



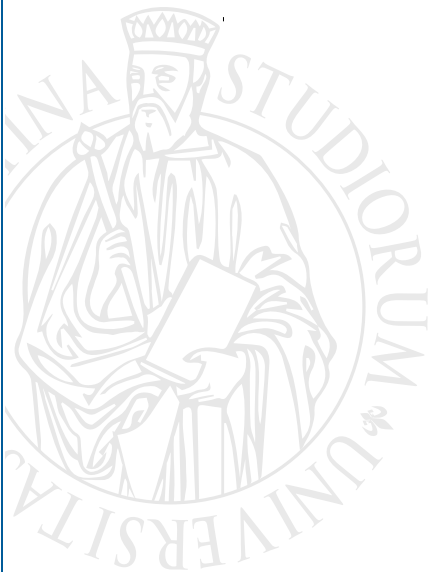
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# Can Policy Reforms Enhance Fertility? An Ex-Ante Evaluation through Factorial Survey Experiments

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# Can Family Policies Enhance Fertility?

## An Ex-Ante Evaluation through Factorial Survey Experiments

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### Abstract

This paper explores the family policies-fertility nexus by assessing the potential role of parental leaves, childcare services, and child benefits on fertility through factorial survey experiments (FSE). We focus on Italy, a country whose lowest-low fertility is often traced back to its familistic and sub-protective welfare state. We surveyed 4,022 respondents aged 20-44 and exposed them to various scenarios characterized by different family policy packages. We asked them to ascribe short-term fertility behavior to a fictitious couple under each scenario. Results show that each family-friendly policy envisioned positively impacts ascribed fertility. The availability of full-time, public childcare services seems more relevant than higher child benefits, whereas more generous and gender-equal parental leaves are perceived as less relevant. However, results suggest that only a consistent mix of financial benefits, parental leave schemes, and childcare provisions can boost fertility. In contrast, marginal changes in single policy levers are most likely ineffective. The results of our FSE point out that a couple's socioeconomic status is perceived as more important than family policies for fertility, as ascribed fertility increases when both partners are employed and household income is high. In conclusion, we discuss the policy implications of our findings.

**Keywords:** Family policy; Fertility; Factorial survey experiments; Italy

### Introduction

Extensive literature has investigated the impact of family policies on fertility; however, evidence is mixed and somewhat inconclusive, and results suffer from theoretical and methodological limitations. First, quantifying the potential fertility impact of family policies is complicated because such estimation should consider family policy packages, whereas most studies analyze the effects of single instruments and do not assess the possible existence of complex interactions between them (Gauthier 2008; Luci-Greulich & Thevenon 2013). The scientific literature has often analyzed the effects of single policy levers on fertility rates, sometimes finding non-negligible impacts (see, e.g., Rindfuss et al. 2010; Raute 2019). In addition, an often hidden aspect in empirical tests is that it is not only the availability of family policies (leave regulations, economic-based incentives, or childcare availability) that affects fertility but also the broader perception of these policies (Hoem 2008; Mills et al. 2011).

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Finally, assessing the effects of family policies on fertility and understanding the mechanisms operating between the political setting and family behavior require *ad hoc* research setups, such as using micro-level (quasi-)natural experiments (Kreyenfeld 2021; Neyer & Andersson 2008).

This paper addresses all these theoretical and empirical drawbacks of existing studies by taking a novel perspective to assess the role of family policies on fertility through the use of factorial survey experiments (FSE). In our innovative experimental setting, we expose respondents to several scenarios (vignettes) characterized by different family policy packages, asking them to ascribe short-term fertility to a fictitious couple under these varying circumstances. Vignette studies aim to illuminate attitudes and perceptions toward specific phenomena. The primary objective of our vignette study is to test potential recipients' perceptions of the possible fertility effects of the selected family policies. In this sense, our study serves as an *ex-ante* evaluation of the perceived effectiveness of policy reforms that could be implemented to enhance fertility. In our vignettes, we concentrate on policies that target parenthood, and in particular on those policies that are most closely related to fertility: parental leave policies, childcare services, and child benefits. They essentially respond to families' needs for time, money, and services around childbirth(s) and during the childrearing period (Luci-Greulich & Thévenon 2013). These policies constitute the core of welfare-state policies related to childbearing and the rearing of (small) children (Neyer 2003). In the literature, they are widely acknowledged as the primary components defining 'family policy' (Neyer & Andersson 2008; Thévenon & Gauthier 2011) and have been used to assess the effects of family policies on fertility in the wealthiest societies (Luci-Greulich & Thévenon 2013).

We take Italy as a meaningful case study, where the current political debate on the use of different combinations of family policies is especially lively. Italy's persistently low fertility has spurred public and political interest in whether family policies could maintain or increase fertility levels. After decades of ups and downs between low and *lowest-low* fertility rates, the recent COVID-19 pandemic has further exacerbated the negative trend of Italian fertility, in parallel with a continuous decline in the absolute number of births. In 2021, Italy re-entered the lowest-low fertility regime, and the average number of children per woman, i.e., the TFR, equals 1.20 in 2023.

The contribution of this work is threefold. First, this paper responds to Gauthier's (2008: 27) call that demographers “*need to devote a greater effort to improving measurement of policies, especially the whole package of policies designed for families*” while also exploring group-specific differences in uptake. Second, this paper will offer Italian policymakers an evaluation of how a specific set of family policies might be perceived by the population of

potential recipients. Finally, we propose a new methodological approach to provide an ex-ante evaluation of the potential impact of family policies on fertility by utilizing an experimental setting. The use of experiments in the social sciences has increased appreciably in recent years (Jackson & Cox 2013; see Guetto et al. 2022; Lappegard et al. 2022; Vignoli et al. 2022; Matera et al. 2023 for demographic applications), but never for an ex-ante, causal evaluation of the perceived effectiveness of policy reforms that could be implemented to enhance fertility in a lowest-low fertility context. Hence, this paper will contribute to methodological advances in demographic research.

## **Background**

### **Understanding “Family Policy Packages”: The Significance of Parental Leaves, Child Benefits, and Childcare Services**

Childbearing and childrearing necessitate the confluence of two essential requisites: the implementation of measures conducive to achieving a healthy paid work-family life equilibrium and the availability of financial resources (Luci-Greulich & Thévenon 2011; Adema et al. 2020). Hence, an adequate mix of financial benefits, parental leave schemes, and the availability of childcare services have the potential to boost fertility, particularly in the long term, by mitigating some of the direct costs of children and reducing the indirect costs through work-family reconciliation measures (Thévenon & Gauthier 2011). Against this backdrop, our policy framework is informed by a dual-pronged approach. First, we consider the implementation of policies geared towards fostering paid work-family life balance through parental leave schemas and childcare availability. There is empirical evidence and studies for Italy that highlight the importance of having two decent jobs to avoid both poverty and to increase the likelihood of having children (e.g., Vignoli et al. 2012; Barbieri et al. 2015). Second, our proposed policy architecture is characterized by the provision of financial support to individuals. This policy paradigm is underpinned by the well-documented socioeconomic vulnerabilities attendant to childrearing responsibilities in Italy (e.g., Barbieri & Bozzon 2016).

### **Family Policies and Fertility: The Magnitude of the Effect and Its Heterogeneity**

Theoretically, there are compelling reasons to anticipate that family policies – namely financial benefits, parental leaves, and childcare services – would have a beneficial effect on fertility. However, when it comes to actual evidence of the impact of fertility policies, the results are less straightforward. Although many studies have demonstrated a positive effect of policies, there is no agreement on the magnitude of the effect, or whether it is short-term or long-term (Gauthier 2007). Concerning financial benefits, several studies have found evidence supporting

the notion that generous benefits positively affect fertility behavior (see, e.g., Bonoli 2008 for Switzerland; Cohen et al. 2013 for Israel; Laroque & Salanié 2014 for France). However, contradictory findings exist. For instance, Andersen et al. (2018) studied the effect of a cash-for-care policy introduced in Norway in 1998 and found no evidence of an increase in short-term fertility. Similarly, Riphahn and Wijnck (2017) analyzed the 1996 reform of the German child benefit program and found no statistically significant effect on low-income couples, although some support was observed for a positive effect on the transition to the second child among high-income couples. Similar mixed findings are observed regarding parental leave policies. Thomas et al. (2022) reviewed 11 experimental or quasi-experimental studies evaluating the effect of 23 policy reforms on parental leave in Europe and North America and found a mixture of positive, negative, and null impacts on fertility. Additionally, Duvander et al. (2020) analyzed the impact of policy reforms introducing the father's quota in Norway and Sweden and found no significant impact on fertility in Norway, with only a temporary positive effect observed on third births among low-income couples in Sweden. Evidence regarding the effect of childcare on fertility rates also varies across different institutional contexts. Some studies report a positive impact/association (e.g., Hilgeman & Butts 2009 for 18 European countries; Wood 2019 for Belgium) while others show non-significant results (e.g., Lappegard 2010 for Norway; Hank & Kreyenfeld 2003 for Germany). A detailed discussion of existing findings on the childcare-fertility link in high-income countries is provided by Scherer et al. (2023).

Two reviews can be located to help sort out a crowded and fragmented empirical literature on the linkages between family policies and fertility. The influential review of Gauthier (2007) suggested that the effects of policies were small and mainly temporary: an impact of policies within the range of 0.05-0.2 children per woman. Nonetheless, she concluded that evidence was limited, and more solid causal evidence was needed. Thévenon and Gauthier (2011) added that the policy environment accounts for only a limited share of the variation in fertility across developed countries. Some of the variation can be attributed to financial support, but its impact seems mainly to accelerate the timing of births. Fourteen years after Gauthier's review (2007), Bergsvik, Fauske, and Kaldager Hart (2021) have synthesized results based on new developments in empirical causal modeling, concluding that policies may be more important for fertility than previously thought. They provide a systematic review of the available (quasi-)experimental evidence since 1970 in Europe, the US, Canada, and Australia. They conclude that childcare expansions have a lasting impact on fertility, whereas the impact of child benefits is substantial yet transitory. In addition, by leaning on updated

evidence and giving the most weight to large reforms evaluated in credible analytical designs, they conclude that generous parental leave expansions also have substantial and lasting fertility effects. However, these effects can be measured only when due allowance is made for policy changes that are large enough to affect fertility.

Among the possible reasons beyond such a small-to-moderate positive effect of family policies on fertility, virtually all prior authors advanced a methodological issue, namely the fact that analyses often focus on the impact of a single policy on fertility, ignoring the possible combined effects of different instruments. What may matter for couples is not each policy on its own but the actual package of policies. In addition, it is important to explore the heterogeneity in individuals' and families' responses to policies. The positive effects of financial child benefits are likely to vary based on household income. However, empirical evidence is mixed on whether the fertility response is stronger among low- or high-income households (see, e.g., Riphahn & Wijnck 2017), which may depend on policy design. Also, policies to reconcile work and family duties may boost fertility in low-fertility countries – possibly mediated by improved female labor force participation (Wesolowski & Ferrarini 2018); however, they are likely to be more relevant for heterosexual couples where both partners are working (Kalwij 2010; Wood & Neels 2019). The effects might also differ by parity transitions, but even in this case, the empirical evidence is mixed, with some studies finding stronger effects for the transition to parenthood (Billingsley & Ferrarini 2014) and others on second and higher-order childbirths (Rindfuss et al. 2010).

Through implementing a FSE, this paper analyzes potential recipients' perceptions of the possible fertility effects of different family policy packages while also considering the possible moderating role of couples' characteristics, namely household income, both partners' employment condition, and parity.

### **Family Policies and Fertility: Perception of Policies**

Bourdieu (1996) asserted that family policies not only target families but also shape them. Family policies operate on two levels: the level of facts and the level of perceptions (Neyer & Andersson 2008). The effectiveness of any policy is influenced by the broader societal context, including social norms (McDonald 2002). Family policies reflect the norms they contribute to create, maintain, or reinforce, and signal what types of behavior are encouraged or at least supported. They, therefore, exert an impact also through their symbolic and normative functions. The potential effect of family policies on actual behavior depends on how individuals perceive the policy and what it signifies for their present and future life course. In other words, family policies and fertility are likely to be endogenous – policies not only

influence fertility and bring about change but are also often a response to changes in fertility and an integral aspect of those changes (Letablier et al. 2009; Mills et al. 2011; Neyer & Andersson 2008). As advanced by Hoem (2008: 256), family policies aimed at reducing the gap between intentions and outcomes “*will remain an ephemeral goal where such coordination is lacking*”. Generous arrangements for parental leave, child benefits, and childcare may be considered desirable in their own right, but such policies alone are unlikely to succeed in raising the fertility level on a grand scale; they must be embedded in a “family-friendly culture” deliberately nurtured by the state and shared by policy recipients (McDonald 2002; Neyer & Andersson 2008).

Two considerations are important in this context. First, the presence of a family-friendly environment alone does not guarantee higher fertility rates, as it must contend with competing interests and preferences, such as the growing prevalence of child-free orientations (Savelieva et al. 2023). However, the evidence of a disparity between desired and actual fertility rates in Western societies suggests a role for family policies (Beaujouan & Berghammer 2019). This is particularly pertinent in countries like Italy, which has experienced decades of low and lowest-low fertility rates amidst a welfare regime that offers inadequate support. In Italy, a significant portion of very low fertility may be involuntary; surveys indicate a substantial gap between the desired (around two children) and actual number of children born (Istat 2024), the widest in Europe (Beaujouan & Berghammer 2019).

Second, the perception of a family-friendly context in the wealthiest countries extends beyond policies directly related to fertility. It encompasses various policy areas, reflecting a broader and more interconnected spectrum of influences on the overall perception of a family-friendly environment. We acknowledge the importance of delving into the connections between family policy and various societal components such as the labor market, education system, and housing market. For instance, labor market policies are crucial for Italy. Studies employing a causal inference framework demonstrated how precarious employment has by now become a structural factor discouraging the transition to parenthood among young Italians (Vignoli et al. 2020a; Guetto et al. 2023).

In this paper, our emphasis lies on prioritizing policies integral to the welfare state concerning childbearing and the childrearing of (small) children (Neyer 2003). Specifically, our focus encompasses parental leave policies, childcare services, and child benefits, which form the cornerstone of our analysis. Within our FSE approach, respondents are exposed to several scenarios (vignettes) characterized by different family policy packages and asked to ascribe short-term fertility behavior to a fictitious couple under these different policy settings.

This helps to shed light on the perceived efficacy of a specific set of family policies and their combinations for fertility decisions and how such perception varies based on the characteristics of the fictitious couple.

### **Family Policies and Fertility in Italy**

Over the last decades, family policies in Italy have been relatively modest, both in terms of financial support, parental leave, and the availability of caregiving services (Saraceno 2015). As regards financial support, starting from the 1980s a *household allowance* was provided to families whose income derived from dependent work for at least 70%; hence, self-employed and non-employed were excluded. An additional allowance for the third child was introduced in 1999, together with maternity benefits provided to mothers without eligibility for social security benefits and residing in economically disadvantaged households. Starting from March 2022, all existing measures were replaced by the General Family Allowance (GFA), a new single and universal (i.e., it applies to all children under 18) allowance whose amount paid is means-tested on the basis of household income and wealth (for a more detailed discussion, see Dalla Zuanna & Mc Donald 2023).

At the time of writing, parental leave policies for dependent workers include five months of mandatory maternity leave, plus ten additional months of parental leave to be taken before the child turns 12. The couple can share this period (fathers are entitled to take it starting from 2000), but neither of the two can take more than six months. The mandatory leave for dependent workers is usually fully paid: 80% of previous earnings is provided by the National Institute for Social Security, while the remaining share is in charge of the employers, but rates change depending on the sector and the type of employment contract. The additional months of parental leave are compensated with an allowance equal to only 30% of the salary for all workers – if it is taken before the child turns 7, otherwise it is only due to workers with income under a certain threshold, which means that men are not encouraged to take them (Naldini & Saraceno 2022).<sup>4</sup> Paternity leave was introduced in 2012 and consisted of three days (only one day was mandatory), but it was taken by only 12% of fathers. It was then extended to four days in 2018 (when it was taken by about 33% of fathers) and amounts to ten days at the time of writing; however, the Italian parental leave scheme remains among the least gender-equality-oriented (Naldini & Saraceno 2008; Escobedo & Wall 2015; see also [www.leavenetwork.org](http://www.leavenetwork.org)).

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<sup>4</sup> Self-employed mothers are entitled to take 5 months of maternal leave (not mandatory, paid with an allowance equal to 80% of the daily wage established annually by law for the type of activity performed), plus three additional months to be taken before the child turns one (also paid with an allowance equal to 30% of the daily wage).



It must be acknowledged that what we described are the typical parental leave schemes available in Italy for unlimited-time employees, especially those in the public sector. The situation is more varied and, therefore, more challenging to outline for the self-employed and private-sector employees, whose entitlements may change based on specific employment conditions. This is one of the reasons why, in our vignettes, we assigned unlimited-time employment to the members of the fictitious couple in scenarios where either of the two is employed.

Finally, early childhood education and care (ECEC) services for children under age 3 remain inconsistent in terms of quality and geographical coverage across the country. Among the main reasons, the decision to arrange and finance this type of provision ultimately goes to the regions and municipalities. Another crucial aspect is the vicious circle of low mothers' employment rates and low demand for ECEC services, particularly in the South. Data from 2022 indicate that public facilities provide childcare for 13.4% of children under age 3 at the national level (it rises to 27.2% if private facilities are also considered), with large regional heterogeneity – e.g., from 36.1% in Central regions to 15.2% in the South (Istat 2022).

The established argument is that the Italian familistic and sub-protective welfare state is among the main causes behind the country's prolonged low fertility (Matysiak & Vignoli 2013; Naldini & Saraceno 2022). However, there is limited convincing empirical evidence on the causal effect of family policies. Among the few studies made on the Italian case, Del Boca (2002) found that the availability of publicly provided childcare increases the probability of having a child. Boccuzzo et al. (2008) analyzed the fertility impact of a bonus at birth implemented in the years 2000-2003 in the northern Italian region of Friuli-Venezia Giulia, finding substantial evidence for a positive effect, especially among low-educated women with at least two children. Another study focusing on the same Italian region showed that the effect of daycare subsidies on the probability of having another child in 2017-2020 is positive, but rather small compared to other factors such as employment (Dimai 2023).

Understanding the potential contribution of family policies to fertility levels is especially crucial in contexts – like the Italian one – characterized by limited expenditure for family policies *as well as* low spending capacity due to high public debt, in order to identify the measures most likely to have an effective impact on fertility. Given these specificities of the Italian context, the focus on parental leave policies, childcare services, and child benefits is particularly timely. Indeed, these policies are actively discussed in current debates, exemplified by the recent introduction of the universal child allowance. In a similar vein, the focus on childcare availability is justified in light of the present public discussion and the

substantial allocation of the National Recovery and Resilience Plan (NRRP) funds exclusively in this direction. The childcare activity plan of NRRP Mission 4 aims to increase the uptake of ECEC services by allocating €4.6 billion for childcare (Next Generation EU 2021<sup>5</sup>).

### **Factorial Survey Experiments for the Analysis of Ascribed Fertility**

We assess the causal impact of family policies on ascribed fertility using factorial survey experiments (Auspurg & Hinz 2014). A factorial survey is a multivariate experiment through which a researcher creates different descriptions of fictional situations (vignettes) judged by respondents under a particular aspect of interest, which represents the “dependent variable” of the vignette. In our case, the situations to be evaluated correspond to different scenarios characterized by different family policies, and the dependent variable of interest is a fictitious couple’s short-term fertility behavior. In other words, respondents answered a question about how likely it is – on a scale from 0 to 10 – that the fictitious couple will have a(nother) child in the next three years, given the family policies described in the vignette.

The outcome of our vignettes may not represent, strictly speaking, an assessment of the third person’s expected fertility. Respondents will, of course, introduce their personal evaluation of the scenario when ascribing a certain level of expected fertility to the fictitious couple, which is precisely the objective of this approach. Through the expedient of the “ascribed” fertility, we aim to understand whether and which policies respondents perceive as more important for fertility decisions. Asking about ascribed fertility, i.e., referring to a fictional couple instead of directly to the respondent, has several methodological advantages. First, it helps reduce social desirability bias, which is the tendency for individuals to respond in a way that they believe is socially acceptable or expected. People might feel pressure to conform to societal norms, like the 2-child norm. Second, it makes it more plausible to evaluate counterfactual scenarios; for example, childless respondents do not have to imagine themselves having a child, which can be a difficult exercise. Instead, they can evaluate the likelihood of the fictitious couple having a second child under different circumstances. Third, referring to a fictitious couple allows downplaying the influence of person-specific contingent situations compared with alternative direct questioning techniques. When respondents are asked directly about their expected fertility, they reasonably consider a range of social and economic factors beyond family policies, such as their own and their partner’s employment situations, family income, and the availability of grandparents for childcare support. By referring to a fictitious

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<sup>5</sup> <https://www.governo.it/sites/governo.it/files/PNRR.pdf>

couple, we could fix all of these factors in our vignettes—for instance, in the text common to all vignettes, we set that the parents of both partners live over an hour's drive away. When presented with a hypothetical couple's situation, respondents are encouraged to focus on the elements described in the scenario, reducing the influence of other person-specific factors. Finally, adopting an FSE approach makes it possible to evaluate the potential fertility consequences of different policy packages, through respondents' judgments on scenarios including different combinations of family policies. In doing so, experiments guarantee internal validity, i.e., respondents' reactions to randomly assigned vignettes reflect variations in the vignettes only.

It is important to stress that the expected fertility respondents ascribe to the fictitious couple cannot be interpreted as a proxy for their own expected fertility, let alone for their actual fertility behavior under the different scenarios envisaged in the vignettes. Our results are also based on the responses of individuals who are voluntarily childless, or who have already reached their desired fertility at the moment of the interview. Through the vignettes, we analyze how respondents think couples would typically behave given a certain policy situation, thus providing evidence on whether (and which type of) family policy reforms are perceived as effective or not for fertility decisions.

### **Our Experimental Setting**

Our vignettes depict the situation of a heterosexual couple named Caterina (30 years old) and Tommaso (32 years old). Each vignette includes specific details about various dimensions that we manipulate for the study. The first three dimensions pertain to the couple's situation – whether the couple already has a child, both partners' employment status, and household income. The second set of dimensions relates to family policies and focuses on the three typical instruments of family policy packages (Luci-Greulich & Thévenon 2013), i.e., child benefits, childcare services, and parental leaves. While we decided to focus on the abovementioned couple's characteristics, we acknowledge that many other factors – which have been excluded to limit the complexity of the vignettes' design – may well influence the family policy/fertility link. In particular, two factors that may play a chief role are the fictitious couple's agreement to have a(nother) child and the availability and geographical proximity of grandparents (Rutigliano et al. 2023). To prevent any interference, we “fixed” these factors by ensuring that Caterina and Tommaso agree to have a(nother) child and that the parents of both live over an hour's drive away. Accordingly, before listing the six dimensions presented in the vignettes, we specify these conditions to provide a consistent basis for respondents' evaluations. In addition, when manipulating the employment status dimension, we ensure that both partners

(if employed) are employees holding an unlimited-time contract, to cancel out the possible influence of exposure to employment instability (Alderotti et al. 2021). Table 1 provides an overview of the vignette dimensions with the respective vignette levels, while Figure A1 in the appendix illustrates a sample vignette with the introductory text.

The first dimension we manipulate in the vignettes regards whether the couple already has a child. In one set of vignettes, Caterina and Tommaso are a childless couple, while in another set, they are parents to a three-year-old child. The couple's employment status can also vary between two levels: either both members are employed with an unlimited-time contract, or only Tommaso has an unlimited-time contract while Caterina does not work. Finally, we set three levels of household income (low, medium, and high), with exact values changing depending on the couple's employment status. In order to assign plausible values to the net monthly household income dimension, we relied on estimates obtained from the 2020 wave of the Survey on Household Income and Wealth (SHIW), carried out by the Bank of Italy. We started by estimating the medium-income scenario, which, when only Tommaso works, roughly corresponds to the median net monthly income of Italian one-earner families with two or three components. This value is approximately 1,650€, but we slightly reduced it (by about 10%) to account for Tommaso and Caterina's young age, obtaining 1,500€. Starting from this, we computed the medium-income scenario for the dual-earner couple by adding the same income reduced by 20% to reflect the gender gap in wages (Istat 2021), obtaining 2,700€ (i.e., 1,500€ + 1,200€). Then, we generated the low-income scenarios and the high-income scenarios by, respectively, decreasing and increasing the medium income by 25%. Accordingly, the low scenario is characterized by a net monthly household income of 1,100€ if only Tommaso works, while it corresponds to 2,100€ if both Tommaso and Caterina work. The high-income scenarios correspond to 1,900€ and 3,300€ for the single-earner and dual-earner couple, respectively.

Turning to the policy dimensions, each of the three dimensions has three levels. The baseline level closely resembles the existing Italian family policy situation, while the other levels represent plausible improvements for each policy instrument. As far as the child benefits, their exact amount depends on the couple's household income<sup>6</sup>. The first level – corresponding to the amount that the couple would receive based on the existing GFA in Italy – is designed by assigning the highest amount (175€) to couples with a low net monthly income (that we

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<sup>6</sup> As anticipated in the background, the actual amount of the GFA in Italy depends on both household income and the couple's wealth. In this case, we assigned values based on household income as defined in the vignette.

defined as 1,100€ or 1,500€), the average amount (100€) to couples with a medium net monthly income (that we defined as 1,900€ or 2,100€), and the lowest amount (50€) to couples with high income (that we defined as 2,700€ or 3,300€). Tables A1 and A2 in the appendix provide a schematic overview of the relationships between the couple’s employment situation, household income, and the benefit amount across the various scenarios. In the second level, all amounts are doubled; and in the third (i.e., best-case) level, all amounts are tripled with respect to the baseline. Regarding childcare availability, setting a baseline level – i.e., the one resembling the actual situation in the country – is not straightforward, given the high heterogeneity in childcare availability at the municipal level in Italy. However, considering the national childcare coverage rate of approximately 27%, primarily concentrated in large cities (Istat 2022), we describe the baseline scenario as one with virtually no available places in the nurseries near Tommaso and Caterina's place of residence. In the medium scenario, there are places available but only on a part-time basis, during the morning (i.e., 8 a.m. – 1 p.m.); while in the best scenario, there are places available full-time. The last policy dimension is parental leave. Also in this case, the baseline scenario represents the situation of the parental leave for dependent workers in Italy at the time of the survey, namely 5 months of compulsory leave for the mother and 10 days for the father (fully paid), plus additional 10 months that can be taken by either the mother or the father before the child turns 12 (paid at 30%). The intermediate scenario improves the first one in terms of generosity because the additional leave is paid at 80%; while the best-case scenario is improved also in terms of gender equality since both partners are entitled to take 5 months of fully-paid parental leave<sup>7</sup>.

At the end of each vignette, respondents are asked how likely is it – on a scale from 0 to 10 – that the fictitious couple will have a(nother) child in the next three years.

**Table 1** – Vignette dimensions and levels

<b>Vignette dimension (variables)</b>	<b>Levels of dimensions (values)</b>
Parity	<ol style="list-style-type: none"> <li>1. Childless</li> <li>2. Already have a 3-year-old child</li> </ol>
Employment status	<ol style="list-style-type: none"> <li>1. Both are employed with an unlimited-time contract</li> <li>2. He is employed with an unlimited-time contract; she is not employed</li> </ol>

<sup>7</sup> We included three levels for each policy dimension to maintain symmetry and consistency, aiding comparability and interpretability. A fourth level for parental leave equality while leaving unaltered the level of generosity would have increased vignette complexity, making data collection and analysis more challenging. Thus, we opted for a balanced design that is comprehensive yet feasible for participants.

Household income ( <i>a=only he works; b=both work</i> )	<ol style="list-style-type: none"> <li>1. a=1,100€; b=2,100€</li> <li>2. a=1,500€; b=2,700€</li> <li>3. a=1,900€; b=3,300€</li> </ol>
Child benefit ( <i>values change depending on the couple's household income, see Table A2</i> )	<ol style="list-style-type: none"> <li>1. <b>Real amount</b> that the couple would receive based on existing GFA in Italy: 175€ for the low-income scenario; 100€ for the medium-income scenario; 50€ for the high-income scenario</li> <li>2. <b>Twice the real amount</b> that the couple would receive</li> <li>3. <b>Three times the real amount</b> that the couple would receive</li> </ol>
Childcare services	<ol style="list-style-type: none"> <li>1. Virtually <b>no places</b> available in the municipality's nurseries</li> <li>2. Availability in the municipality's nurseries, <b>only part-time</b> (8 a.m. – 1 p.m.)</li> <li>3. Availability in the municipality's nurseries, <b>full-time</b> (8 a.m. – 5 p.m.)</li> </ol>
Parental leave	<ol style="list-style-type: none"> <li>1. <b>Realistic scenario</b>: 5 months for the mother, 10 days for the father (fully paid). Additional 10 months to be taken by either the mother or the father before the child turns 12 (paid at 30%)</li> <li>2. 5 months for the mother, 10 days for the father (fully paid). Additional 10 months to be taken by either the mother or the father before the child turns 12 (<b>paid at 80%</b>)</li> <li>3. 5 months for the mother, <b>5 months for the father</b> (fully paid). Additional 10 months to be taken by either the mother or the father before the child turns 12 (<b>paid at 80%</b>)</li> </ol>

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## Data and Methods

### Data Collection and Experimental Design

The data collection was conducted by the survey company Demetra through their opt-in online panel. The company is well-known in Italian academic circles for its high-quality and rigorous data collection<sup>8</sup>. Since respondents self-selected into the panel and then decided whether to participate in our survey, the resulting sample is not based on probabilistic sampling procedures. However, we strived to ensure the representativeness of our data. First, we relied on a quota sampling strategy, imposing national quotas by 5-year age groups, gender, education, macro-region of residence, and combinations of union type (i.e., living apart together, cohabitations, marriages) and parity (childless, with a child). Individuals not in a union were excluded from the sample. Quota sampling ensures that the final sample is virtually distributed as the country benchmark given by the statistics provided by the Italian National Institute of Statistics (Istat) on key sociodemographic factors. We used post-stratification

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<sup>8</sup> Demetra is a member of ASSIRM (Italian Association for Market, Social and Opinion Research Institutes) and provides statistical surveys for other Italian research institutes and numerous Italian and foreign universities. Its panel is used by Lucid, an international online survey company that has a strong academic reputation (Coppock & McClellan 2019).

weights to adjust for small deviations from the benchmark population statistics. Second, we tested that the distributions of some key variables (respondents' fertility intentions, employment condition, and type of contract) in our sample resemble very closely those obtained through the nationally representative "Family & Social Subjects" survey carried out by Istat in 2016. At the end of the collection procedure, we could rely on a sample of 4,022 respondents aged 20-44.

For the six dimensions included in our design (two with two levels and four with three levels) the completely crossed vignette universe includes  $2^2 \times 3^4 = 324$  combinations of vignette characteristics. Accordingly, we opted for a mixed design – i.e., different groups of respondents are assigned different vignette sets, but within each group, respondents evaluate the same set of vignettes. This mixed design allows us to obtain enough observations for each vignette with a smaller sample size compared to a between-subject design. The assignment of vignette sets (decks) to groups and the order of vignettes within each set were fully randomized, which is efficient for large sample sizes. In order to determine the size of each vignette set, we followed the guidelines provided by Auspurg and Hinz (2015), who suggest not to exceed 10 vignettes per respondent. We thus opted for 6 vignettes for each deck, because it demands relatively low fatigue and yields enough variation within respondents. Considering that each of the 4,022 respondents evaluated six vignettes (for a total of 24,132 observations), we obtained, on average, 74 replications for each possible vignette.

The first part of the questionnaire included questions about respondents' socio-demographic characteristics required to fill quotas (e.g., age, sex, union status, education, region of residence, parity), followed by the six vignettes. Respondents filled out the questionnaire online. The data collection started on 23 December 2022 and was completed on 10 February 2023. To ensure high-quality responses across all the vignettes we inserted an attention check right after the first vignette. Respondents were asked a multiple-choice question about where Caterina's and Tommaso's parents live (over an hour's drive away): If they provided the wrong answer, they were excluded from the survey<sup>9</sup>. In addition, starting from the second vignette, we highlighted in bold all the dimensions' levels that have changed with respect to the previous vignette. For example, if in the first vignette, the child benefit is 175€, while in the second it is 350€, the latter appears bolded in the second vignette. We did this to help readers track which dimensions change between two consecutive vignettes.

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<sup>9</sup> Between 15% and 20% of all cases contacted for completing the survey were excluded immediately after the first vignette due to failing the attention check.

## Analysis Plan

As a first step, we focused on analyzing single vignettes, adopting a purely “between” approach. We thus implemented six Ordinary Least Squares (OLS) regression models, one for each vignette, with the respondents’ answers to the question about the fictitious couple’s expected fertility (0-10) as the dependent variable and the vignette dimensions as independent variables. Results obtained from the analysis of the first vignette are of special interest, as they are not affected by carryover effects, e.g., practice or learning effects, and prevent fatigue effects – that may arise with subsequent vignettes<sup>10</sup>. Models control for whether the respondent has children, interacting this term with the parity of the fictitious couple, and are stratified by the respondent’s sex. In Italy, characterized by a still unequal division of gender roles within couples—with one of the lowest female employment rates in Europe—men and women may have different perceptions regarding the relevance of fertility policies.

Second, we moved to a “within” approach, combining multiple vignettes per respondent. To deal with the nested structure of data (i.e., each respondent evaluated six vignettes), we tested both fixed-effect and random-effect OLS regression models. Results were virtually identical; hence, we opted for the more efficient random-effect model. With respect to the “between” approach, the sample size becomes larger, allowing us to augment the models with a three-way interaction between child benefits, childcare services, and parental leaves. Through this interaction term, we operationalize the concept of family policy package, allowing the effect of each policy lever on ascribed fertility to vary depending on the other levers. Additionally, we included interactions between policy items and the fictitious couple’s characteristics (i.e., their employment condition and household income) after testing whether they improved the model fit through a Wald chi-squared test. We tested the significance of each interaction between policy items and the fictitious couple’s characteristics separately among men and women. As a result of these stepwise procedures, the model for men includes three additional interaction terms, namely, between household income and child benefits, between household income and parental leave, and between the couple’s employment status and child benefits. The model for women includes four additional interaction terms, namely, the three included in the model for men, plus an interaction term between the couple’s employment status and childcare availability. Considering the high number of coefficients

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<sup>10</sup> The fully randomized design of our experiment ensures that the sequence of vignettes does not impact the results, as potential biases such as carry-over, learning, or fatigue effects do not affect any specific policy in particular. This is because all policies are equally represented within each vignette order.



estimated in the latter models (due to the numerous interactions), results will be shown in terms of predicted scores.

To examine more in-depth whether the overall effect size of family policies on ascribed fertility varies based on couple-level characteristics, we used the same models specified as in the “within approach” to predict, for all possible combinations of the fictitious couple’s characteristics (i.e., whether they have a child, employment status, and household income), the ascribed fertility under two scenarios: when all three family policy instruments are set to “low,” and when all three family policy instruments are set to “high.”

## **Results**

### **Between Approach: The Effects of Each Vignette Dimension on Ascribed Fertility**

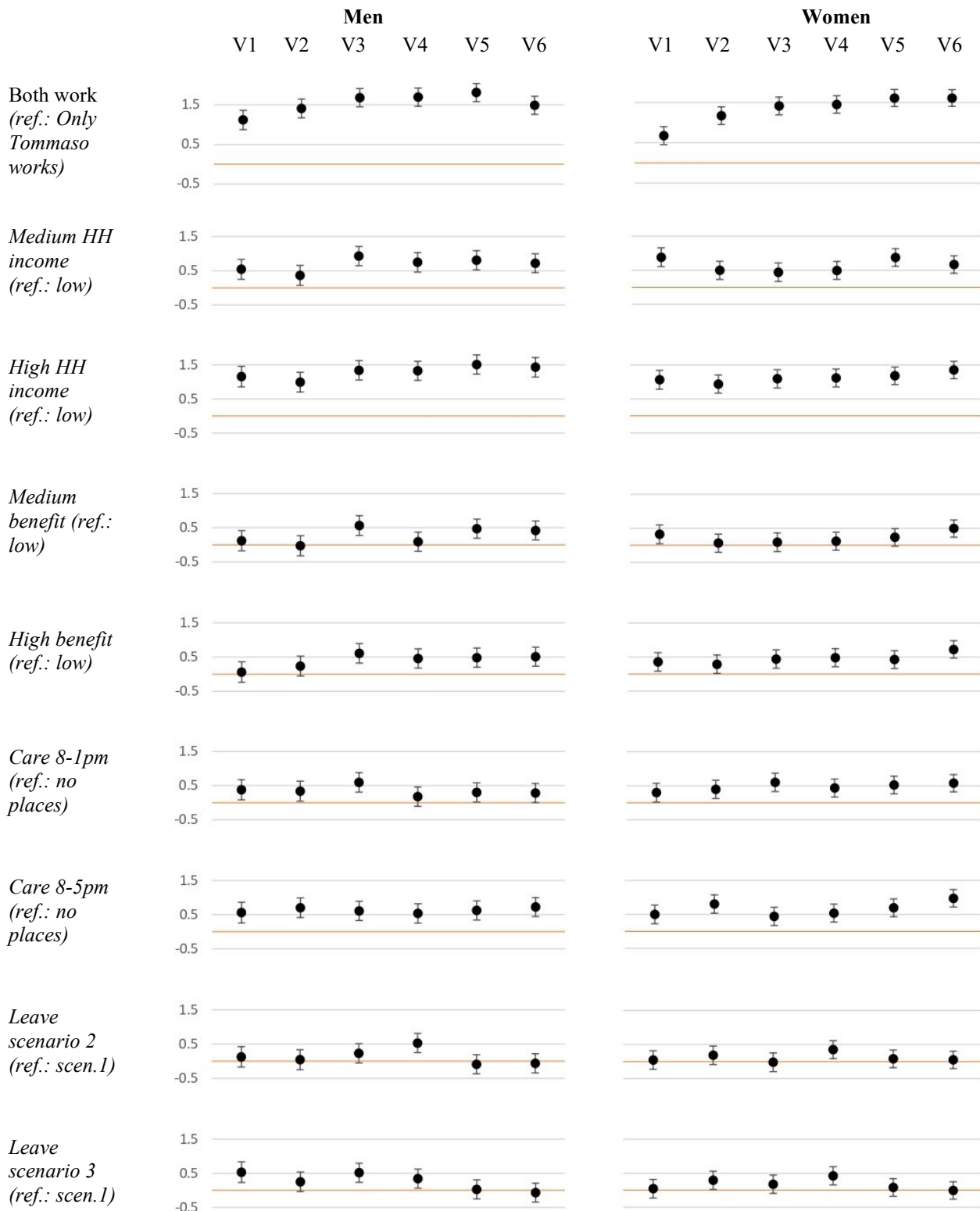
Figure 1 shows beta coefficients from OLS regression models on ascribed fertility, separately for each vignette (between approach) and stratifying the analyses by respondent’s sex. Coefficients show differences in the predicted ascribed fertility compared to the reference level of each dimension. The first dimension is the couple’s employment. Results show substantially higher ascribed fertility when both the man and the woman in the fictitious couple work. The coefficient is smaller when estimated on the first vignette only (about 1 additional point for men and about 0.5 points for women, on a scale from 0 to 10), while it becomes larger on subsequent vignettes – i.e., around 1.5 points for both men and women. The second dimension is household income. When the fictitious couple has medium or high household income, respondents’ scores about the couple’s expected fertility are higher – by 0.5 to 1 point for medium household income and by 1 to 1.5 points for high income – both among men and women. Estimates are statistically significant in all vignettes.

The remaining dimensions regard family policies. The effect of a medium child benefit (i.e., doubled with respect to the baseline scenario representing the current Italian GFA) on ascribed fertility is weak: among men, we find a statistically significant effect (of about 0.5 points) only in three out of six vignettes, while for women we find a statistically significant effect only in the first and in the last vignette. The effect of a high benefit (i.e., three times the existing GFA) on ascribed fertility is similar in magnitude to that found for the medium benefit, but it is significant in four out of six vignettes among men and in all vignettes for women. Next, the part-time availability of childcare in nearby kindergartens has small positive effects on ascribed fertility (i.e., between 0 and 0.5 points) both among male and female respondents, albeit results are statistically significant in all vignettes only among women. When childcare

availability is full-time, coefficients indicate a stronger and statistically significant effect on the ascribed fertility, as the effect sizes vary between 0.5 and 1 point. Finally, results are ambiguous regarding the effect of enhanced policies on parental leave. If the ten additional months of parental leave are paid at 80% instead of 30%, virtually no effect is detected among both sexes (a small, around 0.5 points, and statistically significant effect is only retrieved in one vignette out of six). With the best-case scenario – namely, 5 months of fully-paid parental leave to be taken from both the mother and the father, plus ten additional months paid at 80% – a weak positive effect is found among men (around 0.5 points, statistically significant in three vignettes) and, to a lesser extent, among women (smaller than 0.5 points, statistically significant only in two vignettes).

Results so far point to small-to-moderate effects of each family policy instrument on the fictitious couple's expected fertility reported by respondents. In the next paragraph, we proceed to analyze the interactions between family policy measures.

**Figure 1** – Beta coefficients (95% confidence intervals) from OLS regression models on ascribed fertility, by respondent’s sex and vignette order.



Note: models control for respondent’s parity interacted with the fictitious couple’s parity.

### **Within Approach: The Combined Effects of Family Policies on Ascribed Fertility**

In the second part of the analysis, we combined all vignettes and ran sex-specific random-effect models to test whether and to what extent policy levers interact with one another in affecting ascribed fertility. Figures 2 (for men) and 3 (for women) show variations in the predicted ascribed fertility, sorted in ascendant order, holding constant one of the three policy dimensions at a fixed level and letting the other two change. For example, in the upper-left panel of Figure 2, the graph reports the predicted expected fertility, in ascendant order, when the child benefit is fixed at the low level, while childcare availability and parental leave (on the x-axis) change. Letters L, M, and H indicate the low, medium, and high levels of each dimension, respectively.

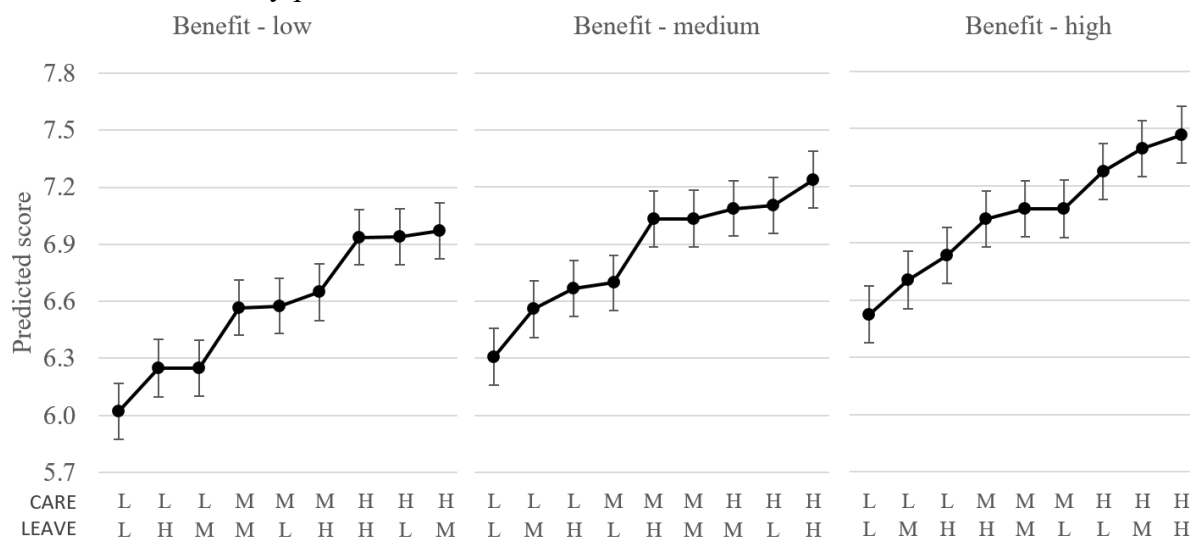
Overall, ascribed fertility tends to be higher as the levels of each family policy simultaneously increase. However, there is quite a degree of variation in the combined policy effects, which suggests that some policy levels are more important than (and interact with) the others. Starting from men (Figure 2) and looking at the graphs with childcare levels held constant, we can see that the lines are relatively flat, while the lowest predicted ascribed fertility level increases remarkably when childcare availability improves from low to medium and from medium to high. This means that childcare availability plays a chief role in shaping the ascribed fertility for men, while the contribution of the other two dimensions is relatively smaller. Conversely, looking at the graphs with parental leave policies held constant, the lines' slopes are steeper, and the lowest predicted ascribed fertility level remains relatively stable across the three graphs. This means that, at least for men, levels of child benefits and childcare availability impact ascribed fertility regardless of the generosity of parental leave schemes, for instance: when parental leave policies are those of the high scenario, the predicted ascribed fertility ranges from 6.24 (in the case both benefits and childcare are set to the low scenario) to 7.45 (in the case both benefits and childcare are set to the high scenario) – i.e., the maximum combined contribution of child benefits and childcare availability is about 1.2 points. On the other hand, when childcare is available full-time (i.e., high scenario), the predicted ascribed fertility ranges from 6.95 to 7.45 (i.e., the maximum combined contribution of child benefits and parental leave is about 0.5 points). This means that enhancing child benefits and parental leaves when childcare is fully available may have little consequences on fertility; while enhancing child benefits and childcare availability would strongly impact fertility even in a scenario of generous parental leave policies. In addition, when childcare availability is limited (i.e., low scenario), the predicted scores of ascribed fertility range between 6.05 and 6.85 – i.e., the contribution of the other two dimensions is about 0.8 points, which is larger than in the high scenario (by about 0.3 points). This suggests that the positive effect of enhancing child benefits

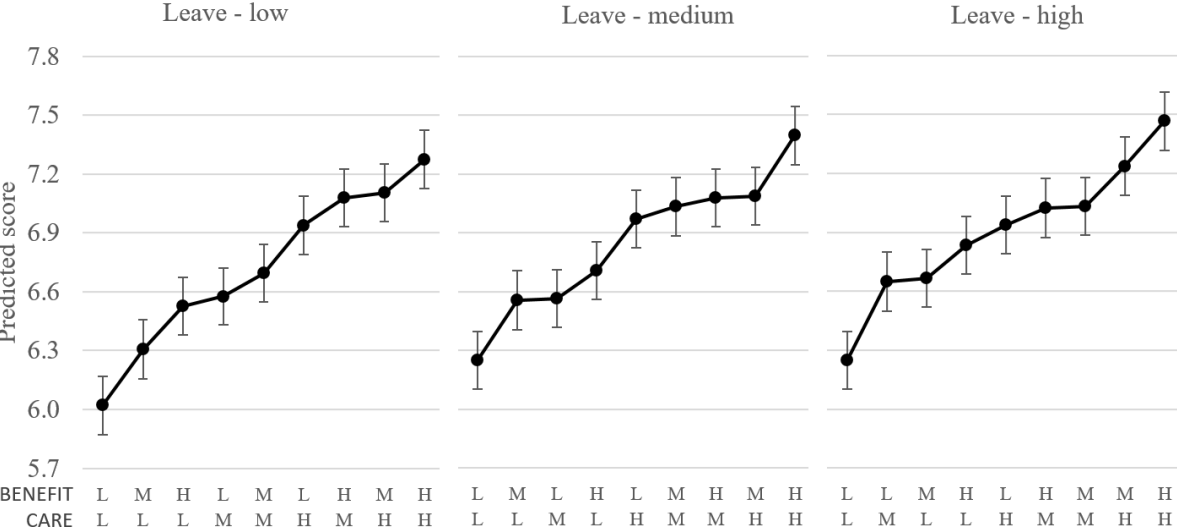
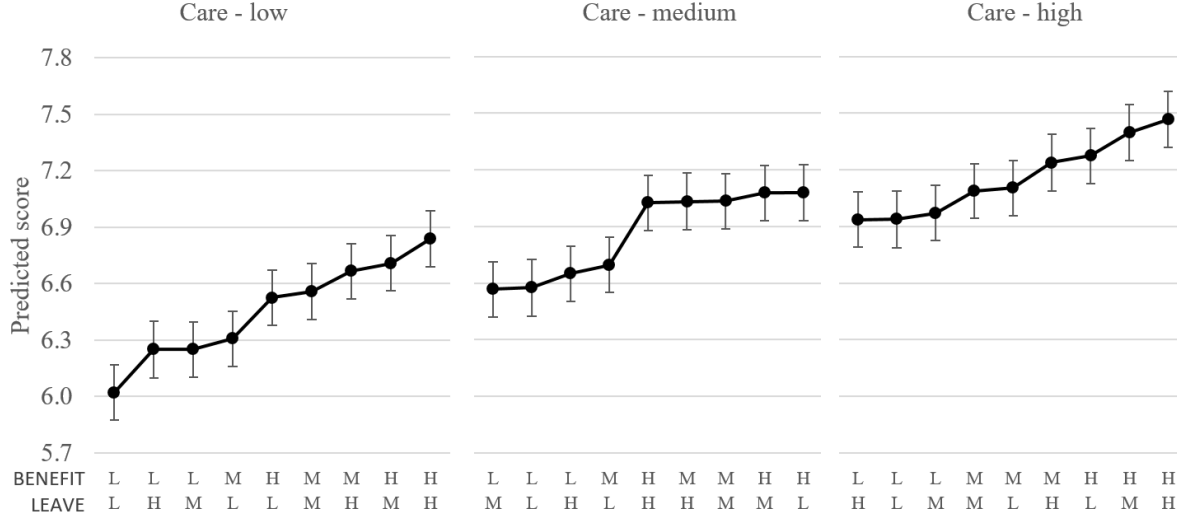
and parental leave would be (slightly) stronger in a scenario with poor childcare availability. Overall, the results suggest that the role played by child benefits lies somewhere in between those of childcare availability and parental leave policies.

The results for women (Figure 3) illustrate a similar pattern, albeit differences between policy effects are slightly less pronounced compared to those observed among men. This implies that women attribute some degree of efficacy to all family policies. Nevertheless, similar to our findings for men, relatively flatter lines are obtained when childcare availability is held constant, confirming that the single policy dimension with the larger effect on ascribed fertility is childcare availability. For example, when childcare availability is set to the low scenario (i.e., few places are available in kindergartens), the predicted ascribed fertility rises from 6.38 (in the case both child benefits and parental leave are set to the low scenario) to 7.05 (in the case both child benefits and parental leave are set to the high scenario), i.e., the maximum combined contribution of the other dimensions is only 0.67 points; conversely, when parental leave policies are those of the low scenario, the predicted ascribed fertility rises from 6.38 to 7.61, i.e., the contribution of the other dimensions is 1.23 points.

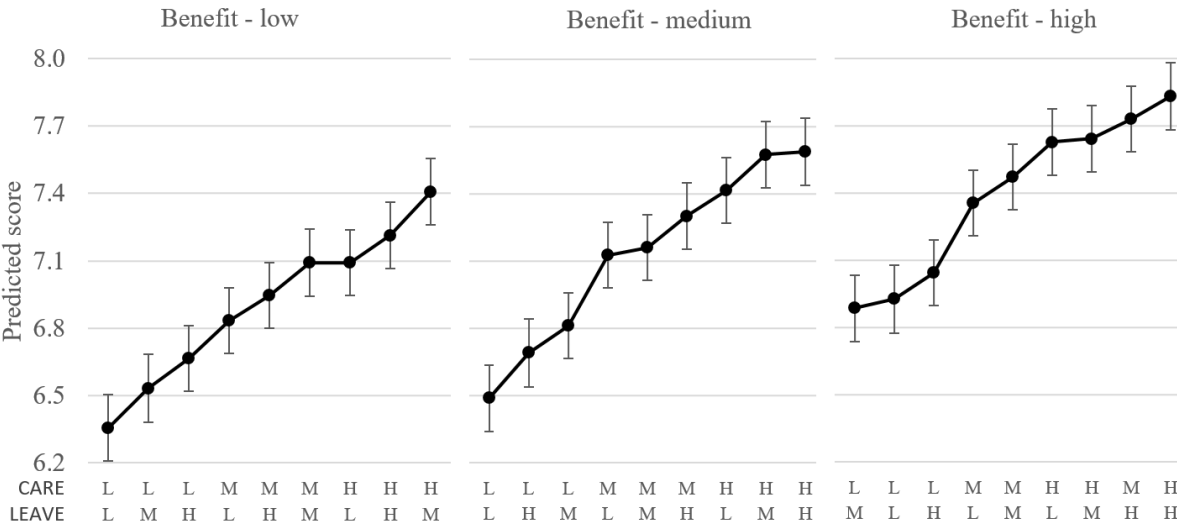
All things considered, analyzing the interactions between policy instruments suggests that not only may each lever exert a different effect on fertility, but such effects may also change depending on the levels of the other levers.

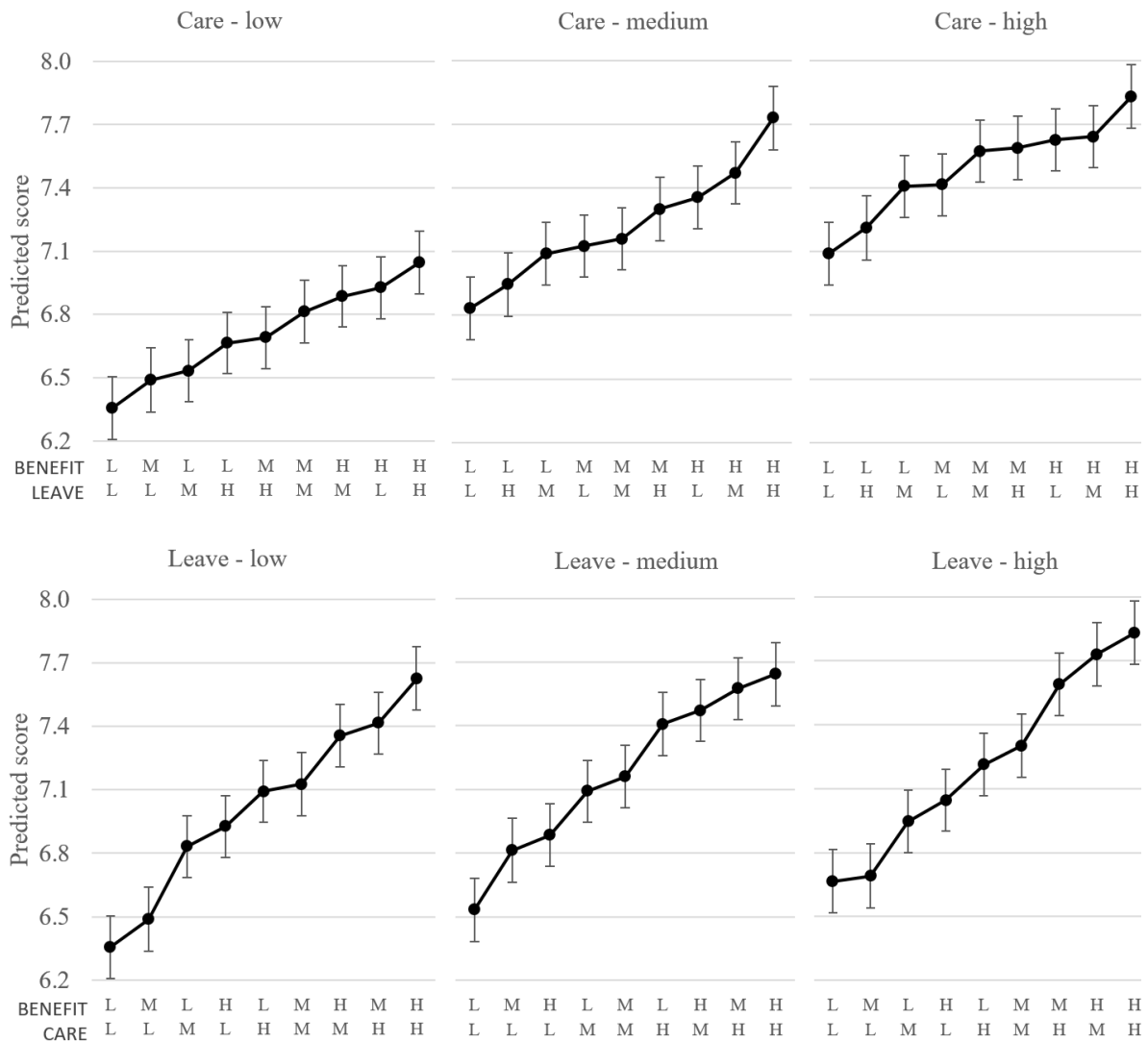
**Figure 2** – Predicted ascribed fertility (95% confidence intervals), by all possible combinations of family policies – MEN





**Figure 3** – Predicted ascribed fertility (95% confidence intervals), by all possible combinations of family policies – WOMEN





Note: models control for respondent's parity interacted with the fictitious couple's parity.

### Heterogeneity in the Effects of Family Policies by Characteristics of the Fictitious Couple

To examine possible heterogeneity in the effects of family policies, Table 2 reports differences between the best-case scenario and the worst-case scenario predictions by all possible combinations of the fictitious couple's characteristics (i.e., whether they have a child, employment status, and household income). Large differences indicate cases where enhanced family policies most effectively increase ascribed fertility, while small differences suggest that improving family policies would have little effect on ascribed fertility. For ease of interpretation, light grey cells correspond to small differences between the high-scenario and the low-scenario, while darker grey cells refer to larger differences between scenarios.

Starting with men, we find the largest difference between the two scenarios when only Tommaso works, and the household income is low (1.89); conversely, differences reduce when both Tommaso and Caterina work and the household income is medium or high – with small discrepancies by parity. For instance, if both Tommaso and Caterina work and the household

income is high, changing from the worst- to the best-case scenario in family policies would increase the ascribed likelihood of having the first child by only 0.9 points. Thus, among men, family policies seem to matter the most when the fictitious couples' economic situation is more fragile – e.g., a single-earner and a low household income. Under these circumstances, male respondents attribute particular relevance to child benefits for the couple's fertility (top quadrants of Figure A2 in the appendix). Among women, this pattern emerges less clearly and only when the fictitious couple already has a child. Similar to men, we find a difference in the predicted ascribed likelihood of second birth between the best-case and worst-case scenarios of 1.83 points if only Tommaso works and household income is low or medium, and of 1.28 points if both Tommaso and Caterina work and household income is high. However, female respondents seem to “anticipate” the potential relevance of family policies when *she* is employed as well, even if the fictitious couple's income is high: in this specific combination, the difference in the predicted ascribed likelihood of a first child between the best-case and worst-case scenarios is 1.57 among women and only 0.9 among men. In particular, female respondents perceive childcare services as more important for the couple's ascribed fertility when both partners work (bottom quadrants of Figure A2 in the appendix).

Overall, the perception of the efficacy of family policies for fertility does not differ substantially based on parity, although female respondents report higher positive effects of more generous family policies on the fictitious couple's ascribed likelihood to have the second rather than the first child.

While the characteristics of the fictitious couple moderate the perceived importance of family policies, respondents' characteristics, other than sex, seem less relevant. In additional analyses (available upon request), we tested whether parents and childless respondents differ in their perceptions of which family policy scenarios are more beneficial for the decision of the fictitious couple to have a(nother) child. Results of separate models by presence of children show a remarkable similarity between the two sub-groups. Only the effects of more generous child benefits are slightly larger in the sub-sample of childless respondents. Also, we found almost identical results after implementing separate models for respondents with openly negative (“certainly no”), uncertain (“probably yes/no”), and openly positive (“certainly yes”) short-term fertility intentions. The perceptions regarding the potential effectiveness of different family policy scenarios are thus the same across respondents at various stages of their family life-cycle and with varying fertility intentions.



**Table 2** – Differences in the predicted ascribed fertility between the best-case scenario (HHH) and the worst-case scenario (LLL) of family policies, by combinations of the fictitious couple’s characteristics.

		Men		Women	
		childless	with a child	childless	with a child
Tommaso works	only low	1.89	1.70	1.26	1.83
	medium	1.73	1.60	1.28	1.83
	high	1.36	1.36	1.60	1.43
both work	low	1.43	1.43	1.22	1.67
	medium	1.26	1.34	1.25	1.67
	high	0.90	1.11	1.57	1.28

*Note: background is colored in light grey for differences smaller than 1.30, in grey for differences between 1.30 and 1.69, and in dark grey for differences equal to or larger than 1.70.*

## Concluding Discussion

This paper contributes to the literature on the family policies-fertility nexus by assessing the potential role of parental leave policies, childcare services, and child benefits on fertility through factorial survey experiments (FSE). Starting from the consideration that family policies may only have a supportive impact on the childbearing behaviour of those families “that are in a position to conform” (Bourdieu 1996: 24, cited in Neyer and Andersson 2008), we investigated potential recipients’ perceptions of the efficacy of these policies in a lowest-low fertility context such as Italy. By doing so, we provide a sort of ex-ante evaluation of the efficacy of possible policy reforms to enhance fertility. Our analytical approach builds on recent insights emphasizing the importance of considering family policy packages and possible policy interactions (Gauthier 2008). Through the manipulation of the characteristics of the fictitious couple to which respondents ascribed fertility, we considered the heterogeneity in the perceived efficacy of family policies based on household income, both partners’ employment, and parity.

Results show that each of the family-friendly policies we envisioned in the experiment – child benefits, childcare availability, or parental leave – positively impacts ascribed fertility. More precisely, ascribed fertility was at its highest in scenarios where all family policies were set at their highest levels. However, this conclusion needs to be qualified in two ways.

First, not all policy levers are perceived as equally important: the availability of full-time, public childcare services seems more relevant than higher child benefits, whereas more generous and gender-equal parental leaves seem to be perceived as less relevant. In scenarios with virtually no public kindergarten placements, even the most generous benefits and parental leave schemes contribute very little to ascribed fertility, particularly when evaluated by female respondents. Consequently, other family policies cannot compensate for the lack of childcare services. This result can be better understood in the context of the low coverage of childcare services for children under age three (28% in the 2021/2022 year, only 14% considering public services), still below the target for 2010 (33%) established by the EU in 2002. Administrative data clearly show an unsatisfied demand for childcare services, as two-thirds of the enrolment requests for the 2021/2022 year have not been accepted by public childcare facilities. Our finding that childcare is the most significant policy lever for influencing fertility aligns with the review by Bergsvik et al. (2021) on quasi-experimental studies. However, Bergsvik and colleagues also suggest that expanding parental leave has positive effects on fertility, while monetary transfers have only transitory effects—findings that are less consistent with our results. In contrast, our result that monetary transfers are perceived to have a greater impact on fertility than parental leave policies aligns with the study by Gauthier and Hatzius (1997), who found an effect on fertility from monetary transfers but not maternity leave policies.

Second, it appears clear that only a consistent mix of financial benefits, parental leave schemes, and childcare provisions can potentially boost fertility, whereas marginal changes in single policy levers are most likely ineffective. Results suggest that even considering the policy dimension perceived as the most relevant – i.e., childcare services – vignettes in which the other policy dimensions are set at their current levels in Italy (low scenarios) whereas the fictitious couple can access full-time public childcare report ascribed fertility higher by only 0.7 and 0.8 points (on a 0-10 scale) compared to the baseline, among women and men, respectively. On the contrary, a simultaneous shift from low to high levels of the three family policies has been found to increase ascribed fertility by 1.4 points, among both male and female respondents. Improving the Italian family policies to the levels envisaged in our high scenarios would require a substantial increase in public spending. For instance, the baseline level of child benefits in our vignettes, which is the current General Family Allowance (GFA) recently introduced in Italy, cost approximately 15 billion euros in its first year of application, almost half the amount of the 2023 budget law approved by the Italian Parliament. Increasing the amount of the allowance to three times its current value may thus be difficult to bear for the Italian public finances, at least without substantial tax increases – which may not be a

politically viable option. In general, such a huge increase in public spending on a single policy lever may produce small effects on total fertility.

The results of our FSE point out that a couple's socioeconomic status is more important than family policies for fertility decisions. Ascribed fertility increases by up to 3 points when both partners are employed (with a permanent contract) and household income is high, with virtually no differences based on respondents' sex. This is a remarkable finding for a country with the second-lowest female employment rate in the European Union and long held to be marked by a pervasive male breadwinner norm. Of course, this does not necessarily imply a turn toward a gender-egalitarian division of gender roles. Rather, it may indicate that two earners and a decent household income are perceived as preconditions for a couple to have children in contemporary Italy, in light of labor market instability, increasing costs of children, and declining real wages (Vignoli et al. 2012; 2020a; 2020b). Recent research has shown that female employment began to be positively associated with fertility at the individual level from 2010 onwards (Alderotti 2022). In our vignettes, we canceled out the possible influence of employment instability on fertility by only considering unlimited-time contracts. The situation of both partners of the fictitious couple having unlimited-time contracts is likely to have been perceived as very favorable for childbearing by the respondents. Unstable forms of employment are very common at the early career stages in Italy, and atypical employment periods have been found to come with a lower likelihood of ever becoming a parent and a higher probability of having fewer children compared to those with more stable careers (Alderotti et al. 2024).

The characteristics of the fictitious couple also play an important role in moderating the effects of family policies. In scenarios where both partners are employed and the household income is high, a simultaneous shift from low to high levels of the three family policy dimensions only produces limited increases in ascribed fertility. This pattern is particularly pronounced among male respondents, who perceive child benefits as particularly relevant only when the household income is low. Female respondents, instead, perceive family policies as relatively more relevant even in the fictitious couple's more favorable socioeconomic condition, especially with regard to the availability of public childcare services and the transition to the first child. This pattern reveals some traces of Becker's specialization model, with male respondents placing particular emphasis on income effects and somewhat underrating work-family reconciliation issues. In contrast, female respondents seem to take possible substitution effects into account.

The conclusion that couples' socioeconomic characteristics are perceived as more important by potential policy recipients for fertility decisions does not imply that family policy reforms are unnecessary because they are costly and would only play a negligible role. The premise of this paper is that the success of policy reforms is partly dependent on the potential recipients' perception of the efficacy and relevance of family policies for fertility decisions (e.g., Hoem 2008). However, it might also be that a policy perceived of minor importance before its implementation stimulates within-couple adjustments that eventually favor fertility. For instance, more generous paternity leaves may be perceived as less relevant given that fathers, especially in the Italian context, participate very little in the care of small children. However, once implemented, such a policy may endogenously induce a change in attitudes toward gender roles and foster fertility through a more equitable partners' division of unpaid labor (Toulemon 2011). Thus, we cannot rule out the possibility that the ascribed fertility measured in our study is less sensitive to policies than actual fertility behaviors.

Most importantly, our *ex-ante* evaluation of the potential impact of family policies on fertility depends on the design and assumptions of our experimental setting. Women's employment may indeed be fostered by public childcare availability and generous parental leave schemas, which means that part of the positive effects of improved family policies on fertility may be mediated by rising women's employment (Luci-Greulich & Thevenon 2013). However, this causal path is not captured in our FSE as the couple's employment and income situations enter our vignettes as additional exogenous dimensions that may influence partners' fertility decisions, regardless of family policies. Also, how the vignettes have been designed may make some manipulated dimensions more relevant than others. For instance, changes in household income or child benefits may be easier to grasp for the respondent, as they only imply a changing number passing from one vignette to the next. On the other hand, differences in the levels of parental leave are more subtle and require the respondent to read several sentences in the vignettes. This may partly explain why the relevance attributed by male respondents to more generous and gender-equal parental leaves in the first vignette gradually reduces in the subsequent ones, while the opposite occurs regarding child benefits.

In this paper, we have prioritized policies that constitute the core of welfare-state policies related to childbearing and the rearing of (small) children (Neyer 2003) – namely, parental leave policies, childcare services, and child benefits. Within the framework of a FSE, the decision not to include other policy areas is a deliberate simplification because there are inherent limitations in encompassing the entire spectrum of policy possibilities through vignettes. However, given our randomized approach, this simplification does not introduce

distortions in estimating the effects of the included policy dimensions. With this paper, we seek to set the stage for future research to employ FSE to test other policy constellations, making a step forward from the inspection of family policies to broader social policies. In addition, while the present study addressed short-term (i.e., three years) ascribed fertility, future experimental studies on the perception of potential policy reforms might also address long-term fertility behavior to capture the broader childbearing decision-making process.

Despite these limitations, we conclude that reasonably boosting Italian fertility should be possible by avoiding focusing solely on family policies. The aim of family-friendly policy reforms in contemporary Western countries should be to fill the gap between desired and actual fertility, which is the highest in Southern European countries (Beaujouan & Berghammer 2019). To address the conundrum of lower-than-desired fertility in Italy, this paper rejects the notion of investing in *pronatalist* policies (e.g., financial incentives like baby bonuses or tax breaks). As such, cash transfers are perceived as much less effective than providing childcare. Our study rather indicates evidence supporting the effectiveness of *structural* approaches, focusing on policies that promote youth independence throughout the life course and support the reconciliation of work and family life by providing access to high-quality childcare and encouraging both parents' involvement in paid and unpaid work. Furthermore, promoting economic stability for young adults and gender equality has implications beyond just demographic growth as it significantly favors individuals' subjective well-being, a goal worth pursuing irrespective of fertility. Additionally, coherence and stability of policies are key parameters for enhancing policy effectiveness and combating uncertainty by instilling sufficient trust in the future for households to have children.

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## Appendix

**Table A1** – Exact values of monthly net household income for each scenario reported in the vignette text according to the couple’s employment situation

	Only Tommaso works	Both work
Low scenario	1,100€	2,100€
Medium scenario	1,500€	2,700€
High scenario	1,900€	3,300€

**Table A2** – Amount of child benefit for each scenario reported in the vignette text according to the couple’s net monthly income

IF: ↓	Low scenario	Medium scenario	High scenario
Low income (1,100€ or 1,500€)	175€	350€	525€
Medium income (1,900€ or 2,100€)	100€	200€	300€
High income (2,700€ or 3,300€)	50€	100€	150€

**Figure A1** – Example vignette with introductory text (translated version)

**Introductory text:**

You will see 6 different possible scenarios, each of which describes the **hypothetical situation of a couple**. For each scenario, please indicate how likely it is, according to you, that the couple **will have a child (or another child)** in the next three years.

Starting from the second scenario, the aspects that have changed with respect to the previous scenario are **bolded**.

Kate (30) and Tom (32) are a couple without children, and they generally agree that they might have a child. Both Kate's and Tom's parents live over an hour's drive away.

- They are both employees with permanent contracts.
- The couple's net monthly income, including benefits and transfers, is 2,700€.

Considering the following scenario in terms of family policies:

- Child allowance of 100€ per month if they had a child.
- Childcare services:
  - Public kindergartens in their city have places available 8am – 5pm.
- Parental leave:
  - If they had a child, the mother would be entitled to months of fully paid maternity leave, and the father to 10 days of fully-paid paternity leave. In addition, either the mother or the father could take up to 10 additional months of leave paid at 30% before the child turns 12.

How likely is it, according to you, that the couple will have a child during the next three years?

Answer:

0      1      2      3      4      5      6      7      8      9      10

Extremely unlikely

Extremely likely

**Figure A2 - Predicted ascribed fertility (95% confidence intervals) for selected combinations of policy dimensions and characteristics of the fictitious couple, by respondent's sex and fictitious couple's parity.**

