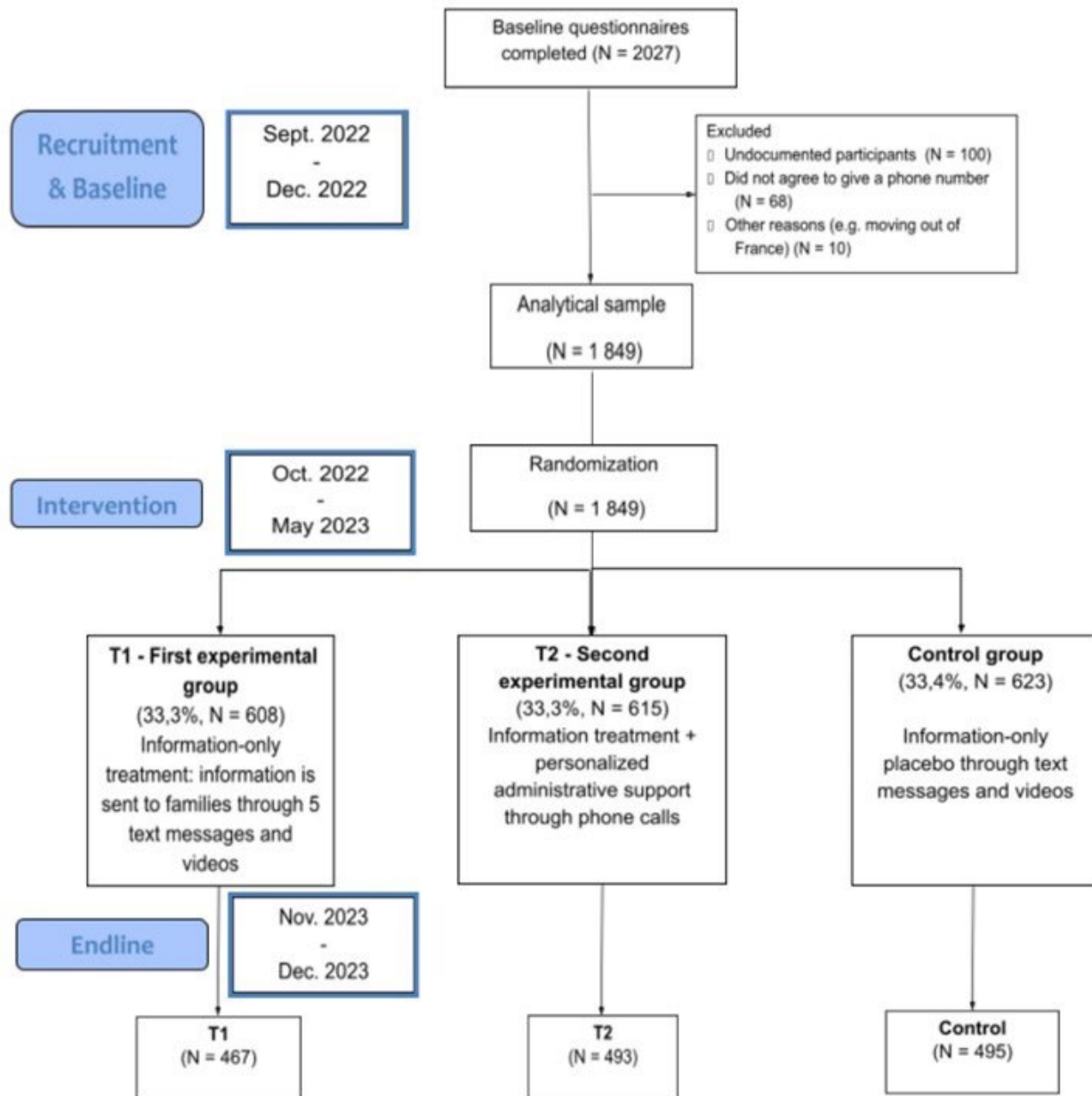


Figure 1: Study design and timeline

B. 3.2 Intervention design

The treatment arms are as follows:

- **Information-only (T1) October-December 2022** - this involves two clusters of content:
 - Cluster 1: information aimed at helping families to identify the type(s) of ECEC that fit well with their preferences and constraints. Treated families received a text message providing access to a short

video presenting information on the availability and characteristics of different types of ECEC in France and how they may correspond to the different preferences and needs of families. In the following days, a second text message gave access to a second short video on eligibility to and costs of ECEC in France. A third video presented detailed information on occasional daycare centers (*halte-garderies*), which appeared to be particularly well-suited to the needs low-SES families express (collective but less intensive care, and more flexible time schedules) but little-known by these families (see section 2).

- *Cluster 2*: information aimed at understanding the application process. As for Cluster 1, this involves sending text messages with links to two videos presenting information on the calendar of applications, the procedures to apply, and tips to maximize the chances of success, such as applying to multiple ECEC. The content of the first video of this cluster was tailored to the area where families live, as each one has a specific application process. Families were also sent a website with resources to help them navigate the application process (e.g., checklist, detailed information on the application process at the city level, contract templates)
- *Reminders*: Reminders were sent by text messages in the third week of treatment. Around February 2023, families received a personalized reminder to watch the video and our content to maximize applications for the June commission, where most of the slots get allocated. The content of the message was personalized according to their planned ECEC choices (if and when they were willing to use ECEC) collected at Baseline. We send also generic reminders to apply shortly before the deadline for the 2023 applications to ECEC (May 2023).
- **Information then administrative support treatment (T2) February-April 2022**: This involves one or several phone calls with parents to deliver personalized assistance, as well as personalized application reminders. We randomly assigned the sample over groups of two weeks of intervention and research assistants. During this period, we called each parent as many times as needed to reach them. A group of 7 randomly assigned trained experts present our services to parents according to a systematized procedure. When parents showed interest, we first established a diagnosis of their choices, intentions, and needs after birth. Parents were at very different stages of their decision-making. We thus adapted our intervention accordingly. When they had not decided yet, we helped them identify the ECEC solution that would best fit their needs, including how accessible each solution was given their situation, and how affordable each solution was through cost simulations. When they had identified the type of ECEC they wanted, we assisted them according to their demands. Some just needed help to spot the ECEC structures they could apply to, while others needed us to fill the application forms with them. Importantly, our research team could mainly provide help to apply for daycare centers. Because application with private childminders and nannies requires face to face interviews, we could only provide information on how to find these professionals, guides to conduct the interviews, and how to sign a contract with them, but could not directly assist in the hiring process.

We coded each type of assistance in a systematic way to qualify the intensity of assistance provided, and created a typology of the types of situations parents were in. Parents in this treatment arm also received the same information as T1 according to the same timeline. We call this treatment arm “administrative support”.

- **Control group**: parents assigned to the control group received a placebo treatment, including two videos when treated parents received the treatment videos. The first video was about emotions during pregnancy, and the second one was about what happens in the brain of baby when they are asleep.

We also wanted to maintain some contact with families to minimize attrition at endline. Therefore, we send all families generic messages throughout the year. These text messages were about specific

times of the year (e.g., welcoming text, winter and summer holidays, new year), and some useful tips not affecting our outcomes of interest (e.g., flea markets around Paris). These messages were also sent to the two intervention groups for the same reason.

Importantly, neither the information nor the administrative support interventions are prescriptive about childcare choices. Our goal was to help people be informed and make choices on their own with or without guidance and assistance with ECEC applications.

C. 3.3 Research questions

We designed this intervention to answer the following research questions:

- RQ 1: Can information and administrative support increase applications and access to ECEC?
RQ 1a: Is this effect heterogeneous across socioeconomic background?
- RQ 2: Does providing administrative support boost application and access to ECEC compared to providing only information?
RQ 2a: Is this effect heterogeneous across socioeconomic background ?

RQ 1 translates in an analysis of the average effect of our treatment T2 (information + administrative support) compared to control on ECEC outcomes (i.e. both application and access to ECEC, see below). RQ1 a) assesses the treatment effect heterogeneity of T2 by socioeconomic background.

RQ 2 relates to the treatment effect heterogeneity between treatment arms, comparing the effect of information provision (T1) only to the bundle information + administrative support (T2) on ECEC outcomes. Distinguishing the effects of the two treatment arms is of paramount importance from a policy perspective. Our text messages and videos represent a cost-effective intervention that any policymaker would consider when confronted with the issue of the ECEC access gap, which could be readily expanded if its effectiveness is demonstrated. However, given the potential presence of additional behavioral and administrative barriers preventing low-SES parents from taking action, even when they express an intention to use ECEC, this treatment may yield minimal to negligible effects in closing the access gap. Therefore, in addition to analyses for RQ1, we are also interested in

- 1) Comparisons between T1 and control. This tests how “*unsolicited provision of information*” (as implemented) affects application ECEC application behaviors and enrollment.
- 2) Comparisons between T2 and T1. This tests how, *after the provision of unsolicited information*, being offered optional assistance and support to apply for ECEC affect outcomes.

However, our conclusions on questions RQ1, RQ1a, RQ2, and RQ2a cannot be solely based on the magnitude and significance of these treatment effects. There are many intermediary channels through which the interventions can increase access to childcare, or not. This research project also aims at understanding *how* and *why* we may observe some effects and when we may not. We define a simple theory of change to guide the definition of additional research questions.

D. 3.4 Theory of change and main outcomes of interest

1. 3.4.1 Main outcomes of interest

The aim of this study is, therefore, to evaluate the impact of T1 and T2 on:

- (i) ECEC application behavior (i.e. whether the family applied to ECEC, when, and how many applications were filled out),

- (ii) access to an ECEC slot.

Ultimately, a follow-up survey would allow us to provide one of the first causal evidence of the impact of access to ECEC on

- (iii) mothers' labor market outcomes and
- (iv) children's development.

2. 3.4.2 Theory of change

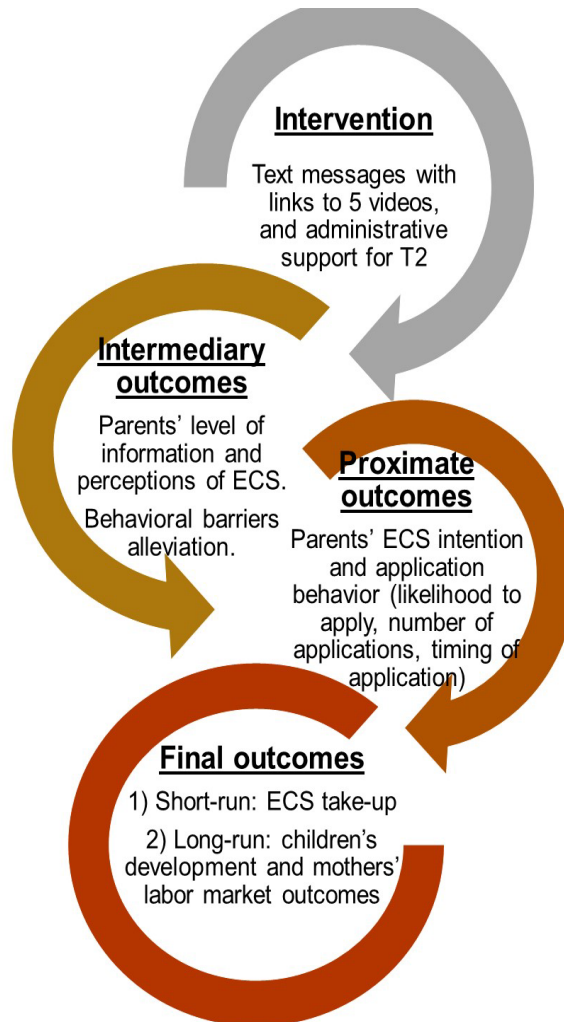


Figure 2. Theory of change

Figure 3.2 represent our simple theory of change. It focusses on the paths through which the treatment effects are likely mediated. At every level, the comparison between different treatment arms provides informative metrics on causal mechanisms fostering or preventing access to ECEC. We formally define the different set of outcomes as followed:

- *Intermediary outcomes*: The intermediary outcomes are parents' level of information and perceptions of ECEC. It should be noted that an increase in the level of information and/or a change in perceptions are not a necessary condition for the proximate outcomes to happen. Indeed, there is another, non-

measurable, channel that is behavioral barriers alleviation. Therefore, if we observe a change in our proximate outcomes but no change in our intermediate outcomes, it will indirectly imply that this change is a result of behavioral barriers alleviation only.

- *Proximate outcomes*: The proximate outcomes are parents' intention to apply to ECEC and application behaviors as measured by their attempts to access ECEC, the timing and number of applications.
- *Final outcomes*: The final outcomes are divided into two sets:
 - * *Short run*: access to ECEC (i.e. whether the family secured a place in ECEC, and in which ECEC type)
 - * *Long run*: children development and parents' labor market participation, and income.

For our intervention to affect the final outcomes, it needs to change proximate outcomes. We think that this can only happen if there is an effect on intermediary outcomes. Furthermore, if there are important treatment effects on proximate outcomes but no final outcomes, it shows evidence of rationing and mismatch on the ECEC market. Given the heterogeneity of availability and affordability of each ECEC type (see Section 2), we also investigate the heterogeneity of treatment effects on the final outcomes by ECEC type. For instance, given that daycare are more affordable than private childminders, we expect that the treatment effects on the final outcomes are stronger for daycare than for private childminders.

E. 3.5 Empirical strategy

F. 3.6 Intention to treat : main effects

Our parameters of interests are the average intention-to-treat effects of T1 against C and T2 against T1 and C. The randomisation was implemented within blocks and waves with probability 1/3 in each group. To jointly estimate the three intention to treat parameters, we stack the sample of compared pair in a single database and estimate the following model using OLS :

$$Y_{ibs} = \sum_s \sum_b \alpha_{sb} B_{ib} \times S_{is} + \sum_s \beta_s Z_{ibs} + \varepsilon_{ibs}$$

Where Y denotes the outcome of individual i of block b in sub-sample s of treatment-arms comparison ; S_{is} is a factor variable of sub-sample pair of treatment arms and Z_{ibs} is a dummy that equals 1 when the household i of block b has been assigned to the active treatment group in sub-sample s . Because this model is fully saturated, the coefficients β_s estimate the average intention to treat as a treatment-variance weighted average of block specific treatment effects [AtheyImbens2017a]. We use inverse propensity score weighting where the propensity score has been previously estimated for each pair of comparison as the prediction of a Probit of Z on block wave fixed effects. This augmented inverse weighted regression (AIWR) is doubly robust with a propensity score given by design.

G. 3.7 Average treatment effects on the treated : main effects

Then, assuming assignment to T2 has no other effects on outcomes but through its effect on participation, an instrumental variable strategy yields the effects on compliers, which in this setting with one-sided compliance, can be interpreted as *treatment effect on the treated* (Frolich Melly, 2013).

Formally, we estimate the following model using TSLS:

$$\begin{cases} Y_{ibs} = \sum_s \sum_b \gamma_{sb} B_{ib} \times S_{is} + \sum_s \delta_s D_{ib} + \mu_{ibs} \\ D_{ib} = \sum_s \sum_b \eta_{sb} B_{ib} \times S_{is} + \sum_s \pi_s \tilde{Z}_{ib} + \epsilon_{ibs} \end{cases}$$

In this system, block x cohort instrument themselves in the second equation while participation is instrumented by the demeaned instrument. Because blocks are discrete and \mathbf{B} contains indicators for each possible realisation, the specification is saturated in B. This is the typical TSLS of Angrist & Ibens (1995) but with centred instrument. As the recent work of Blandol, et al. (2022) shows, TSLS retrieves a LATE interpretation only in saturated specifications, such that the projection matrix of the first stage fits the conditional expectation. This “saturate and weight” specification is like nonparametric conditioning but uses only a single treatment variable (Blandhol, et al., 2022; Angrist & Kolesar, 2022). The problem with this specification is that it has many excluded instruments and is more sensitive to both small sample and many-instruments bias. However, Borusyak, et al. (2022) show that centering on the propensity score recovers the same parameter, while also making explicit the modelling assumption of the first stage to estimate the propensity score q_b . They show that previous TSLS system estimates weighted averages of conditional-on-block IV coefficients:

$$\begin{aligned} \delta_s &= \mathbb{E} \left[\frac{\sigma_Z^2(\mathbf{B}) \pi_b}{\mathbb{E}[\sigma_Z^2(\mathbf{B}) \pi_b]} \delta_b \right] \\ &= \int_b \frac{q_b(1 - q_b) \pi_b}{\int_b q_b(1 - q_b) \pi_b dF_B} \times \delta_b dF_B \end{aligned}$$

An important issue is the weighting of this TSLS that is proportional to the conditional variance of the instrument and the conditional first stage π_b . When propensity scores are constant (which is asymptotically our case), $\sigma_Z^2(\mathbf{B}) = \mathbb{E}[\sigma_Z^2(\mathbf{B})]$ and the β_b are weighted only by the conditional complier shares, yielding the unconditional LATE⁷. Note that from an identification perspective, block fixed effects are then unnecessary. We include them to improve precision in the second stage.

H. 3.8 Results

1. 3.8.1 Description of the sample

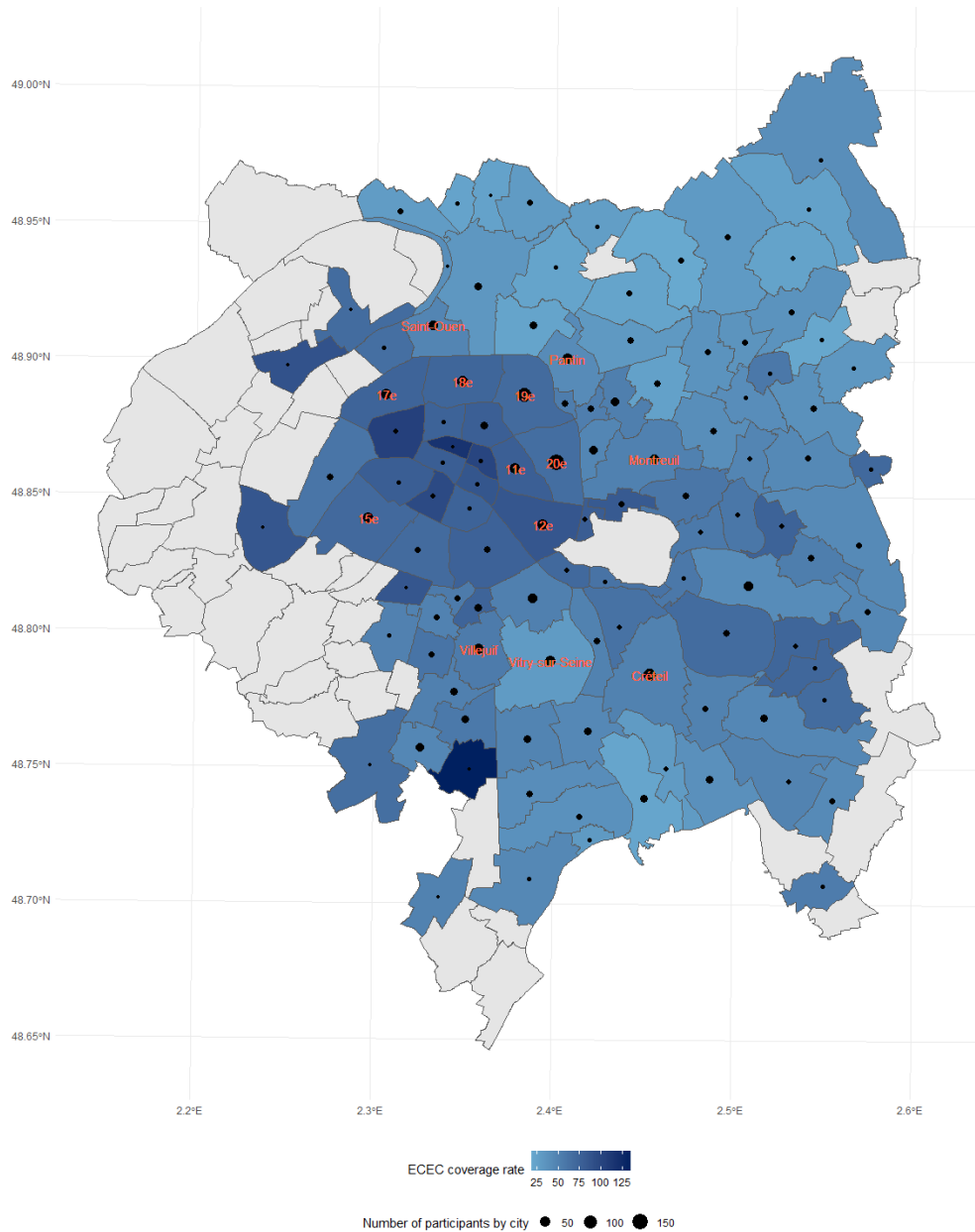
In the remainder, T1 corresponds to the information treatment arm and T2 corresponds to the treatment arm that contains both Information and administrative support to apply to ECEC.

The distribution of the participants within the treatment arms is as follows:

Assignment	n
Control	623
T2	616
T1	610

Map 2 illustrates the distribution of our endline sample across the Paris region.

⁷ A very clear note on this transformation can be found on the web page of Peter Hull: <https://about.peterhull.net/matrix>



Map 2: Distribution of the sample across the Paris region

The initial sample contains 1849 observations of pregnant mothers who completed the baseline questionnaire. The endline survey allowed us to collect 1453 answers.

I. 3.10 Balance checks

Our sample is balanced across the treatment arms, showing that our randomization was successful.

Variable	Treatment Received				p-value ²
	Overall ¹	Info only (T1) ¹	Info + admin. support (T2) ¹	Control ¹	
Single parent family	7.2% (94)	7.7% (34)	8.1% (34)	5.8% (26)	0.38
Age of the mother	31.95 (5.51)	32.11 (5.58)	31.83 (5.60)	31.90 (5.37)	0.81
Number of children					0.91
0	47% (611)	47% (207)	46% (195)	47% (209)	
1	35% (459)	36% (158)	36% (150)	34% (151)	
2	18% (238)	17% (76)	18% (75)	19% (87)	
Born in France	58% (763)	62% (274)	58% (242)	55% (247)	0.11
The mother has a post-secondary education	66% (860)	66% (291)	66% (277)	65% (292)	0.97
The mother is active	74% (962)	75% (332)	73% (307)	72% (323)	0.57
The mother want to work after maternity leaves	90% (1,177)	92% (405)	88% (371)	90% (401)	0.22
The family earn less than €2,500 per month	17% (218)	15% (68)	17% (72)	17% (78)	0.68
Has a computer	87% (1,144)	89% (393)	88% (369)	85% (382)	0.25
The mother is present orientated	43% (563)	40% (175)	45% (188)	45% (200)	0.22
The mother did not smoke	83% (950)	81% (309)	84% (312)	83% (329)	0.53
The mother wants to breastfeed	59% (767)	58% (255)	58% (242)	60% (270)	0.65
Has ever used ECEC	38% (495)	36% (158)	38% (161)	39% (176)	0.54
Want to use ECEC	82% (1,076)	80% (355)	84% (353)	82% (368)	0.39
Knows ECEC is subsidised	83% (1,089)	83% (367)	83% (347)	84% (375)	0.88
Knows only daycare	14% (178)	11% (48)	15% (65)	15% (65)	0.11
Believe in returns to ECEC	28% (366)	27% (120)	27% (115)	29% (131)	0.74
The mother trusts ECEC	82% (1,076)	84% (369)	81% (339)	82% (368)	0.52
The mother lives in Paris	37% (489)	37% (163)	37% (154)	38% (172)	0.84
ECEC coverage is high	40% (528)	41% (179)	39% (163)	42% (186)	0.70
Child is a girl					>0.99
Yes	49% (639)	49% (215)	49% (205)	49% (219)	
No	51% (669)	51% (226)	51% (215)	51% (228)	

¹% (n); Mean (SD)

²*p<0.1; **p<0.05; ***p<0.01

J. 3.11 Analysis of non-response and differential attrition

We find no evidence of differential attrition, as displayed in table 4.1.

Table 4.1: Model of the probability of responding to the follow-up survey

...

	(1)	(2)
<i>T1</i>	-0.029 (0.182)	
	[-0.071, 0.014]	
<i>T2</i>	0.007 (0.747)	
	[-0.036, 0.049]	
$1 * T1 + 1 * T2 = 0$		-0.022 (0.549)
		[-0.093, 0.050]
<i>Num.Obs.</i>	1849	1849
<i>R2</i>	0.054	0.054
<i>R2 Adj.</i>	0.009	0.009
<i>R2 Within</i>	0.001	0.001
<i>R2 Within Adj.</i>	0.000	
<i>AIC</i>	2020.9	2020.9
<i>BIC</i>	2495.8	2495.8
<i>Log.Lik.</i>		-924.455
<i>RMSE</i>	0.40	
<i>Std.Errors</i>	by: StrataWave	
<i>FE:</i>	X	
<i>StrataWave</i>	X	
<i>Mean of DV</i>	0.79	

* p < 0.1, ** p < 0.05, *** p < 0.01 using point-wise p-value. Adjusted p-value and confidence intervals account for simultaneous inference using the Holm–Bonferroni correction. Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Notes:

Table 4.2 present the pair-wise comparison of mean answer rate at endline by assignment group. Column 1 gives the mean answer rate in the relevant comparison group, Column 2 shows the difference by treatment arm. Models are estimated by OLS with block \times waves \times pairwise fixed effect and cluster robust standard error adjusted at the block \times wave level. On average, 79% of the baseline sample answered the follow-up survey. The lowest answer rate is the *Information-only* (T1) treatment group with 76% while the highest is among the *“Individual support group”* (T2) with 80% answers. We use a Chi-2 test of the null hypothesis that all pair-wise comparison are 0 and conclude that answer rates are no different between treatment arms (P-Value = 0.26).

In the remainder, T1-C denotes the model comparing T1 to the control group, T2-C the model comparing T2 to the control group, and T2-T1 the model comparing T2 to T1.

Table 4.2: Model of the probability of responding to the follow-up survey

	<i>Control mean</i>	<i>Differential Attrition</i>
<i>T1-C</i>	0.79 (0.02) [0.75, 0.83]	-0.03 (0.02) [-0.08, 0.02]
	adj.p.val. = 0.000	adj.p.val. = 0.291
<i>T2-C</i>	0.79 (0.02) [0.76, 0.83]	0.01 (0.02) [-0.04, 0.06]
	adj.p.val. = 0.000	adj.p.val. = 0.695
<i>T2-T1</i>	0.76 (0.02) [0.73, 0.80]	0.04 (0.02) [-0.02, 0.09]
	adj.p.val. = 0.000	adj.p.val. = 0.259
<i>Num. Obs.</i>	3698	3698
<i>R2</i>	0.670	0.076
<i>R2 Adj.</i>	0.646	0.007
<i>Fixed effects</i>	X	X
<i>Chi 2</i>		4.01
<i>P-value</i>		0.260

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.
Adjusted p-value and confidence intervals account for simultaneous inference using the Westfall method.
Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

VI. 5 Treatment effects of the programme

This section investigates the effects our interventions. We first estimate the intention to treat effect of the program on our main proximate and short-run final outcomes, namely probability to apply and access to ECEC at endline (RQ1 and RQ2). We then investigate the heterogeneity of the treatment effects across subgroups of interest (RQ1a and RA2a). The analysis of the mechanisms (intermediary outcomes) go beyond the scope of this report, but will be investigated on the future.

For each analysis, we focus on our two main intermediary and final outcomes, namely the probability to apply to ECEC (binary outcome that takes the value 1 if the family i applied to at least one ECEC, and 0 otherwise), and the probability to use ECEC. Because our treatments mainly focus on helping families apply to daycare centers, we also report two additional outcomes: the probability to apply to daycare centers and the probability to use daycare centers. As previously explained, the administrative support provided by our trained expert mainly focused on helping parents to access daycare due to the remote nature of our treatment. Indeed, hiring a private childminder or a nanny require face-to-face interviews. We therefore expect the effect of the program to be stronger on the probability to use daycare than on the probability to use other types of ECEC.

A. 5.1 Intention to treat analysis

1. 5.1.1 Main intention to treat : table

Figure 5.1 and table 5.1 displays the intention to treat estimates for our main outcomes.

We see a small but significant impact of the bundle information + administrative support on the probability of applying to ECEC for the general population (first column, T2-C). Families assigned to receive this bundle are 4 percentage points more likely to apply to ECEC. Testing the effectiveness of T2 against T1 (second column, T2-T1) reveals that the effect can be attributed to being offered administrative support after information provision. We see no significant impact of information provision alone (third column, T1-C).

Restricting our analyses to daycare centers yields larger estimates. Families assigned to the bundle are 8 percentage points more likely to apply to daycare centers (which corresponds to a 14% increase in this outcome) and 5 percentage points more likely to use daycare centers (which corresponds to a 24% increase).

Table 5.1: Intention-to-treat effect on the main outcomes

	<i>Applied any childcare</i>	<i>Applied Daycare</i>	<i>Use any childcare</i>	<i>Use Daycare</i>
<i>T1-C</i>	-0.01 (0.02) [-0.06, 0.04] adj.p.val. = 0.762	0.01 (0.03) [-0.06, 0.07] adj.p.val. = 0.787	-0.02 (0.03) [-0.08, 0.04] adj.p.val. = 0.679	-0.01 (0.02) [-0.07, 0.05] adj.p.val. = 0.694
<i>T2-C</i>	0.04** (0.02) [-0.01, 0.09] adj.p.val. = 0.100	0.08*** (0.03) [0.02, 0.14] adj.p.val. = 0.004	0.02 (0.03) [-0.05, 0.08] adj.p.val. = 0.679	0.05** (0.02) [0.00, 0.10] adj.p.val. = 0.036
<i>T2-T1</i>	0.05** (0.02) [-0.01, 0.10] adj.p.val. = 0.100	0.07** (0.03) [0.00, 0.14] adj.p.val. = 0.029	0.04 (0.03) [-0.02, 0.11] adj.p.val. = 0.298	0.07** (0.03) [0.01, 0.13] adj.p.val. = 0.027
<i>Control mean</i>	0.75 (0.03) [0.68, 0.82]	0.59 (0.03) [0.52, 0.65]	0.57 (0.04) [0.48, 0.65]	0.21 (0.02) [0.17, 0.26]
<i>Num.Obs.</i>	2906	2906	2906	2906
<i>R2</i>	0.364	0.228	0.315	0.122
<i>R2 Adj.</i>	0.304	0.154	0.250	0.039
<i>Fixed effects</i>	X	X	X	X
<i>Chi 2</i>	6.92	11.42	2.71	13.76
<i>P-value</i>	0.074	0.010	0.439	0.003

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference using the Westfall method.

Each column estimates jointly the effects of the program using fully-saturated stacked regressions.

Control means estimated separately by OLS.

<i>Applied any childcare</i>	<i>Applied Daycare</i>	<i>Use any childcare</i>	<i>Use Daycare</i>
------------------------------	------------------------	--------------------------	--------------------

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

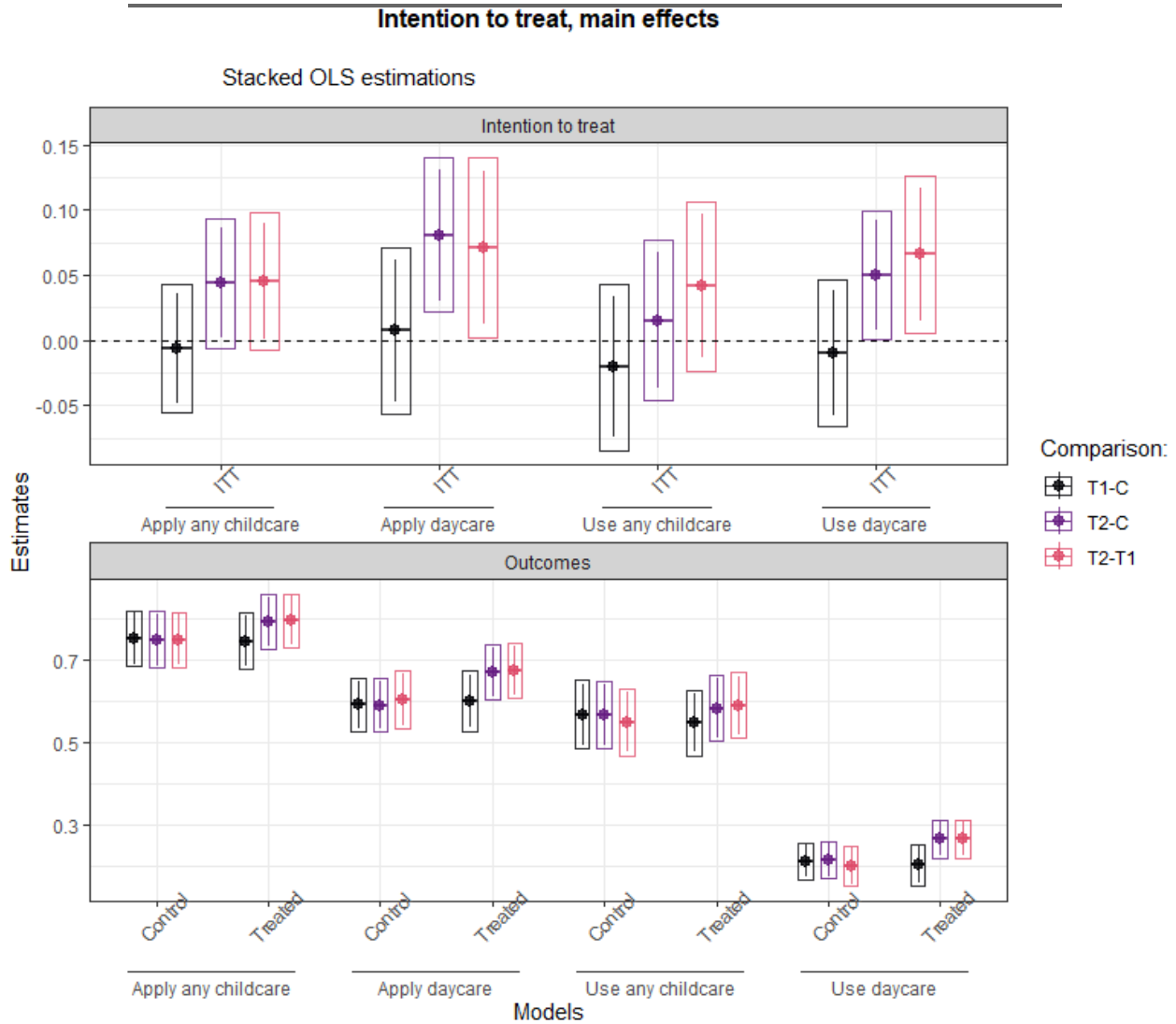


Figure 5.1: Average intention to treat effects on main outcomes

2. 5.1.2 Robustness : post-lasso

To ensure the robustness of our findings, we also estimate the intention to treat effects using post-lasso estimation. This data-driven method allows us to select the most relevant covariates to maximize precision for each outcome and

estimate the treatment effect using these covariates. We use the same empirical strategy as in the main analysis, but we allow the post-lasso to select the most relevant covariates and add them to our models.

We see in 5.2 that the post-lasso estimates are consistent with the main analysis. The effects of the bundle information + administrative support on i) the probability to apply to ECEC, ii) the probability to apply to daycare, and the probability to use daycare are significant and positive.

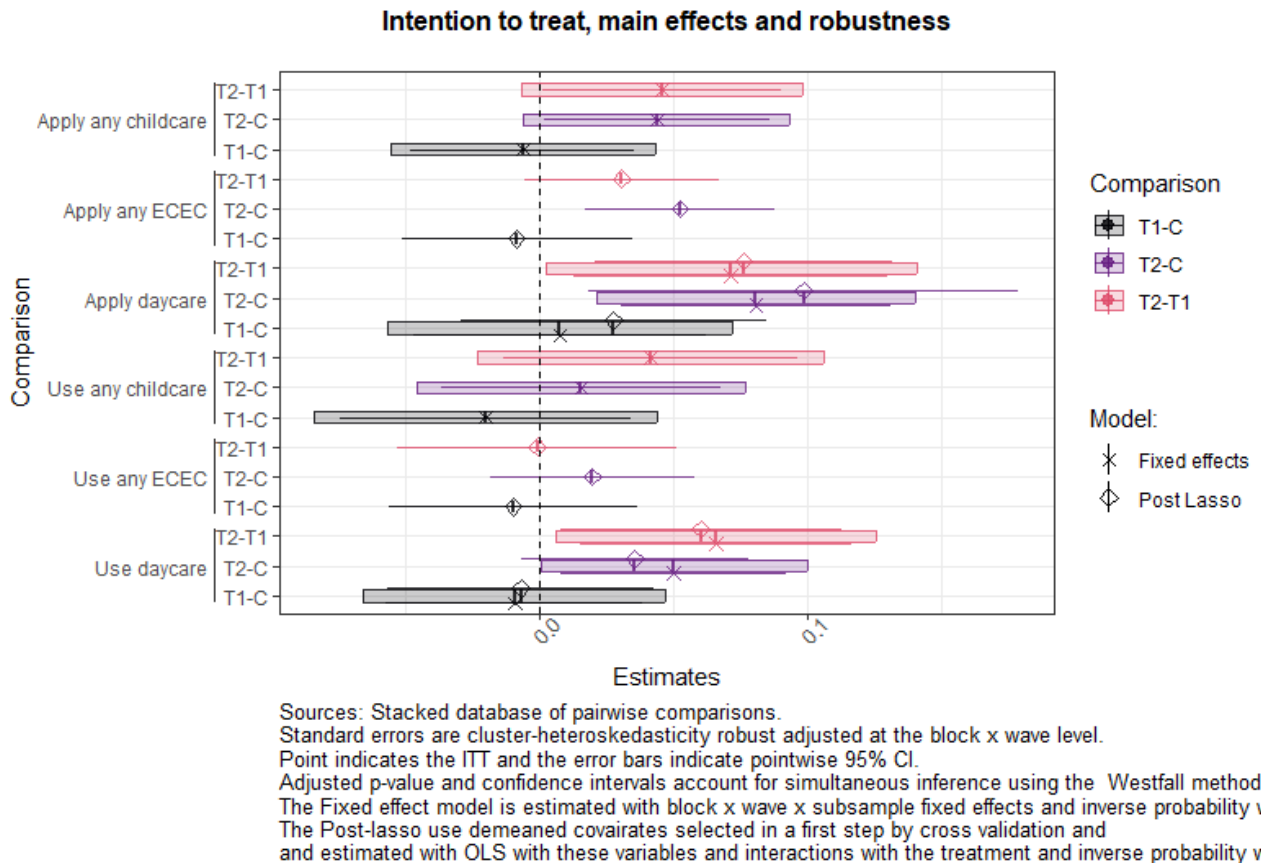


Figure 5.2: Robustness: Comparison of the simple model with one with covariates, using covariates selection with LASSO

VII. 6 Treatment effect on the treated

Because we know which family assigned to the administrative support actually received it, we can estimate the average treatment effect on the treated (ATT) by comparing the outcomes of those who received the treatment to those who did not. This is a local average treatment effect (LATE) that estimates the effect of the treatment on the compliers.

A. 6.1 Naïve comparison between groups

As a benchmark, we first estimate the difference between mothers who received assistance and information with those who did not receive assistance. The comparison group is thus composed with those of T2 who did not receive administrative support, those in T1 and those in control group depending on the model. Those who received assistance

are the **treated compliers**, those in T2 who did not receive the treatment are the **never takers**. In this setting with one-sided noncompliance, there are no always takers and with the string first stage, the monotonicity trivially holds.

In the comparison group, there are untreated compliers and never-takers (Rubin, 2005). The Naïve model pool them together but compliers and never-takers may have different counterfactual outcomes. In that case, these naive comparisons are biased.

Table 6.1 present the results of OLS regressions of the main outcomes on D: receiving assistance with block x wave fixed effects like before. We find large significant differences on all outcomes but use of any ECEC, meaning that those who receive assistance are more likely to have applied to any ECEC and daycare in particular and to use daycare, but not other ECEC types.

Table 6.1: Naive difference between participants and non-participants by main outcomes

	<i>Applied any childcare</i>	<i>Applied Daycare</i>	<i>Use any childcare</i>	<i>Use Daycare</i>
<i>T2-C</i>	0.11*** (0.02) [0.06, 0.16]	0.20*** (0.03) [0.14, 0.26]	0.03 (0.03) [-0.05, 0.10]	0.08*** (0.03) [0.02, 0.14]
	adj.p.val. = 0.000	adj.p.val. = 0.000	adj.p.val. = 0.415	adj.p.val. = 0.005
<i>T2-T1</i>	0.12*** (0.02) [0.06, 0.17]	0.21*** (0.03) [0.14, 0.27]	0.05 (0.04) [-0.02, 0.13]	0.10*** (0.03) [0.03, 0.17]
	adj.p.val. = 0.000	adj.p.val. = 0.000	adj.p.val. = 0.187	adj.p.val. = 0.003
<i>Control mean</i>	0.79 (0.03) [0.73, 0.85]	0.61 (0.02) [0.56, 0.67]	0.61 (0.04) [0.54, 0.69]	0.24 (0.02) [0.20, 0.28]
<i>Num.Obs.</i>	1946	1946	1946	1946
<i>R2</i>	0.379	0.257	0.314	0.121
<i>R2 Adj.</i>	0.320	0.187	0.249	0.037
<i>Fixed effects</i>	X	X	X	X
<i>Chi 2</i>	27.25	67.06	2.77	9.97
<i>P-value</i>	0.000	0.000	0.250	0.007

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference using the Westfall method.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

In particular, those who received administrative support are 20.6 pp more likely to apply to daycare and 10.3pp more likely to use daycare than those who only received information.

To estimate the average treatment effect on the treated, we leverage random assignment to T2 as an instrument for receiving assistance and present the estimates of similar models as the Naive estimates, instrumenting participation x comparison sample by the centered assignment dummy x comparison sample.

B. 6.2 Treatment effect on the treated using IV

Table 6.2: Average treatment effect on the treated on the main outcomes

	<i>Applied any childcare</i>	<i>Applied Daycare</i>	<i>Use any childcare</i>	<i>Use Daycare</i>
<i>T2-C</i>	0.08** (0.04) [-0.01, 0.17] adj.p.val. = 0.068	0.15*** (0.05) [0.05, 0.26] adj.p.val. = 0.002	0.03 (0.05) [-0.08, 0.14] adj.p.val. = 0.560	0.10** (0.04) [0.00, 0.19] adj.p.val. = 0.022
<i>T2-T1</i>	0.09** (0.04) [-0.01, 0.18] adj.p.val. = 0.068	0.14** (0.05) [0.02, 0.26] adj.p.val. = 0.012	0.08 (0.05) [-0.04, 0.20] adj.p.val. = 0.236	0.13** (0.05) [0.02, 0.23] adj.p.val. = 0.017
<i>Avg. cfct.</i>	0.82 (0.04) [0.73, 0.91]	0.69 (0.05) [0.58, 0.81]	0.56 (0.05) [0.45, 0.67]	0.19 (0.04) [0.10, 0.28]
<i>Num.Obs.</i>	1946	1946	1946	1946
<i>R2</i>	0.378	0.255	0.314	0.120
<i>R2 Adj.</i>	0.319	0.184	0.248	0.037
<i>Fixed effects</i>	X	X	X	X
<i>Chi 2</i>	5.94	12.03	2.25	8.11
<i>P-value</i>	0.051	0.002	0.325	0.017

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference using the Westfall method.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

Average treatment effects on the treated estimated jointly for both comparison by instrumenting administrative support in each comparison sample by assignment to T2 (centred by the pairwise instrument propensity score) interacted with the comparison sample dummy and block x wave x comparison fixed effects instrumenting themselves.

Avg. Cfct. indicates the untreated compliers' average and is estimated by TSLS with (1-D)*Y as an outcome, (1-D) as the treatment variable instrumented by the centred assignment.

We present these results in Table 6.2 and also compute the average potential outcome of untreated compliers in T1 as a reference. Overall, we find similar patterns as the naive estimates, but the effects are smaller than the naive estimates. In particular, the Average treatment effect of administrative support on the treated compared with information only are 13.7 pp for the probability to apply to daycare and 12.6pp for the probability to use daycare.

Note that these estimates are causal under the exclusion restriction i.e., that being called and proposed assistance had no effect on the outcome of non-participants. Said differently, for never-takers, the outcome does not vary when we offer them support or not. This hypothesis could be violated if those who were called and refused the support adopted different behaviours following this call than they would have had they not been called. If that is the case, the previous estimates exaggerate the true effects on participants. However, we think this is unlikely to be the case and if that is the case, the intention to treat estimates remain causal and include possible reactions of non-participants.

The effects of the program are sizable on application and access to daycare. For the former, the increase in application rate represents 19.7% of the counterfactual average and 65.9% of the average counterfactual share of access to daycare for untreated compliers.

1. 6.2.1 Summary of Question 1 and 2

We can now answer questions 1 and 2. Our answer to question 1 is that information and administrative support increase application to ECEC, and in particular to daycare, and the use of daycare. The average treatment effects on the treated are large and significant. The intention to treat estimates are smaller but still sizable. Our answer to question 2 is that administrative support boosts application and access compared to information alone. We observe no significant effect of the provision of information alone on our four main outcomes presented here.

Given the goals of the intervention, we also want to know whether our treatments mitigated the SES-based gap in ECEC enrollment. Not only do we want to know whether our information was effective or not, but we also want to know whether its effects are stronger for low-SES families.

Therefore, we investigate the heterogeneity of the treatment effects on application and access to ECEC according to socio-economic outcomes in the next section. We preregistered four main dimensions of heterogeneity: education, migration background, previous ECEC usage, and level of information at baseline. We expected larger effects for families (i) in which the mother has a lower level of education, (ii) in which the mother was not born in France, (iii) who did not use ECEC before, and (iv) who had a lower level of information at baseline.

VIII. 7 Heterogeneity of the treatment effects

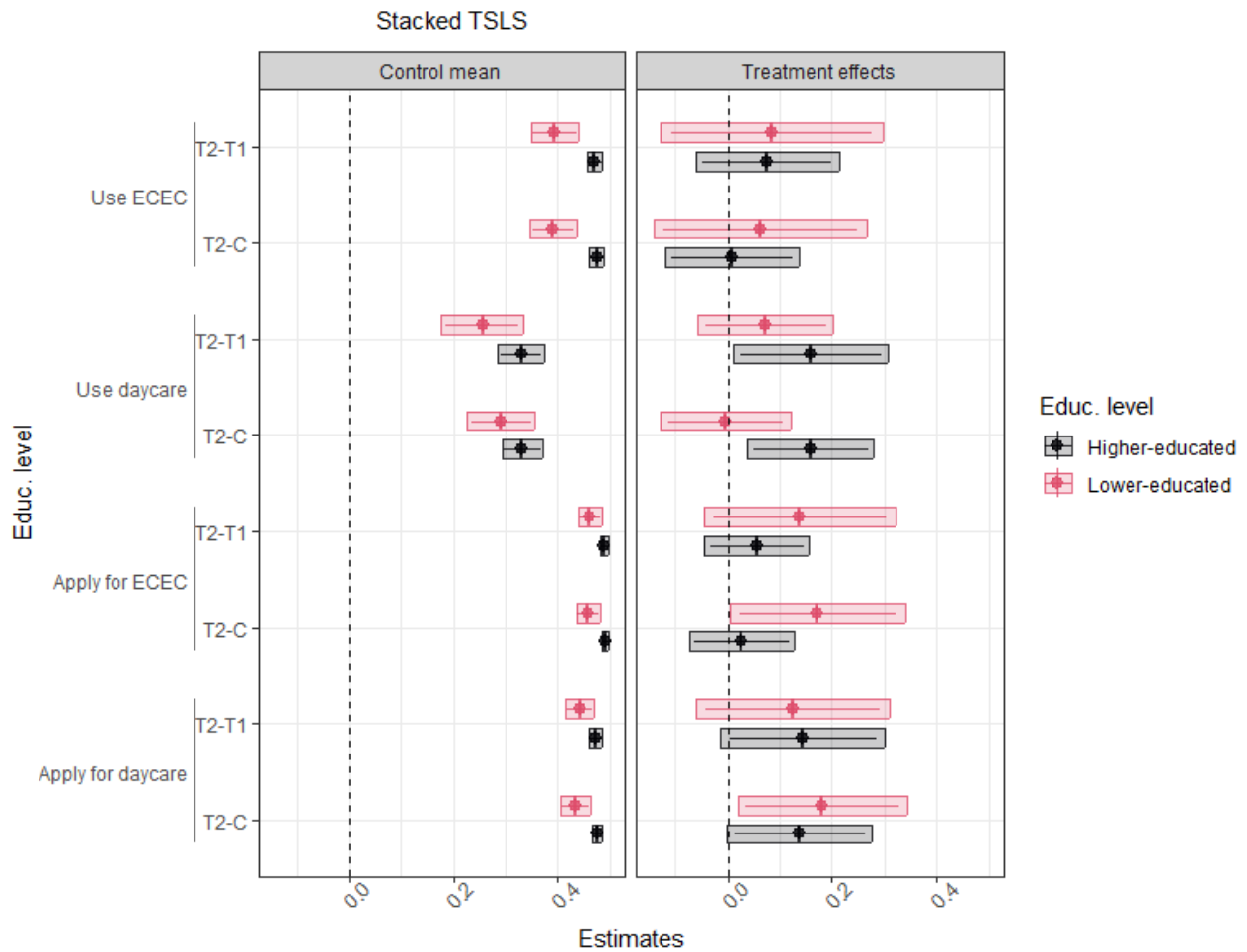
In this section, we investigate the heterogeneous treatment effects of our interventions according to four variables i) education, ii) migration background, iii) previous ECEC usage, and iv) level of information at baseline. We present the results for each variable in this order.

A. 7.1 Level of education

To estimate the intention to treat within subgroup defined by some attributes, we estimate fully saturated regressions with block x waves fixed effect, interacting the assignment subsample with the attribute variable such that there is one coefficient per combination of subsample x attribute. In which case, each coefficient retrieves the average ITT and ATT per subgroup.

Figure 7.1 presents the average treatment effects on the treated and the intention to treat estimates for the four main outcomes by education level. The first panel shows the control mean (i.e. the difference between lower- and higher-SES families for these four outcomes in the absence of intervention). The second panel shows the average treatment effects on the treated for our four outcomes according to the level of education of the mother. Detailed estimates are presented in the next two sections.

ATT by education level on application and access to daycare



We see that the bundle information + administrative support only increased the probability of applying for ECEC and daycare for lower-educated families, and we see no effect on ECEC use. Turning to daycare, the bundle increased the probability of applying to daycare for both lower- and higher-educated families. However, it increased the probability of using daycare only for higher-educated families.

1. 7.1.1 Heterogeneous treatment effect on application and access to ECEC by education level

Table 7.1 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to ECEC by education level. The bundle information + administrative support increased the probability that low-educated families apply for ECEC by 28%.

Table 7.1: Average effects on access to ECEC by education level

Group	Applied for ECEC			Use ECEC		
	Control mean	ITT	ATT	Control mean	ITT	ATT
T2-C Higher-educated	0.84*** (0.03)	0.01 (0.02)	0.03 (0.05)	0.69*** (0.04)	0.00 (0.03)	0.01 (0.06)
	[0.78, 0.90] adj.p.val. = 0.000	[-0.04, 0.06] adj.p.val. = 0.771	[-0.07, 0.13] adj.p.val. = 0.770	[0.61, 0.77] adj.p.val. = 0.000	[-0.06, 0.07] adj.p.val. = 0.986	[-0.12, 0.14] adj.p.val. = 0.986
Lower-educated	0.60*** (0.05)	0.09** (0.04)	0.17** (0.08)	0.36*** (0.05)	0.03 (0.05)	0.06 (0.09)
	[0.48, 0.71] adj.p.val. = 0.000	[0.00, 0.19] adj.p.val. = 0.042	[0.00, 0.34] adj.p.val. = 0.043	[0.25, 0.46] adj.p.val. = 0.000	[-0.08, 0.15] adj.p.val. = 0.717	[-0.14, 0.27] adj.p.val. = 0.721
T2-T1 Higher-educated	0.83*** (0.03)	0.03 (0.02)	0.06 (0.05)	0.66*** (0.04)	0.04 (0.03)	0.08 (0.06)
	[0.77, 0.89] adj.p.val. = 0.000	[-0.02, 0.08] adj.p.val. = 0.377	[-0.04, 0.16] adj.p.val. = 0.352	[0.58, 0.74] adj.p.val. = 0.000	[-0.03, 0.11] adj.p.val. = 0.373	[-0.06, 0.21] adj.p.val. = 0.370
Lower-educated	0.61*** (0.05)	0.07 (0.05)	0.14 (0.08)	0.35*** (0.05)	0.05 (0.05)	0.08 (0.10)
	[0.50, 0.73] adj.p.val. = 0.000	[-0.03, 0.18] adj.p.val. = 0.176	[-0.05, 0.32] adj.p.val. = 0.176	[0.25, 0.46] adj.p.val. = 0.000	[-0.07, 0.16] adj.p.val. = 0.582	[-0.13, 0.30] adj.p.val. = 0.582
Num.Obs.	1946	1946	1946	1946	1946	1946
R2	0.691	0.371	0.381	0.532	0.314	0.313
R2 Adj.	0.661	0.310	0.321	0.487	0.248	0.247
Fixed effects	X	X	X	X	X	X
Mean F-stat 1st stage			297			297

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

2. 7.1.2 Heterogeneous treatment effect on application and access to daycare by education level

Table 7.2 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to daycare by education level. T2 increased the probability that low-educated families apply for daycare by 38% and the one of highly-educated families by 21%. However, it increased the probability that highly-educated families use daycare by 70% and had no effect on the probability that low-educated families use daycare. Interestingly, the point

estimates is the same regardless of the comparison group. This means that all effect of our treatment comes from the administrative support.

Table 7.2: Average effects on access to daycare by education level

...

	<i>Group</i>	<i>Applied for daycare</i>			<i>Use daycare</i>		
		Control mean	ITT	ATT	Control mean	ITT	ATT
<i>T2-C</i>	Higher-educated	0.66*** (0.03)	0.07** (0.03)	0.14** (0.06)	0.23*** (0.02)	0.08*** (0.03)	0.16*** (0.05)
		[0.59, 0.73] adj.p.val. = 0.000	[0.00, 0.14] adj.p.val. = 0.066	[0.00, 0.28] adj.p.val. = 0.056	[0.18, 0.28] adj.p.val. = 0.000	[0.02, 0.14] adj.p.val. = 0.005	[0.04, 0.28] adj.p.val. = 0.007
	Lower-educated	0.47*** (0.05)	0.10** (0.04)	0.18** (0.07)	0.19*** (0.03)	0.00 (0.03)	0.00 (0.06)
		[0.37, 0.57] adj.p.val. = 0.000	[0.01, 0.19] adj.p.val. = 0.022	[0.02, 0.34] adj.p.val. = 0.025	[0.12, 0.26] adj.p.val. = 0.000	[-0.07, 0.07] adj.p.val. = 0.997	[-0.13, 0.12] adj.p.val. = 0.997
<i>T2-T1</i>	Higher-educated	0.66*** (0.04)	0.07* (0.04)	0.14*** (0.07)	0.23*** (0.03)	0.08** (0.04)	0.16** (0.07)
		[0.58, 0.74] adj.p.val. = 0.000	[-0.01, 0.16] adj.p.val. = 0.104	[-0.01, 0.30] adj.p.val. = 0.080	[0.17, 0.29] adj.p.val. = 0.000	[0.00, 0.16] adj.p.val. = 0.040	[0.01, 0.31] adj.p.val. = 0.034
	Lower-educated	0.50*** (0.05)	0.07 (0.05)	0.13 (0.08)	0.15*** (0.03)	0.04 (0.03)	0.07 (0.06)
		[0.40, 0.61] adj.p.val. = 0.000	[-0.03, 0.17] adj.p.val. = 0.233	[-0.06, 0.31] adj.p.val. = 0.236	[0.07, 0.22] adj.p.val. = 0.000	[-0.03, 0.11] adj.p.val. = 0.370	[-0.06, 0.20] adj.p.val. = 0.370
<i>Num.Obs.</i>		1946	1946	1946	1946	1946	1946
<i>R2</i>		0.512	0.231	0.254	0.204	0.118	0.119
<i>R2 Adj.</i>		0.464	0.157	0.183	0.127	0.033	0.034
<i>Fixed effects</i>		X	X	X	X	X	X
<i>Mean F-stat 1st stage</i>				297			297

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

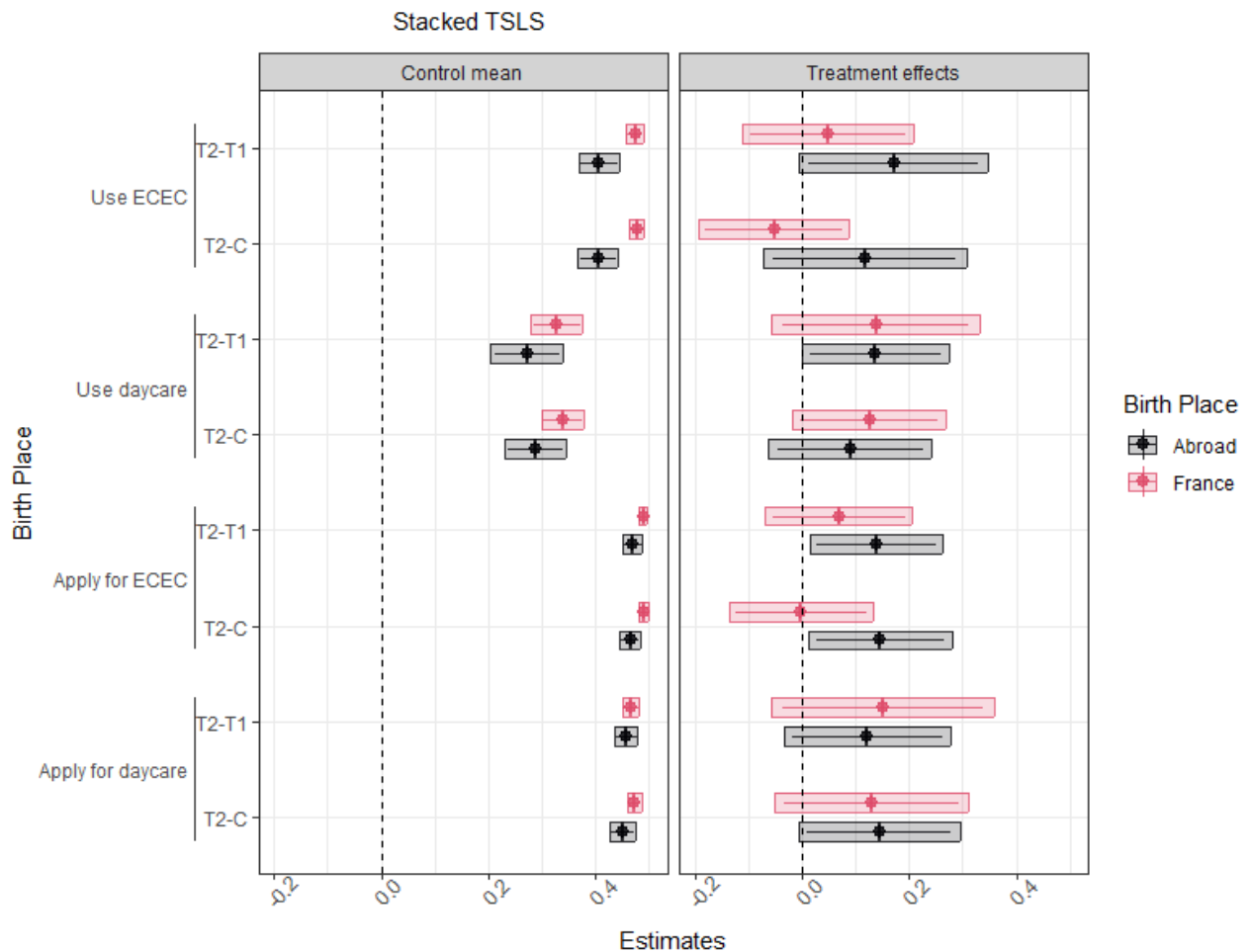
Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

B. 7.2 Migration background

Figure 7.2 presents the average treatment effects on the treated and the intention to treat estimates for the four main outcomes by migration background. The first panel shows the control mean (i.e. the difference between families in which the mother is born abroad and families in which the mother is born in France) for these four outcomes in the absence of intervention). The second panel shows the average treatment effects on the treated for our four outcomes according to the migration background of the mother. Detailed estimates are presented in the next two sections.

ATT by migration background on application and access to daycare



Sources: Stacked database of pairwise comparisons.
 Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.
 Point indicates the ITT and the error bars indicate pointwise 95% CI.
 The Fixed effect model is estimated with block x wave x subsample fixed effects and inverse probability weights.
 The Post-lasso uses demeaned covariates selected in a first step by cross validation and estimated with OLS with these variables and interactions with the treatment and inverse probability weights.

We see that the bundle information + administrative support only increased the probability of applying for ECEC and daycare for families in which the mother is born abroad, and we see no effect on ECEC use.

1. 7.2.1 Heterogeneous treatment effect on application and access to ECEC by migration background

Table 7.1 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to ECEC by education level. The bundle information + administrative support (T2) increased the probability that families in which the mother is born abroad apply for ECEC by 22%, while not affecting families in which the mother is born in France. Our results also suggest that T2 increased the probability that families in which the mother is born abroad use ECEC by about 29%, but we can detect an effect a significant effect of the administrative support only in comparison to T1.

Table 7.3: Average effects on access to ECEC by migration background

Group	Applied for ECEC			Use ECEC		
	Control mean	ITT	ATT	Control mean	ITT	ATT
T2-C	0.67*** (0.05)	0.09** (0.04)	0.15** (0.06)	0.41*** (0.05)	0.07 (0.05)	0.12 (0.09)
	Abroad [0.57, 0.77] adj.p.val. = 0.000	[0.01, 0.17] adj.p.val. = 0.025	[0.01, 0.28] adj.p.val. = 0.030	[0.31, 0.52] adj.p.val. = 0.000	[-0.04, 0.18] adj.p.val. = 0.296	[-0.07, 0.31] adj.p.val. = 0.299
France	0.83*** (0.03)	0.00 (0.03)	0.00 (0.06)	0.70*** (0.03)	-0.02 (0.03)	-0.05 (0.06)
	[0.76, 0.90] adj.p.val. = 0.000	[-0.06, 0.06] adj.p.val. = 0.999	[-0.14, 0.13] adj.p.val. = 0.999	[0.62, 0.77] adj.p.val. = 0.000	[-0.09, 0.04] adj.p.val. = 0.616	[-0.19, 0.09] adj.p.val. = 0.620
T2-T1	0.67*** (0.04)	0.08** (0.03)	0.14** (0.06)	0.39*** (0.04)	0.10** (0.05)	0.17** (0.08)
	Abroad [0.57, 0.76] adj.p.val. = 0.000	[0.01, 0.16] adj.p.val. = 0.027	[0.01, 0.26] adj.p.val. = 0.026	[0.29, 0.48] adj.p.val. = 0.000	[0.00, 0.21] adj.p.val. = 0.059	[-0.01, 0.35] adj.p.val. = 0.061
France	0.82*** (0.03)	0.03 (0.03)	0.07 (0.06)	0.68*** (0.04)	0.02 (0.03)	0.05 (0.07)
	[0.75, 0.89] adj.p.val. = 0.000	[-0.03, 0.09] adj.p.val. = 0.451	[-0.07, 0.21] adj.p.val. = 0.443	[0.59, 0.76] adj.p.val. = 0.000	[-0.05, 0.09] adj.p.val. = 0.735	[-0.11, 0.21] adj.p.val. = 0.733
Num.Obs.	1946	1946	1946	1946	1946	1946
R2	0.716	0.448	0.459	0.569	0.391	0.395
R2 Adj.	0.659	0.336	0.349	0.481	0.268	0.272
Fixed effects	X	X	X	X	X	X
Mean F-stat 1st stage			313			313

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

<i>Group</i>	<i>Applied for ECEC</i>			<i>Use ECEC</i>		
	Control mean	ITT	ATT	Control mean	ITT	ATT

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

2. 7.2.2 Heterogeneous treatment effect on application and access to daycare by migration background

Table 7.4 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to daycare by migration background. T2 increased the probability that families in which the mother is born abroad apply for daycare by 25%. Results on daycare use are inconsistent because we lack power to detect significant effect consistently across comparison groups. We can say that the T2 increased the probability that families in which the mother is born in France use daycare by 50% and that the administrative support increased the probability that families in which the mother is born abroad use daycare by 88% compared to information provision alone. However, when we run analyses to know whether we increased daycare use more for families in which the mother is born abroad or for families in which the mother is born in France, we do cannot reject the null hypothesis that the effect is the same for both groups (i.e. families in which the mother is born abroad and families in which the mother is born in France). Results for these tests are shown in 7.5. This would suggest that we actually increase daycare use in both groups.

Table 7.4: Average effects on access to daycare by migration background

<i>Group</i>	<i>Applied for daycare</i>			<i>Use daycare</i>		
	Control mean	ITT	ATT	Control mean	ITT	ATT
<i>T2-C</i>	0.56*** (0.04)	0.09** (0.04)	0.14** (0.07)	0.19*** (0.03)	0.05 (0.04)	0.09 (0.07)
Abroad	[0.47, 0.66]	[0.00, 0.18]	[-0.01, 0.29]	[0.12, 0.26]	[-0.04, 0.15]	[-0.06, 0.24]
	adj.p.val. = 0.000	adj.p.val. = 0.066	adj.p.val. = 0.066	adj.p.val. = 0.000	adj.p.val. = 0.336	adj.p.val. = 0.336
France	0.63*** (0.03)	0.06 (0.04)	0.13 (0.08)	0.24*** (0.03)	0.06* (0.03)	0.13* (0.06)
	[0.55, 0.71]	[-0.02, 0.14]	[-0.05, 0.31]	[0.18, 0.29]	[-0.01, 0.12]	[-0.02, 0.27]
	adj.p.val. = 0.000	adj.p.val. = 0.213	adj.p.val. = 0.201	adj.p.val. = 0.000	adj.p.val. = 0.101	adj.p.val. = 0.098
<i>T2-T1</i>	0.58*** (0.04)	0.07* (0.04)	0.12* (0.07)	0.16*** (0.03)	0.08** (0.04)	0.14** (0.06)
Abroad	[0.49, 0.67]	[-0.02, 0.17]	[-0.03, 0.28]	[0.09, 0.23]	[0.00, 0.17]	[0.00, 0.28]
	adj.p.val. = 0.000	adj.p.val. = 0.165	adj.p.val. = 0.150	adj.p.val. = 0.000	adj.p.val. = 0.060	adj.p.val. = 0.053
France	0.64*** (0.04)	0.07 (0.04)	0.15 (0.09)	0.23*** (0.03)	0.06 (0.04)	0.14 (0.09)
	[0.55, 0.73]	[-0.03, 0.16]	[-0.06, 0.36]	[0.16, 0.30]	[-0.03, 0.15]	[-0.06, 0.33]

<i>Group</i>	<i>Applied for daycare</i>			<i>Use daycare</i>		
	Control mean	ITT	ATT	Control mean	ITT	ATT
	adj.p.val. = 0.000	adj.p.val. = 0.211	adj.p.val. = 0.196	adj.p.val. = 0.000	adj.p.val. = 0.221	adj.p.val. = 0.207
<i>Num.Obs.</i>	1946	1946	1946	1946	1946	1946
<i>R2</i>	0.553	0.299	0.319	0.265	0.177	0.177
<i>R2 Adj.</i>	0.463	0.157	0.180	0.116	0.010	0.010
<i>Fixed effects</i>	X	X	X	X	X	X
<i>Mean F-stat 1st stage</i>			313			313

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

Table 7.5: Average treatment effect by migration background on daycare use

	<i>Group</i>	<i>daycare use</i>		
		Avg. cfct.	CATE	Test inference
<i>T2-C</i>	Abroad	0.24*** (0.05)	0.09 (0.07)	
	Abroad	[0.12, 0.36]	[-0.06, 0.24]	
	Abroad	adj.p.val. = 0.000	adj.p.val. = 0.336	
	France	0.20*** (0.06)	0.13* (0.06)	
	France	[0.07, 0.34]	[-0.02, 0.27]	
	France	adj.p.val. = 0.002	adj.p.val. = 0.098	
	TE Abroad - TE France =0			-0.04 (0.10)
TE Abroad - TE France =0			[-0.25, 0.18]	
TE Abroad - TE France =0			adj.p.val. = 0.913	
<i>T2-T1</i>	Abroad	0.19*** (0.05)	0.14** (0.06)	
	Abroad	[0.08, 0.30]	[0.00, 0.28]	
	Abroad	adj.p.val. = 0.000	adj.p.val. = 0.053	
	France	0.18** (0.08)	0.14 (0.09)	
	France	[0.01, 0.36]	[-0.06, 0.33]	

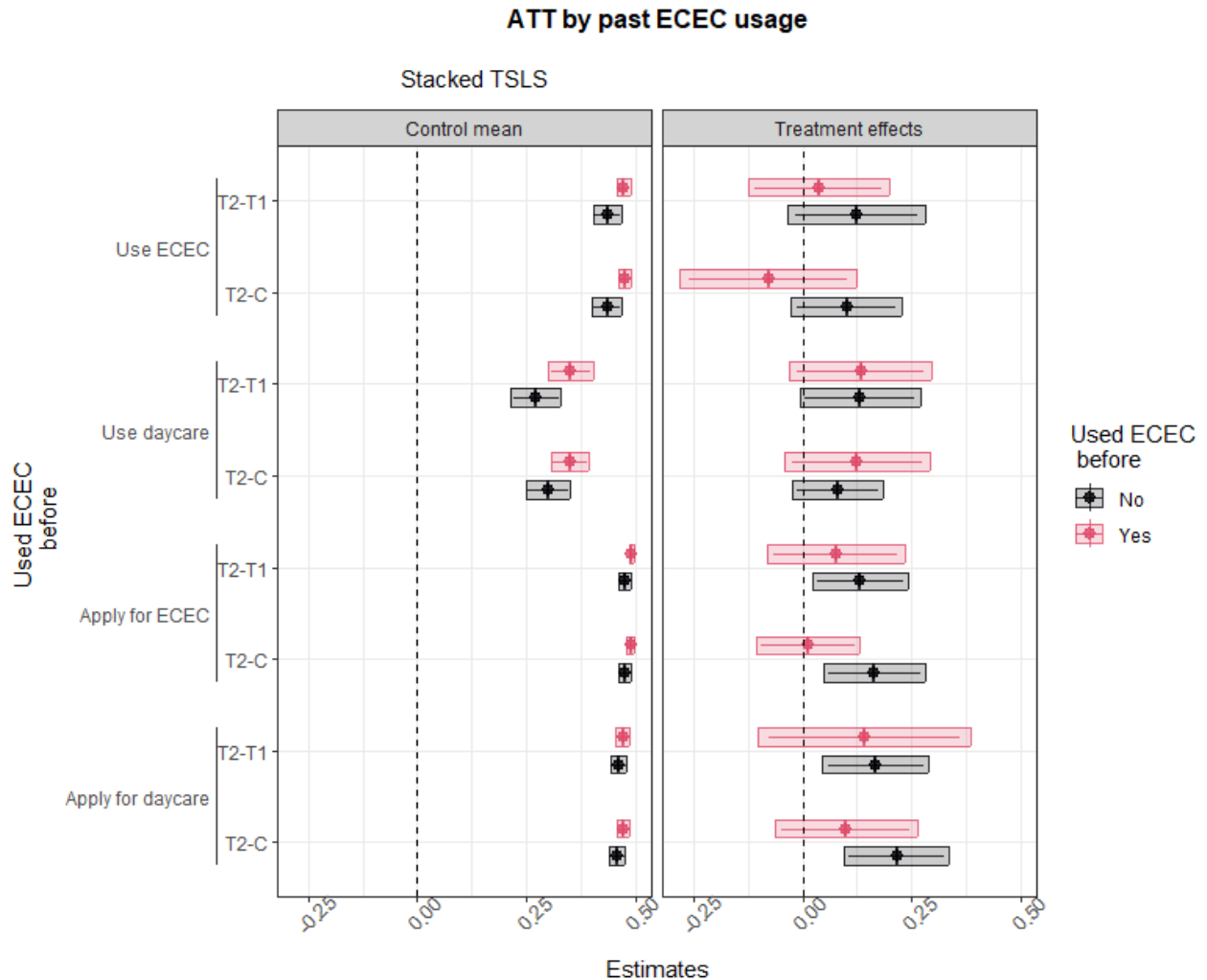
<i>Group</i>	<i>daycare use</i>		
	Avg. cfct.	CATE	Test inference
France	adj.p.val. = 0.040	adj.p.val. = 0.207	
TE Abroad - TE France =0			0.00 (0.10)
TE Abroad - TE France =0			[-0.23, 0.23]
TE Abroad - TE France =0			adj.p.val. = 0.997
<i>Num.Obs.</i>	1946	1946	1946
<i>R2</i>	0.239	0.177	0.177
<i>R2 Adj.</i>	0.085	0.010	0.010
<i>Fixed effects</i>	X	X	
<i>Mean F-stat 1st stage</i>	313	313	
<i>P adjust</i>			Westfall

Sources: Stacked database of pairwise comparisons.
 *= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.
 Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.
 Adjusted p-value and confidence intervals account for simultaneous inference.

C. 7.3 Past ECEC usage

Figure 7.3 presents the average treatment effects on the treated estimates for the four main outcomes by past ECEC usage. The first panel shows the control mean (i.e. the difference between families who have never used ECEC before and those who already had for these four outcomes in the absence of intervention). The second panel shows the average treatment effects on the treated for our four outcomes according to past ECEC usage. Detailed estimates are presented in the next two sections.

Figure 7.3 -Average treatment effects on the treated estimates for the four main outcomes by past ECEC usage



Sources: Stacked database of pairwise comparisons.
 Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.
 Point indicates the ITT and the error bars indicate pointwise 95% CI.
 The Fixed effect model is estimated with block x wave x subsample fixed effects and inverse probability
 The Post-lasso use demeaned covairates selected in a first step by cross validation and
 and estimated with OLS with these variables and interactions with the treatment and inverse probability

1. 7.3.1 Heterogeneous treatment effect on application and access to ECEC by past ECEC usage

Table 7.6 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to ECEC by past ECEC usage. The bundle information + administrative support increased the probability that families who has never used ECEC before apply for ECEC by 21%, and their probability of using ECEC by 20%. We observe no effect on families who already used ECEC before.

Table 7.6: Average effects on application and access to ECEC by past ECEC usage

Group	Applied for ECEC			Use ECEC		
	Control mean	ITT	ATT	Control mean	ITT	ATT
T2-C	0.69*** (0.05)	0.09*** (0.03)	0.16*** (0.05)	0.50*** (0.05)	0.06* (0.03)	0.10* (0.06)
	No [0.60, 0.79] adj.p.val. = 0.000	[0.03, 0.15] adj.p.val. = 0.002	[0.05, 0.28] adj.p.val. = 0.003	[0.38, 0.62] adj.p.val. = 0.000	[-0.01, 0.12] adj.p.val. = 0.116	[-0.03, 0.23] adj.p.val. = 0.141
Yes	0.84*** (0.03)	0.01 (0.03)	0.01 (0.05)	0.69*** (0.04)	-0.04 (0.05)	-0.08 (0.09)
	[0.77, 0.92] adj.p.val. = 0.000	[-0.05, 0.07] adj.p.val. = 0.964	[-0.11, 0.13] adj.p.val. = 0.963	[0.59, 0.78] adj.p.val. = 0.000	[-0.14, 0.06] adj.p.val. = 0.605	[-0.28, 0.12] adj.p.val. = 0.606
T2-T1	0.71*** (0.04)	0.07*** (0.03)	0.13*** (0.05)	0.49*** (0.05)	0.07* (0.04)	0.12* (0.07)
	No [0.62, 0.80] adj.p.val. = 0.000	[0.01, 0.14] adj.p.val. = 0.013	[0.02, 0.24] adj.p.val. = 0.014	[0.38, 0.61] adj.p.val. = 0.000	[-0.02, 0.16] adj.p.val. = 0.134	[-0.03, 0.28] adj.p.val. = 0.142
Yes	0.83*** (0.03)	0.04 (0.04)	0.08 (0.07)	0.66*** (0.04)	0.02 (0.04)	0.04 (0.07)
	[0.76, 0.91] adj.p.val. = 0.000	[-0.04, 0.12] adj.p.val. = 0.489	[-0.08, 0.23] adj.p.val. = 0.467	[0.56, 0.75] adj.p.val. = 0.000	[-0.06, 0.10] adj.p.val. = 0.852	[-0.13, 0.20] adj.p.val. = 0.851
Num.Obs.	1946	1946	1946	1946	1946	1946
R2	0.694	0.398	0.404	0.522	0.325	0.323
R2 Adj.	0.657	0.325	0.332	0.464	0.243	0.241
Fixed effects	X	X	X	X	X	X
Mean F-stat 1st stage			300			300

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

2. 7.3.2 Heterogeneous treatment effect on application and access to daycare by past ECEC usage

Table 7.7 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to daycare by past ECEC usage T2 increased the probability that families who has never used ECEC before apply to daycare by 40%. The administrative support increased the probability that families who has never used ECEC before use daycare by 80%. Results on daycare use are inconsistent for families who has already use ECEC, maybe

because we lack power to detect significant effect consistently across comparison groups. From the regression results, we can conclude for sure that the administrative support increased the probability that these families use daycare by 50% compared to information provision alone but the estimates are not significant when compared to controls in ATT, although they are in ITT.

Table 7.7: Average effects on application and access to daycare by past ECEC usage

Group	Applied for daycare			Use daycare		
	Control mean	ITT	ATT	Control mean	ITT	ATT
T2-C	0.56*** (0.04)	0.12*** (0.03)	0.22*** (0.05)	0.19*** (0.03)	0.04* (0.03)	0.08* (0.05)
	No [0.48, 0.64] adj.p.val. = 0.000	[0.05, 0.19] adj.p.val. = 0.000	[0.09, 0.34] adj.p.val. = 0.000	[0.13, 0.25] adj.p.val. = 0.000	[-0.01, 0.10] adj.p.val. = 0.135	[-0.02, 0.18] adj.p.val. = 0.146
Yes	0.64*** (0.04)	0.05 (0.04)	0.10 (0.07)	0.26*** (0.03)	0.06* (0.04)	0.13 (0.08)
	[0.55, 0.73] adj.p.val. = 0.000	[-0.03, 0.14] adj.p.val. = 0.317	[-0.06, 0.26] adj.p.val. = 0.308	[0.19, 0.33] adj.p.val. = 0.000	[-0.02, 0.15] adj.p.val. = 0.157	[-0.04, 0.29] adj.p.val. = 0.175
T2-T1	0.59*** (0.04)	0.09*** (0.03)	0.17*** (0.06)	0.16*** (0.03)	0.07** (0.04)	0.13** (0.06)
	No [0.51, 0.68] adj.p.val. = 0.000	[0.02, 0.16] adj.p.val. = 0.005	[0.05, 0.29] adj.p.val. = 0.004	[0.10, 0.22] adj.p.val. = 0.000	[-0.01, 0.15] adj.p.val. = 0.070	[-0.01, 0.27] adj.p.val. = 0.064
Yes	0.64*** (0.05)	0.07 (0.06)	0.14 (0.11)	0.26*** (0.04)	0.07* (0.04)	0.13* (0.07)
	[0.53, 0.75] adj.p.val. = 0.000	[-0.06, 0.20] adj.p.val. = 0.363	[-0.10, 0.38] adj.p.val. = 0.338	[0.18, 0.34] adj.p.val. = 0.000	[-0.02, 0.15] adj.p.val. = 0.131	[-0.03, 0.29] adj.p.val. = 0.127
Num.Obs.	1946	1946	1946	1946	1946	1946
R2	0.515	0.250	0.270	0.214	0.124	0.126
R2 Adj.	0.456	0.158	0.182	0.118	0.018	0.019
Fixed effects	X	X	X	X	X	X
Mean F-stat 1st stage			300			300

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

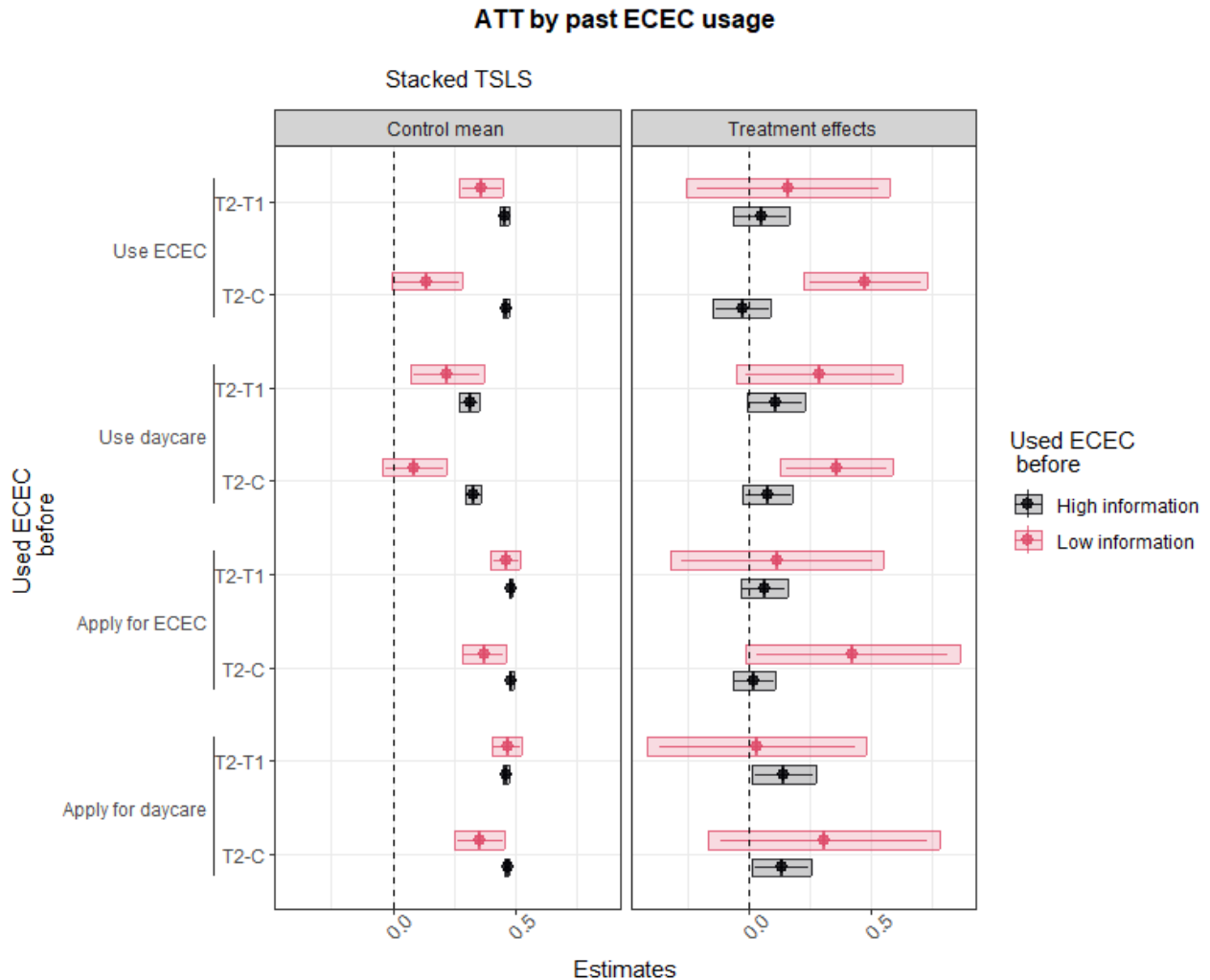
Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

D. 7.4 Information level at baseline

Figure 7.4 presents the average treatment effects on the treated estimates for the four main outcomes by level of information at baseline. The first panel shows the control mean (i.e. the difference between families with the low level of information and families with high level of information at baseline for these four outcomes in the absence of intervention). The second panel shows the average treatment effects on the treated for our four outcomes according to the level of education of the mother. Detailed estimates are presented in the next two sections.

Figure 7.4 - Average treatment effects on the treated for the four main outcomes by level of information at baseline



Sources: Stacked database of pairwise comparisons.
 Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.
 Point indicates the ITT and the error bars indicate pointwise 95% CI.
 The Fixed effect model is estimated with block x wave x subsample fixed effects and inverse probability
 The Post-lasso use demeaned covariates selected in a first step by cross validation and
 and estimated with OLS with these variables and interactions with the treatment and inverse probability

1. 7.4.1 Heterogeneous treatment effect on application and access to ECEC by level of information at baseline.

Table 7.8 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to ECEC by level of information at baseline. The bundle information + administrative support increased the probability that families with a low level of information at baseline apply for ECEC by 116% (46 percentage points) and use ECEC by 960%, while having no effect on families with high level of information at baseline. Interestingly, for this subsample of families, information provision alone (T1) seems to have helped them. Low informed families at baseline are 18 percentage points more likely to apply to ECEC (a 50% increase), and 23 percentage points more likely to use ECEC (a 460% increase). However, due to the small number of observations in the low information at baseline subsample (only 227 families), these results should be taken with a grain of salt.

Table 7.8: Average effects on application and access to ECEC by information level at baseline

Group	Applied for ECEC			Use ECEC		
	Control mean	ITT	ATT	Control mean	ITT	ATT
T2-C	0.80*** (0.03)	0.01 (0.02)	0.02 (0.04)	0.63*** (0.03)	-0.01 (0.03)	-0.03 (0.05)
	[0.74, 0.86] adj.p.val. = 0.000	[-0.03, 0.06] adj.p.val. = 0.803	[-0.07, 0.11] adj.p.val. = 0.803	[0.55, 0.70] adj.p.val. = 0.000	[-0.08, 0.05] adj.p.val. = 0.842	[-0.15, 0.09] adj.p.val. = 0.840
Low information	0.36*** (0.09)	0.24** (0.10)	0.42** (0.20)	0.05 (0.04)	0.27*** (0.06)	0.48*** (0.11)
	[0.16, 0.56] adj.p.val. = 0.000	[0.01, 0.47] adj.p.val. = 0.039	[-0.02, 0.86] adj.p.val. = 0.061	[-0.03, 0.13] adj.p.val. = 0.242	[0.14, 0.40] adj.p.val. = 0.000	[0.22, 0.73] adj.p.val. = 0.000
T2-T1	0.78*** (0.03)	0.03 (0.02)	0.06 (0.04)	0.59*** (0.04)	0.03 (0.03)	0.05 (0.05)
	[0.72, 0.84] adj.p.val. = 0.000	[-0.02, 0.08] adj.p.val. = 0.273	[-0.03, 0.16] adj.p.val. = 0.259	[0.51, 0.66] adj.p.val. = 0.000	[-0.03, 0.08] adj.p.val. = 0.539	[-0.07, 0.16] adj.p.val. = 0.540
Low information	0.54*** (0.09)	0.07 (0.12)	0.12 (0.20)	0.28*** (0.08)	0.10 (0.12)	0.16 (0.19)
	[0.33, 0.75] adj.p.val. = 0.000	[-0.20, 0.35] adj.p.val. = 0.800	[-0.32, 0.55] adj.p.val. = 0.795	[0.10, 0.46] adj.p.val. = 0.001	[-0.17, 0.37] adj.p.val. = 0.616	[-0.26, 0.58] adj.p.val. = 0.616
Num.Obs.	1946	1946	1946	1946	1946	1946
R2	0.720	0.432	0.438	0.549	0.356	0.355
R2 Adj.	0.676	0.343	0.349	0.478	0.254	0.254
Fixed effects	X	X	X	X	X	X
Mean F-stat 1st stage			349			349

Group	Applied for ECEC			Use ECEC		
	Control mean	ITT	ATT	Control mean	ITT	ATT

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

2. 7.4.2 Heterogeneous treatment effect on application and access to daycare by information level at baseline

Table 7.9 presents the average treatment effects on the treated and the intention to treat estimates for the application and access to daycare by level of information at baseline. The bundle information + administrative support increased the probability that families with a **high** level of information at baseline apply for daycare by 21% and use ECEC by 34%.

Turning to families with low level of information at baseline, we lack power to detect any significant effect on the probability to apply, but the point estimates are 31 percentage points. However, see a 1200% increase in their probability to use daycare. Taking the lower bound of the confidence interval would correspond to a 430% increase. Interestingly, for this subsample of families, we again see that information provision alone (T1) seem to have helped them. Low informed families at baseline are 20 percentage points more likely to apply to daycare (a 55% increase), and 10 percentage points more likely to use daycare (a 460% increase).

Table 7.9: Average effects on application and access to daycare by information level at baseline

Group	Applied for daycare			Use daycare		
	Control mean	ITT	ATT	Control mean	ITT	ATT
T2-C	0.62*** (0.03)	0.07** (0.03)	0.13** (0.05)	0.23*** (0.02)	0.04* (0.02)	0.08* (0.05)
	[0.56, 0.68] adj.p.val. = 0.000	[0.01, 0.13] adj.p.val. = 0.030	[0.01, 0.25] adj.p.val. = 0.026	[0.18, 0.28] adj.p.val. = 0.000	[-0.01, 0.09] adj.p.val. = 0.148	[-0.02, 0.18] adj.p.val. = 0.158
Low information	0.34*** (0.09)	0.18 (0.12)	0.31 (0.21)	0.03 (0.03)	0.21*** (0.06)	0.36*** (0.10)
	[0.13, 0.55] adj.p.val. = 0.001	[-0.09, 0.44] adj.p.val. = 0.246	[-0.17, 0.78] adj.p.val. = 0.274	[-0.04, 0.10] adj.p.val. = 0.513	[0.08, 0.33] adj.p.val. = 0.000	[0.13, 0.59] adj.p.val. = 0.001
T2-T1	0.62*** (0.03)	0.07** (0.03)	0.14** (0.06)	0.21*** (0.02)	0.06** (0.03)	0.11** (0.05)
	[0.55, 0.69] adj.p.val. = 0.000	[0.00, 0.14] adj.p.val. = 0.039	[0.01, 0.28] adj.p.val. = 0.030	[0.16, 0.26] adj.p.val. = 0.000	[0.00, 0.12] adj.p.val. = 0.075	[-0.01, 0.23] adj.p.val. = 0.070
Low information	0.56*** (0.09)	0.02 (0.13)	0.03 (0.20)	0.13** (0.06)	0.18* (0.10)	0.29* (0.15)

<i>Group</i>	<i>Applied for daycare</i>			<i>Use daycare</i>		
	Control mean	ITT	ATT	Control mean	ITT	ATT
	[0.35, 0.77]	[-0.26, 0.30]	[-0.42, 0.48]	[-0.01, 0.27]	[-0.05, 0.41]	[-0.05, 0.63]
	adj.p.val. = 0.000	adj.p.val. = 0.983	adj.p.val. = 0.983	adj.p.val. = 0.076	adj.p.val. = 0.152	adj.p.val. = 0.111
<i>Num. Obs.</i>	1946	1946	1946	1946	1946	1946
<i>R2</i>	0.539	0.279	0.300	0.235	0.153	0.156
<i>R2 Adj.</i>	0.466	0.166	0.190	0.114	0.020	0.022
<i>Fixed effects</i>	X	X	X	X	X	X
<i>Mean F-stat 1st stage</i>			349			349

Sources: Stacked database of pairwise comparisons.

*= p<.1, **= p<.05, ***= p<.01 based on point-wise p-value.

Standard errors are cluster-heteroskedasticity robust adjusted at the block x wave level.

Adjusted p-value and confidence intervals account for simultaneous inference.

Joint significance test of null effect using Chi-2 test and p-value are reported at the bottom of the table.

IX. Limitations

While the project covers geographical areas with varied territorial conditions, a limitation is that it essentially focuses on urban territories. Further research would be necessary to explore dynamics in rural areas. Particularly, as the rural offering mainly consists of individual ECEC types, especially childminders (ONAPE, 2021), our research highlights that the effects of our interventions are concentrated on daycare services. Furthermore, the information and administrative support provided to families were presented as coming from a research project, not from a known institutional figure, such as assistance from Cnaf or government services. If the interventions evaluated here were proposed by familiar and identified institutional figures for families, the results could significantly differ from those presented in the report.

X. References

- Archambault, J., Côté, D., & Raynault, M.-F. (2019). Early Childhood Education and Care Access for Children from Disadvantaged Backgrounds: Using a Framework to Guide Intervention. *Early Childhood Education Journal*. <https://doi.org/10.1007/s10643-019-01002-x>
- Berger, L., Solaz, A., & Panico, L. (2020). *The Impact of Center-Based Childcare Attendance on Early Child Development: Evidence from the French Elfe Cohort* [Submitted manuscript].
- Briard, K. (2017). Continuer, réduire ou interrompre son activité professionnelle: Le dilemme des mères de jeunes enfants. *Revue française des affaires sociales*, 1(2), 149. <https://doi.org/10.3917/rfas.172.0149>
- Carbuccia, L. (2023). Behind the Gap: Exploring Determinants of the SES gap in Early Childcare Enrolment in France through Qualitative Insights. *CRIS Working Paper*.
- Carbuccia, L., & Barone, C. (2022). Les politiques d'accompagnement au développement des capacités des jeunes enfants. *E-ssentiel*, 206.
- Carbuccia, L., Barone, C., Borst, G., Greulich, A., Panico, L., & Tô, M. (2020). *Revue de littérature sur les politiques d'accompagnement au développement des capacités des jeunes enfants*. (Dossier d'études 215; Collection des documents de travail de la Cnaf). Caisse des Allocations Familiales. https://www.caf.fr/sites/default/files/cnaf/Documents/Dser/dossier_etudes/DE%20215%20CNAF.pdf
- Cartier, M., Collet, A., Czerny, E., Gilbert, P., Lechien, M.-H., & Monchatre, S. (2017). Pourquoi les parents préfèrent-ils la crèche ? Les représentations hiérarchisées des modes de garde professionnels. *Revue française des affaires sociales*, 1(2), 247. <https://doi.org/10.3917/rfas.172.0247>
- Chaudry, A., Pedroza, J., Sandstrom, H., Danziger, A., Grosz, M., Scott, M. M., & Ting, S. (2011). *Child Care Choices of Low-Income Working Families*. 212.
- Collombet, C. (2018). Les inégalités sociales d'accès aux modes d'accueil des jeunes enfants. Une comparaison européenne. *Revue des politiques sociales et familiales*, 127(1), 71–82. <https://doi.org/10.3406/caf.2018.3289>
- Commission 1000 jours. (2020). *Les 1000 premiers jours Là où tout commence*. Ministère de la Santé et des Solidarités. <https://solidarites-sante.gouv.fr/IMG/pdf/rapport-1000-premiers-jours.pdf>
- CREDOC. (2023). *Quels sont les besoins des familles en situation de pauvreté en matière d'accueil du jeune enfant et d'aide à la parentalité ?* France Stratégie.
- Currie, J., & Almond, D. (2011). Human capital development before age five. In *Handbook of Labor Economics* (Vol. 4, pp. 1315–1486). Elsevier. [https://doi.org/10.1016/S0169-7218\(11\)02413-0](https://doi.org/10.1016/S0169-7218(11)02413-0)
- Deshayes, F. (2020). *Monoparentalité et précarité 3/4. L'enfant en compte. Parenté pratique et circulation des enfants dans la pauvreté* (Dossier d'étude 211). Caisse Nationale des Allocations Familiales.
- Ghirardi, G., Baier, T., Kleinert, C., & Triventi, M. (2022). Is early formal childcare an equalizer? How attending childcare and education centres affects children's cognitive and socio-emotional skills in Germany. *European Sociological Review*, jcac048. <https://doi.org/10.1093/esr/jcac048>
- Goussard, L., & Sibaud, L. (2017). L'articulation travail-famille chez les mères en activité continue et à temps plein: Une question de distanciation subjective ? *Revue française des affaires sociales*, 1(2), 169. <https://doi.org/10.3917/rfas.172.0169>
- Grobon, S., Panico, L., & Solaz, A. (2019). Inégalités socioéconomiques dans le développement langagier et moteur des enfants à 2 ans. *Bulletin Epidemiologique Hebdomadaire*, 1, 8.

Hermes, H., Krauß, M., Lergetporer, P., Peter, F., & Wiederhold, S. (2022). Early Child Care and Labor Supply of Lower-SES Mothers: A Randomized Controlled Trial. *CESifo Working Paper*, 10178.

INSEE. (2020). *Accroître l'offre de places en crèche: Peu d'effet sur l'emploi, une baisse du recours aux autres modes de garde* (INSEE Analyses 55). INSEE.

Lahire, B., & Bertrand, J. (Eds.). (2019). *Enfances de classe: De l'inégalité parmi les enfants*. Éditions du Seuil.

Lazzari, D. A. (2012). *Literature Review of the Participation of Disadvantaged Children and Families in ECEC Services in Europe*. 127.

Leseman, D. P. (2002). Early childhood education and care for children from low-income or minority. *OECD Publishing*, 53.

OECD. (2016). *Who uses childcare? Background brief on inequalities in the use of formal early childhood education and care (ECEC) among very young children*. OECD.

ONAPE. (2018). *L'accueil du jeune enfant en 2017—Données statistiques et recherche qualitative*. ONAPE.

ONAPE. (2021). *L'accueil du jeune enfant en 2020*. ONAPE.

Panico, L., Tô, M., & Thévenon, O. (2015). La fréquence des naissances de petit poids: Quelle influence a le niveau d'instruction des mères? *Population & Sociétés*, N° 523(6), 1. <https://doi.org/10.3917/popsoc.523.0001>

Premiers Pas. (2021). *Synthèse « Premiers pas. Développement du jeune enfant et politique publique »*. Cnaf, HCFEA, France Stratégie.

Radey, M., & Randolph, K. A. (2009). Parenting Sources: How Do Parents Differ in Their Efforts to Learn About Parenting? *Family Relations*, 58(5), 536–548. <https://doi.org/10.1111/j.1741-3729.2009.00573.x>

Rothbaum, F., Martland, N., & Beswick, J. (2008). Parents' reliance on the Web to find information about children and families: Socio-economic differences in use, skills and satisfaction. *Journal of Applied Developmental Psychology*, 29, 118–128. <https://doi.org/10.1016/j.appdev.2007.12.002>

Schwartz, O. (2012). *Le monde privé des ouvriers*. Presses Universitaires de France.

Vandenbroeck, M., De Visscher, S., Van Nuffel, K., & Ferla, J. (2008). Mothers' search for infant child care: The dynamic relationship between availability and desirability in a continental European welfare state. *Early Childhood Research Quarterly*, 23(2), 245–258. <https://doi.org/10.1016/j.ecresq.2007.09.002>

Waldfogel, J. (2002). Child care, women's employment, and child outcomes. *Journal of Population Economics*, 15(3), 527–548. <https://doi.org/10.1007/s001480100072>

Warin, P. (2017a). Chapitre 1. Modèles d'analyse et définition du non-recours. *Libres cours Politique*, 17–44.

Warin, P. (2017b). Chapitre 8. La non-demande, un comportement à dimension politique. *Libres cours Politique*, 157–174.

Zaouche Gaudron, C., Boyer, D., Lacharité, C., Modak, M., Séraphin, G., & Ulmann, A.-L. (2021). *Accueillir les enfants en situation de pauvreté* [Séminaire Premiers Pas]. https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/presentation_-_anne-lise_ulmann_-_seminaire_premiers_pas.pdf