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Are climate change concerns related to fertility intentions and for whom? Evidence from five European countries

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Abstract

As awareness of climate change grows, some open questions arise: are some individuals factoring the climate crisis into their childbearing decisions, and what individual characteristics are associated with these concerns? This study explores these questions using representative data from young adults aged 18–34 (n=5,948) in France, Italy, Spain, the United Kingdom, and Germany. It investigates the prevalence of climate change-related motivations for not intending to have children in the near future, distinguishing between two concerns: the environmental impact of having a child and the potential consequences of climate change on a future child's well-being. These two concerns are further analysed in relation to socio-economic and demographic factors, as well as self-reported exposure to climate-induced natural hazards. The analysis reveals that the concern for a future child's well-being is more widespread—shared by over half of respondents not planning a child in the next three years (55%)—and more strongly linked to life-course and economic insecurity, such as unstable employment and being female. In contrast, concern about the environmental impact of childbearing is more prevalent among students and those aged 30–34, suggesting it may stem more from reflections on sustainability and intergenerational responsibility. Both concerns are positively associated with experience of severe climate-related hazards, particularly among childless individuals. These findings suggest that environmental disruptions may play a growing role in shaping reproductive intentions and highlight the need to address different dimensions of uncertainty in family policy.

Keywords (4 to 6)

Climate change concerns, Fertility intentions, Uncertainty, Childbearing, Europe

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1. Introduction

Since the Great Recession, most European countries have observed a decline in total fertility rates (TFR) (Sobotka 2018). This trend is also evident in countries with a long tradition of generous family policies, high gender equality, and robust economies like those in Nordic countries. Increasing uncertainty has been identified as one of the main causes of this decline (Vignoli et al. 2020; Comolli and Vignoli 2021; Guetto et al. 2023). This uncertainty is, at least in part, of economic origin (Comolli 2017). Since the 1990s, the flexibilization of the labour market, the growing precarization of occupations, and the Great Recession have significantly altered younger cohorts' employment and financial conditions (Barbieri and Scherer 2007; Barbieri 2011; Barbieri et al. 2015).

The framework of uncertainty, however, extends beyond the economic dimension. As framed by the Second Demographic Transition (Lesthaeghe 2014), the solid foundations offered by traditional values have gradually eroded within the new generations. At the same time, while the level of individualism has increased in contemporary Western societies, lifestyle opportunities have also multiplied. Leaving behind traditional certainties means opening up new possibilities, of course. Still, it also entails losing reference points to make decisions in an increasing complexity and then project into the future. Recent studies highlight how these uncertainties are interconnected aspects

of a broader concept of "future uncertainty" or "societal pessimism" (Ivanova and Balbo 2024), capturing not only material and economic insecurities but also a more diffuse sense of instability, unpredictability, and diminished confidence in long-term life planning. Building on this framework, multiple sources of uncertainty further intensify and compound its effects, from recent global health crises such as the Covid-19 pandemic (e.g. Guetto, Bazzani and Vignoli 2022; Luppi, Arpino, and Rosina 2022), to rising geopolitical tensions and the instability of international orders (Golovina et al. 2025). The questioning comes naturally whether and to what extent climate change concerns are entering into the narrative of young adults when they consider childbearing, prompting the emergence of the new concept of "environmental uncertainty" as a framework to capture this new and evolving source of uncertainty (Puglisi et al. 2025).

Environmental awareness and individual action were traditionally counted as consequences of the cultural shift framed by the Second Demographic Transition theory. As societies become more affluent and secure, individuals shift their values from material concerns, such as economic well-being, to non-material concerns, such as self-actualization, social justice, and to political participation -and among those, the increased attention for the environment (Inglehart 1977; Ahonen 2017). Recent studies, however, have expanded on this concept by highlighting that environmentalism encompasses both post-materialist and material concerns, such as safety and security (Brulle and Rootes 2015). As European populations started directly witnessing extreme weather events, climate change can increasingly be perceived as a direct threat to personal and family well-being rather than solely an abstract moral issue (Puglisi, Muttarak and Vignoli 2025).

The harmful consequences of climate change are becoming more visible daily, increasing environmental sensitivity and climate risk perception (Hoffmann, Muttarak, Peisker and Stanig 2022; Diakakis, Skordoulis, and Savvidou 2021). In 2020, around 90% of people in 27 countries saw climate change as a 'very serious' or 'somewhat serious' problem (Globescan 2020). As people gain awareness of the threatful consequences of climate change, they may question the desirability of having children in such a world, the future, and the responsibilities that a newborn would inherit. Over the past few years, there has been quite extensive coverage in the press regarding this matter (Osaka 2022; Britton-Purdy 2020), and social movements, like the "BirthStrikers" have risen, giving voice to people who have made the decision to refrain from having children due to the alarming consequences of climate change (McMullen and Dow 2022; Hunt 2019).

The aim of this paper is twofold. First, to assess the diffusion of the climate-related reasons for young adults not intending to have a child in the short term, compared to the other motives for not planning for a child. We explicitly distinguish whether the motive for not planning to have a child is related to the worry about 1) the environmental impact of having a child and 2) the threat of climate change on the child's future well-being. Throughout the paper, we refer to these two motives for not having children as *climate change childbearing concerns*. The second objective is to assess possible associations between climate change childbearing concerns and individual's demographic and socio-economic characteristics, along with a measure of self-reported exposure to climate change-induced natural hazards. By estimating multinomial logistic regression models, we evaluate the extent to which socio-economic and demographic characteristics are similarly or differently associated with each of the two climate change childbearing concerns.

We analyse survey data collected in November 2022 in five European countries (Italy, France, Germany, Spain and the United Kingdom) on a representative sample of the population aged 18 to 34. This age span encompasses individuals at different stages of their transition to adulthood, with younger people whose fertility intentions may still be in a formative stage, and older individuals who are more likely to be planning or realizing their family goals (Lazzari, Compans, and Beaujouan 2022).

The remainder of this paper is structured as follows. Section 2 provides a background on the relationship between climate change and fertility outcomes, reviewing key empirical studies. Section 3 introduces the data, sample selection, the key variables used in the analysis and the statistical methods employed. The results are presented in Section 4 and 5, followed by a discussion in Section 6 and concluding remarks in Section 7.

2. Background

The perception of climate change's threatful consequences can influence childbearing choices through two primary mechanisms. First, there is the concern about the environmental impact of adding a child to an already over-populated world, which we refer to as '*CC (climate change): impact on climate*'. Second, there is the apprehension regarding the well-being of a child born into a future world increasingly affected by climate change, which we term 'CC: *impact on child*'.

The former (i.e., *CC: impact on climate*) has been debated from the 70s and 80s in the context of the -somewhat controversial- theme of 'overpopulation' (Schneider-Mayerson and Leong 2020). Central in this debate is the concept of the 'carbon legacy' of reproductions, developed by Murtaugh and Schlax (2009), which calculates an individual's carbon footprint and stresses the impact of childbearing on the environment. Despite criticisms of its methodology (Schneider-Mayerson and Leong 2020, Merchant and Grace 2024), the concept has gained public attention, prompting social scientists to explore the implication of this ethical concern among those who worry about climate change.

The second concern (i.e., *CC: impact on child*) focuses on the well-being of children in a climate-compromised future. The significance of well-being in fertility choices has evolved with the rise of welfare societies and postmodern values emphasizing self-realization (Lesthaeghe 2010). People choose to have children if it does not decrease their well-being, but not only: if they believe they can provide their children with a comparable level of well-being. A recent study by Ivanova and Balbo (2024) highlights how a pessimistic view of the future for potential children, compared to the present, is linked to a lower likelihood of deciding to become parents (Ivanova and Balbo 2024).

Building on the work of Davis, Arnocky, and Stroink (2019), who examine the relationship between environmental concern and reproductive decision-making, we attempt to conceptually situate the two identified climate change concerns within the tripartite framework proposed by Schultz (2001): egoistic, altruistic, and biospheric. This typology classifies environmental concerns based on the nature of the 'object' perceived to be under threat from environmental degradation and can be related to the degree to which an individual perceive an interconnection between self and nature (Shultz, 2001). Egoistic concern reflects worry about personal well-being, while altruistic concern relates to the perceived risks to others—such as one's (actual or potential) children, family, or broader community. Biospheric concern, in contrast, encompasses a moral orientation toward the natural world, including ecosystems and non-human life forms. Within this framework, the *CC: impact on child* can be interpreted as an altruistic concern, given that the threat is directed not at the individual but at their potential children. The *CC: impact on climate* concern is harder to classify, as it may express worry about the self, others, or the planet. Because it does not *a priori* exclude any of these, it can be understood—when broadly interpreted—as a biospheric concern. Both concerns may reflect a broader sense of uncertainty about the future—about what kind of world one's own child, other people's children, or even non-human life will inhabit. The *CC: impact on child* concern, being more narrowly focused on the well-being of one's potential offspring, may align more closely with traditional notions of uncertainty, particularly those tied to economic and social stability. In contrast, the more expansive *CC: impact on climate* concern may be rooted in a deeper moral or ecological unease about long-term planetary sustainability.

The recent study by Puglisi, Muttarak, and Vignoli (2025) is the first to explicitly call for an expansion of the theoretical discussion on the role of uncertainty in childbearing decisions, expressing the need to move beyond the common focus on economic uncertainty to explicitly consider the role of environmental uncertainty -stemming from climate change and its anticipated impacts. This represents a crucial step in linking two previously separate strands of research: the literature on climate change concerns and childbearing choices, and the one on uncertainty and low fertility.

Naturally, climate change concerns are seldom the sole reason for not wanting children; alongside the most traditional factors, like age, parity, partnership status (Iacovou and Tavares 2011), recent empirical studies showed the importance given to other factors such as life stage, emotional support, financial concerns, reproductive capabilities, health, and broader global issues like inequality and rising fascism (Schneider-Mayerson and Leong 2020; Smith et al. 2023). Golovina and Jokela (2024) specifically distinguish between economy/safety and social/environmental factors and demonstrate that the latter -encompassing worries about peace, immigration, hostility towards migrants, but also environmental protection and climate change- are associated to a lower likelihood of having children (Golovina and Jokela, 2024).

Qualitative and mixed methods studies, such as those by Schneider-Mayerson and Leong (2020) and Smith et al. (2023), provide important insights into how climate change concerns are associated with childbearing decisions, but they are not computed on population-representative samples and thus do not provide an estimation of the extent to which the phenomena have expanded. The current scientific literature primarily focuses on establishing the existence and direction of the association between climate change concerns or attitudes and fertility intentions, with varying results. While most studies indicate a negative association between desires for children and worries about climate change, the findings are not uniform (Dillarstone, Brown, and Flores 2023). Additionally, a notable gap exists in understanding how socio-economic and demographic factors relate to climate change childbearing concerns.

Previous evidence

Focusing on 139 Canadian university students, Arnocky and colleagues (2012) find that environmental concerns predict less positive attitudes toward having children. Similarly, Powdthavee and colleagues (2024) demonstrate with UK panel data that pro-environmental behaviours (such as closing tap running while brushing teeth or taking fewer flights) are associated with lower chances of having a child six years later. Rackin and colleagues (2023) focus on 12th graders adolescents in the US, and they find that a preference for government action on environmental issues is linked to lower fertility desires, particularly for larger families. Traylor and Chae (2025), on the same line, find environmental support negatively associated with childbearing and ideal family size in the US. Another recent study focusing on Finland, Estonia, and Sweden shows, on the same line, that childless people who are very worried about climate change are less likely to intend to have children (Bastianelli 2024). First in its kind for being an experiment-based study, the recent work from Bisi, Sturm and Van Bavel (2024) also demonstrates that when exposed to a pessimistic scenario regarding climate change, Belgian and Italian university students tend to share low fertility desires. In line with these results, Puglisi, Muttarak and Vignoli (2025) find using Italian data that individuals who perceive climate change as a major issue are less inclined to express intentions to have children. This association remains consistent net of sociodemographic factors and political orientation (Puglisi, Muttarak and Vignoli, 2025).

In contrast, focusing on the EU-27 countries and using Eurobarometer data, De Rose and Testa (2015) find null to positive association between environmental concern and intended number of children. The authors investigate the role of education and urbanization as possible moderators,

finding no result (De Rose and Testa 2015). Szczuka (2022) explores the connection between the respondents' perception of climate change as the most critical global issue and their ideal number of children in Visegrád countries. While in the Czech Republic and Hungary, people worried about climate change are more likely to declare they want one or zero children, in Slovakia and Poland wishing for a large family is positively associated to climate change concern.

Demographic and socio-economic characteristics associated to climate change concerns and fertility intentions

To our knowledge, little evidence exists about gender differences in climate change concerns and fertility intentions, although we know that women tend to be more worried than men about climate change (Bush and Clayton 2023; McCright et al. 2016; Hunt 2020). Traylor and Chae (2025) find that environmental support is negativcly associated with childbearing only among women, and not among men, when both are measured concurrently. However, the relationship does not persist when environmental support is used to predict births two years later (Traylor and Chae 2025).

Age is widely recognized as a central factor in fertility decision-making, as it reflects individual's position within the life course and the opportunities, constraints, and expectations associated with it. Fertility intentions are not static but evolve over time, influenced by shifting life circumstances and social roles (Kuhnt, Minkus, & Buhr, 2021; Iacovou & Tavares, 2011). For example, while younger individuals may express uncertain or exploratory attitudes toward future childbearing, older individuals are more likely to revise intentions in response to life transitions or perceived constraints. In parallel, recent research on climate change concerns has consistently revealed an age-related gradient in concern about climate change, with younger individuals -particularly those in their late teens and early twenties- expressing markedly higher levels of concern compared to older cohorts (Pew Research Center, 2021; UNDP, 2021). This trend reflects not only heightened perceived vulnerability to long-term environmental risks but also distinct modes of engagement, including climate activism and moral framing centred on intergenerational justice (Hickman et al., 2021). Emerging evidence suggests that concern about climate change influences fertility intentions in ways that vary significantly by age. Among adolescents and individuals in early youth, climate-related reproductive decisions are often shaped by moral and existential concerns, with some explicitly stating that they intend to forgo childbearing due to fears about future environmental degradation (Schneider-Mayerson & Leong, 2020). In contrast, young adults tend to exhibit a more pragmatic orientation towards fighting climate change consequences and a lower emotional involvement regarding climate change concerns (Martin et al. 2023; Cisotto et al. 2024). However, evidence on the moderator effects of age in the relationship between climate chance concern and fertility intentions is quite mixed in the literature, sometimes revealing a higher effect among young adults compared to young people (e.g., Schneider-Mayerson & Leong 2020), sometimes not finding significant relationship (e.g. Bastianelli 2025; Puglisi et al. 2025).

Regarding parity, many studies focus specifically on childless individuals (Powdthavee et al. 2024; Rackin et al. 2023; Arnocky et al. 2012), while others simply control for parity in their models (Szczuka 2022). Bastianelli (2025) examined the association between climate change concern and fertility intentions separately for childless individuals and parents. She found that the negative relationship observed among individuals without children was not significant among parents. By looking at the relation between climate change concern and intended family size among childless individuals, the author found that the climate concerns were related to intentions to remain childfree rather than merely opting for a reduced family size. The author argues that this negative association may be primarily driven by apprehension about bringing a child into a world perceived as doomed, rather than by a general desire to reduce environmental impact. If the latter were the main motivation, one would expect to observe a link with intentions to limit family size, rather than with

intentions to remain childfree altogether. De Rose and Testa (2015) conducted a parity-specific analysis and observed no association between environmental concern and intended number of children overall, except among individuals with one child, for whom stronger environmental concern is associated with a higher intended number of children. The authors, along with Szczuka (2022), suggest that people who are already parent, or plan to have a large family, might be more concerned because they are worried about the future of their children. On the other hand, Price and Bohon (2019) show the opposite evidence -true for women and not for men: larger family size is associated with lower climate change concerns. In this case, the authors hypothesize that having more children represents greater relevance of traditional gender roles, which in the US is commonly associated with denial of anthropogenic climate change (Price and Bohon 2019; Goeminne 2012). Examining the effect of childbirth on parents' environmental and climate concerns in Germany, Zoch and Kapelle (2025) find small and predominantly negative effects of childbirth on environmental and climate concerns in the first year following the child's birth, with the trend gradually shifting toward slightly positive effects over time (Zoch and Kapelle, 2025). Recently, Puglisi et al. (2025) tested whether parity moderated the negative relationship between climate concerns and fertility intentions but found no significant moderating effect. The variability in previous findings highlights the need for further empirical investigation that considers potential heterogeneity across parity groups. Distinguishing between the two types of climate-related childbearing concerns might enable a more nuanced exploration of the mechanisms linking these concerns to intended family size. For example, individuals who already have children might hesitate to have additional ones due to concerns about the environmental impact of childbearing (*CC: impact on climate*). Alternatively, as suggested by De Rose and Testa (2015) and Szczuka (2022), parents might experience heightened climate-related worry related to their children's future well-being (*CC: impact on child*), and therefore be more likely to report this as a motivation.

Exposure to climate related natural hazards associated to climate change concerns and fertility intentions

Although several studies have shown that individual experiences of climate-related events –like floods, extreme precipitation, or heatwaves– are linked to stronger beliefs in climate change (Rüttenauer 2023; Howe et al. 2019), no evidence is present –to our knowledge– about the link between exposure to natural hazards related to climate change and fertility intentions in the context of industrialized societies. Auto-photography analysis conducted by Smith and colleagues (2023) reveals that the experience of 'catalysing events' has brought participants to change their perception of climate change and childbearing, and these events, in some cases, consisted of exposure to the effects of climate change (Smith et al. 2023). Based on these premises, we may expect that individuals who report having been strongly exposed to climate change-related natural hazards in recent years will be more likely to express climate change childbearing concerns.

3. Data and Methods

Data and selection of the sample

Our analysis utilizes data from the *Rapporto Giovani* project, collected by the Osservatorio Giovani of the Istituto Toniolo, which conducts several annual surveys on various aspects of the conditions of young people in Italy. Once a year, an international survey is also carried out, involving smaller but still representative samples of the youth populations in other European countries. Representativeness is ensured through quotas based on the distribution of several socio-demographic characteristics—including age group, gender, educational level, employment status, NUTS-1 area of residence, and municipality size—as reported in the Eurostat database.

Our sample comes from the 2022 international survey, conducted via computer-administered web interviews (CAWI) in November 2022. The sample comprises 5,948 individuals aged 18 to 34: 1,986 from Italy, 991 from the UK, 991 from France, 997 from Germany, and 983 from Spain. The *Rapporto Giovani* project and the Osservatorio Giovani are funded by the Italian foundation Fondazione Cariplo, which allows for a larger investment in the Italian sample, resulting in a larger national subsample compared to those of the other European countries involved.

Respondents were initially asked if they planned to have a child in the next three years. About 59% (n = 3,495) responded negatively (disagree or strongly disagree). These individuals were then asked to what extent various factors influenced their decision (on a 4-point Likert scale from 'not at all' to 'a great deal'). The factors included:

a) Having kids is not part of my life project (*not in life project*)
b) I'm single (*single*)
c) Health reasons (personal or of the partner) (*health*)
d) It is not compatible with either my or my partner's employment (*work-family conflict*)
e) I should change my lifestyle/give up my interests (*change of lifestyle*)
f) I cannot financially afford a(nother) child (*financial hardship*)
g) I don't have any childcare support (grandparents, kindergartens, babysitters, etc.) (*no care support*)
h) I would be too worried about the future that awaits the child because of climate change (*CC: impact on child*)
i) I would be too worried about the future that awaits the child because of the economic situation of the country (*future economy*)
j) Each new human being has an environmental impact on the planet (*CC: impact on climate*).

Climate change concerns, our-dependent variables, were operationalized according to items h and j.

Variables

Figure 1 illustrates the structure of the dependent variables used in the analysis.

***Fig. 1** - The two dependent variables used in the multinomial logistic regression analysis*

FIGURE 1

The first dependent variable addresses concerns about the impact of having children on climate (*CC: impact on climate*), categorized as follows:

i) Respondents who plan to have children in the next three years (*Wants kids*).
ii) Respondents who do not plan to have children in the next three years and agree or strongly agree with item j) regarding worries about the impact of having a child on the climate (*No kids – CC: impact on climate*).
iii) Respondents who do not plan to have children in the next three years and do not cite the environmental impact of the child as a motive (*No kids - other reasons*).

The second dependent variable focuses on concerns about the future well-being of a newborn. It mirrors the first dependent variable but replaces category (ii) with those who do not plan to have children in the next three years and agree or strongly agree with item h) about the consequence of climate change on the child's future well-being (*No kids – CC: impact on child*).

We include several key categorical covariates in our analysis. To examine the potential relationship between the direct experience of climate change-induced natural hazards and fertility intentions, we consider whether respondents reported experiencing such hazards (e.g., floods, storms, tornadoes,

heatwaves, cold waves, droughts, wildfires) in the past five years. Respondents rated the impact on a 5-point Likert scale, which we categorize into three levels: strongly hit, moderately hit and not hit.

We include several covariates to capture demographic and socio-economic heterogeneities: gender, as reported by the respondent; the employment condition, classified into five categories: students, NEETs (Not in Education, Employment, or Training), employed with a permanent contract, employed with a non-permanent contract, and autonomous workers; the educational level: tertiary, secondary, and primary education (the latter contains secondary school until age 15); the area of living, categorized as rural, urban, or peripheral. We control for parity (zero, one, two or more children) and whether the respondent reports being in a stable relationship. We include country-fixed effects to account for unobserved heterogeneity across countries.

Statistical implementation

First, we assess the extent of the occurrence of the two climate change childbearing concerns through a descriptive analysis and use Pearson correlation matrix to examine whether these concerns are related to other motives for not wanting children (e.g. economic uncertainty).

Second, because we are dealing with categorical dependent variables, we use multinomial logistic regression models. We stratify the model analysis by age groups, as age is a key life-course marker in fertility decision-making, and previous research has shown that both fertility intentions and climate change concerns vary significantly across age groups. The selection of the age group cut-offs is guided by the construction of the sampling quotas, which ensures that these specific age groups are representative of the broader population.

The analysis aims to determine possible links between socio-economic and demographic characteristics with climate change childbearing concerns. Despite the fact that estimating a single model to compare different motivations behind respondents' positive and negative fertility intentions could be seen as a more comprehensive analytical strategy, the way the questions on fertility intentions and motives are formulated in the questionnaire unfortunately prevents such an analysis. Fertility motives, in fact, are collected only for those not intending to have a child in the next three years. As a result, a model predicting fertility intentions based on multiple motivations is not viable. Trying to partially overcome this limit, we tried an alternative model specification in which a categorical dependent variable combined economic concerns with the ones related to climate change, allowing for the comparison of overlapping and exclusive concerns. However, some of these categories – e.g. worries for the climate childbearing concerns and not for economic concerns -included very few observations (see Section 4 and Supplementary Table 2), which limited the robustness of the estimates.

We retain the full sample and account for country-level differences by including country fixed effects in the models, as disaggregating the analysis by country would lead to estimates based on very small sample sizes, compromising the reliability and stability of the results.

Sampling weights are applied to adjust for discrepancies between the achieved sample and known population with respect to the socio-demographic characteristics on which the quotas have been calculated (i.e., gender, age in classes, level of education, employment condition, NUTS-1 region of residence, and municipality size), thus compensating for over- or under-representation. Results are presented in terms of average adjusted predictions (AAPs) with 83.55% confidence intervals, following MacGregor-Fors and Payton (2013).[1]

[1] While the 95% confidence interval is standard for assessing individual parameter uncertainty, it is not ideal for comparing two estimates. Instead, using an 83.55% confidence interval is recommended because non-overlapping 83.55% confidence intervals between two independent estimates approximate a two-sided significance test at the 5%

Fit tests for multinomial logistic models, namely the Wald test for combining outcomes and the Hausman test of Independence of irrelevant alternatives (Long and Freese 2006) confirm the models' suitability. We compute correlation coefficients to address potential multicollinearity among covariates (e.g., employment condition and education level), finding the highest correlation (0.27) between parity and being in a stable relationship. We also run the VIF test on logistic models, with dichotomous dependent variables (e.g. 1 = reporting *No kids – CC: impact on child*; 0 = *No kids – other reasons*). VIF values indicate negligible collinearity, as none exceed the threshold value of 5. The results of these tests are available upon request.

4. Descriptive results

This initial analysis focuses on respondents not planning to have a child in the next three years (59% of the sample, N = 3,495). Figure 2 displays the percentage of individuals who agree or strongly agree with various reasons for not planning a (new) childbirth within the next three years.

The concern for *CC: impact on child* is cited as a reason for not planning to have children (agree or strongly agree) by over half of respondents across age groups: 54% in the 18–24 group, and 55% in both the 25–29 and 30–34 groups. The concern for *CC: impact on climate* is reported by 43% of respondents aged 30–34, 39% of those aged 25–29, and 36% of those aged 18–24.

Among respondents in the middle and older age groups, economic motivations (i.e. concern for the *future economy* and *financial hardship*) are the most frequently cited reasons for not planning a child. In the 30–34 group, *CC: impact on child* is the second most reported reason, while in the 25–29 group it ranks third, following *change of lifestyle*.

A somewhat different pattern emerges among the youngest respondents (18–24). While *financial hardship* remains the most frequently mentioned reason, it is followed by *change of lifestyle* and *being single*. Only after these, do the contextual motivations—concern for the *future economy* and *CC: impact on child*—appear.

***Fig. 2** - Percentage of respondents that agree or strongly agree with each motivation for not having a child in the next three years. Sample of individuals who do not want children in the next three years in the age group 18-24 (left side, N=1,330), 25-29 (in the middle, N=1,027) and 30-34 (right side, N=1,138). Source: Osservatorio Giovani, Istituto Toniolo, November 2022*

FIGURE 2

The heat plot (Fig. 3) explores common response patterns, showing correlations among various motives. Through a correlation matrix, we observe if respondents who answer to an item with a certain level of agreement are more likely to respond to a(nother) specific item with a similar level of agreement. Respondents who answered 'I don't know' to any of the response items were dropped from this step of the analysis (1,045 observations). Most correlation coefficients between response items are below the value of 0.35. The highest correlations are observed among the items related to climate change and concerns for the economic future: *CC: impact on a child* and *CC: impact on the climate*: 0.514; *CC: impact on a child* and *future economy*: 0.621; *CC: impact on climate* and *future economy*: 0.425.

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level ($p < 0.05$). This means that if the 83.55% intervals do not overlap, the difference between the estimates is likely statistically significant at the conventional 95% level. This approach provides a clearer and more intuitive basis for visual or tabular comparisons, especially in nonlinear models like logit or probit (MacGregor-Fors and Payton 2013). AAPs provide the predicted probability of an outcome for a fixed value of the regressor of interest (e.g., gender fixed to female) while keeping other covariates at their observed values (Williams 2012). This method avoids the interpretative drawbacks of log-odd scale results and odd ratios, which are unsuitable for comparing different models (Mood 2010).

The relatively high correlation between the responses related to climate change childbearing concerns and those related to the country's future economy suggests that individuals concerned about climate change also share a more extensive sense of uncertainty regarding the future. For additional analyses, see Supplementary Table 2[2].

Fig. 3 *– Heat-plot of Pearson correlation coefficients among fertility intentions-related variables. Sample of individuals aged 18-34 who do not want children in the next three years, excluded those who respond 'I don't know' to any of the items (N=2,450). Source: Osservatorio Giovani, Istituto Toniolo, November 2022*

FIGURE 3

Supplementary Table 1 reports the percentage distribution of the dependent and independent variables used in the multinomial logistic regression models, adjusted for sampling weights. To determine if the distribution differs between the three age groups, we use the Pearson chi-squared statistic, which becomes an F-test when corrected for survey design (Rao and Scott 1984).

5. Results from the Multinomial Logistic Regression

Here we present the main results from the multinomial logistic regression models and results from some heterogeneity analyses. The full results of the models are in the Supplementary Material (see Supplementary Tables 3 to 14). Reading the results by row (e.g., examining 'females' in Supplementary Table 3), each main column of the supplementary table shows the probability of falling into one of the categories of the dependent variable '*CC: impact on climate*' based on 'being a female'. At the same time, the graphs in the 'Results' section (Fig. 4 to 7, plus Fig. 8 in the Supplementary Materials) allow for comparison of the probabilities of reporting climate change childbearing concerns according to specific covariates (column comparison for each covariate, when looking at Supplementary Tables 3 to 16).

Main results

To begin with, we estimated the three models on the full sample (individuals aged 18–34), including all socio-economic and demographic characteristics as covariates, and adding the age group as a key independent variable (see Supplementary Tables 9 and 10). This allowed us to assess whether age itself—net of other individual characteristics—was significantly associated with the likelihood of reporting the three types of concerns.

The results show that individuals in the 18–24 age group display higher probabilities of expressing climate-related concerns, although the pattern varies by type of concern. Specifically, they are 7 percentage points more likely than those aged 25–29, and 5 points more likely than those aged 30–34, to report *CC: impact on child.* For *CC: impact on climate*, respondents in both the 18–24 and

[2] Looking at the sample distribution by crossing the economic with the two climate change concerns (Table 2 in the Supplementary Materials), we find that only a small share of respondents express climate change-related concerns in the absence of economic concerns, with proportions ranging from 1.8% to 3.2% across the different age groups. Conversely, a relatively high proportion (26% to 36% across age groups) cite both economic concerns and *climate change: impact on child* as compelling reasons for not intending to have children. This is roughly twice the share of those reporting economic concerns without worry about *CC: impact on child* (12.7% to 20.8%). The pattern differs slightly for *CC: impact on climate*: the share of respondents expressing both concerns is similar to those citing only economic concerns, though in the 18–24 age group the gap is more pronounced.

30–34 age groups show similar probabilities, significantly higher than those in the 25–29 age group (+4 p.p.).

Given these differences, we then stratified the models by age group (18–24, 25–29, and 30–34) to explore whether the socio-economic and demographic characteristics associated with the concerns vary across these distinct life stages (Supplementary Tables 3 to 8). While the models estimated on the full sample indicate that respondents aged 18–24 have relatively high probabilities of reporting climate change-related childbearing concerns, these concerns are not significantly associated with socio-economic predictors. For this reason, in the subsequent analysis, we focus on the models estimated on the 25–29 and 30–34 age sub-groups.

The self-reported experience of natural hazards is positively associated with the two climate change childbearing concerns (Fig. 4, Supplementary Tables 5 and 7), though in different ways in the two age groups: strongly hit respondents aged 25-29 present significantly higher probabilities to report *No kids - CC: impact on child*, compared to both those not hit (+8 p.p.) and moderately hit (+12 p.p.); on the other hand, in age group 30-34, being strongly hit is associated to higher chances of presenting *No kids - CC: impact on climate* with respect to those not hit (+8 p.p.).

***Fig. 4 - Hit by natural hazard**. Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns, by degree of self-reported exposure to natural hazards. Results from multinomial logistic regression models with control variables included (see Supplementary Tables. 4 to 8). Note: 83.55% CI. The graph on the left side refers to age group 25-29 (N=1,966), while the graph on the right refers to age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*

FIGURE 4

In the age group 30-34, being female is positively associated with *No kids – CC: impact on child* (Fig. 5 and Supplementary Table 8), with females having a 5 p.p. higher probability than males to present the concern.

***Fig. 5 – Gender.** Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns, by gender. Results from multinomial logistic regression models with control variables included (see Supplementary Tables 4 to 8). Note: 83.55% CI. The graph on the left-side refers to age group 25-29 (N=1,966), while the graph on the right refers to age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*

FIGURE 5

The covariate *employment status* presents significant associations with both the climate change childbearing concerns in the age group 25-29, while it is not significant in the age group 30-34. Figure 6 shows the AAPs of reporting the concerns by employment status in the two age groups.

***Fig. 6 – Employment status.** Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns, by employment status. Results from multinomial logistic regression models with control variables included (see Supplementary Tables 4 to 8). Note: 83.55% CI. The graph on the left-side refers to age group 25-29 (N=1,966), while the graph on the right refers to age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*

FIGURE 6

In the age group 25-29, students yield the highest probabilities to positively answer the two motivations for not having a child. The predictions are significantly higher with respect to the other employment status categories (with the only exception of the NEETs for *No kids – CC: impact on*

climate). Moreover, in this same age group, young adults employed with non-permanent contracts present higher chances to report *No kids – CC: impact on child* compared to autonomous workers (+9 p.p.).

Additionally, the variable parity is significantly associated with childbearing climate change concerns, primarily due to a consistent drop in the probability of presenting these concerns by respondents with one child (see Fig. 7). According to the supplementary tables (Supplementary Tables 4 to 8) in fact, parents of one child are indeed very likely to want a second child in the next three years. Concerning parity two or more, while in the age group 25-29, the probability of presenting the two concerns rises to values similar to those for parity zero, in the age group 30-34 there is a pick in the chances of presenting the *No kids - CC impact on child* (+6 p.p. with respect to parity 0, +14 p.p. with respect to parity 1).

Fig. 7 – Parity. *Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns, by parity. Results from multinomial logistic regression models with control variables included (see Supplementary Tables 4 to 8). Note: 83.55% CI. The graph on the left side refers to the age group 25-29 (N=1,966), while the graph on the right refers to the age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*

FIGURE 7

Additional heterogeneities

Both the level of education and the area of living do not present any significant association with the climate change concerns.

Little country differences are detected (see Fig. 8 in the Supplementary Material). It is worth highlighting that Germany presents lower probabilities of reporting *CC: impact on child* compared to Italy (-8 p.p.) and Spain (-9 p.p.) in the age group 25-29 and compared to Italy (-6 p.p.) and France (-8 p.p.) in the age group 30-34. The United Kingdom has a higher probability of reporting *CC: impact on the climate*, although the difference from other countries is not significant.

Being in a stable relationship is significantly associated with lower chances of reporting climate change childbearing concerns in all models, with a higher magnitude of difference in the age group 30-34 (Supplementary Tables 6 to 8).

To gain a more nuanced understanding of the observed patterns, we conducted an additional analysis stratified by parity, with the results presented in Supplementary Tables 11 to 16. This disaggregated analysis offers further insight into the patterns observed in our main models. While the overall trends in the associations between covariates and each type of concern remain broadly consistent, few relationships reach statistical significance—particularly in the models for individuals with one or more children (parity 1 and 2+), where only age and being in a stable relationship show significance. This is likely influenced by the smaller sample sizes in these subgroups, which result in wider confidence intervals. At the same time, we observe that among childless individuals the 'hit' variable remains significant: those severely hit by extreme weather events are more likely than moderately hit to report *CC: impact on child* (+ 6 p.p.), and more likely than those not hit to express *CC: impact on climate* (+6 p.p.).

6. Discussion

The primary objective of our study is to investigate how the concerns about climate change relate to intentions regarding childbearing among young people living in five European countries (Italy, Spain, Germany, France, and UK). We specifically focus on two reasons related to climate change for not having children: 1. the worry about the environmental impact of having a child and 2. the

worry about the threat of climate change on the child's future well-being. We explore how these motives are diffused and how they fit into the broader context of factors that contribute to the declining fertility expectations (Luppi et al. 2025) and rates in Western countries over recent decades. Our analysis accounts also for potential age differences within our population, based on the premise that motivations for not intending to have a child in the short term are likely to evolve throughout the reproductive life course.

Our findings indicate distinct patterns across age groups. When we estimate the models on the full sample, including age group as a key covariate, we find that belonging to the 18-24 age group is associated to higher probabilities of reporting *CC: impact on child* and *CC: impact on climate*— the latter only compared to those aged 25–29. In the following step, when we stratify the sample by age group, the socio-demographic analysis reveals that our predictors (e.g., exposure to natural hazard, employment status) are not significative for the youngest age group, while they are for the older age categories.

Few considerations can be drawn from these results. First, we should consider that people aged 18 to 24 in 2022 were born between 1998 and 2004, meaning that most of them were in high school during the rise of the Fridays for Future movement in 2019. This cohort may have been particularly exposed to climate change discourse during a formative period of their lives, potentially shaping a heightened awareness of environmental issues. This age group also roughly corresponds to the cohort of individuals who were in high school between 2017 and 2019, for whom Racking et al. (2023) found a stronger association between environmental concern and fertility preferences, compared to those who attended high school in earlier years. This could lead to think that the higher probabilities of reporting the concerns for the 18-24 age group might reflect a cohort effect.

At the same time, fertility intentions among individuals at such a young age are likely still in a formative stage (Lazzari, Compans, and Beaujouan 2022). In the countries considered the average age at first birth is close to 30 (see *Fertility Statistics* for EU countries; *Birth characteristics in England and Wales* – Office for National Statistics, for the UK). While young adults may already express parenthood-related desires, these often do not yet translate into concrete short-term intentions (Miller 2011). In fact, they are most likely to express a general non-intention to have a child within the next three years –74%, compared to 53% among those aged 25–29 and 54% among those aged 30–34 (see Supplementary Table 1). Therefore, the stronger association between belonging to the 18-24 age group with climate change childbearing concerns found in the models estimated on the full sample may reflect higher baseline non-intention rather than a greater role of climate concerns in decision-making. It is plausible that some respondents in this age group—despite not planning to have children in the short term—still report climate change as a concern because they perceive it as a broader societal threat, rather than a primary reason for postponing childbearing.

Given the abovementioned considerations, in the context of our study we decided to place greater emphasis on results from the two older age groups, for whom fertility intentions are likely more reasoned and actionable.

Focusing on older respondents (25-29 and 30-34), the descriptive analysis confirms that economic concerns are the most cited reasons for not planning for a child, in both age groups. The concern for *CC*: *impact on child* comes right after in the age group 30-34, while it is overcome (only) by item *change of lifestyle* in the age group 25-29. The large extent to which respondents give this motivation for not planning for a child, and its prevalence compared to other reasons, suggests that the fear for the child's wellbeing in a climate-changed world has become embedded into young adults' childbearing considerations. The two childbearing concerns are highly correlated to the fear for the country's future economic situation (*future economy*). This supports the hypothesis that climate change concern is tied to general future uncertainty and instability, particularly in its

specification about the wellbeing of the newborn (*CC: impact on the child*). It is relevant to reflect on the fact that young people not only worry for their wellbeing and how this might be impacted by having a(nother) child, but they also worry for the wellbeing of the next generations, at the point of questioning whether the life of a newborn would be safe and fulfilled enough.

Through the multinomial logistic analysis, we find that self-reported direct exposure to natural hazards caused by climate change is positively associated with climate change childbearing concerns, in line with the considerations made in previous qualitative studies (Smith et al. 2023) but now supported by quantitative evidence.

An age difference emerges. Individuals aged 25-29 strongly hit by natural hazards are more likely to report *No kids – CC: impact on child*, while those aged 30-34 are more likely to report *No kids – CC: impact on climate*. This result might reveal that the two age groups carry different vulnerabilities related to fertility intentions that are exacerbated when the person is strongly hit, suggesting an age-effect. In this sense, the experience of a strong environmental disaster might result in a particularly critical situation for people in the younger age group because of the frailties that characterize their life stage (e.g. finding economic and housing autonomy). The higher chances of reporting *No kids – CC: impact on child* when strongly hit might be reconducted to a prevalence of scarce capabilities of responding to the natural disaster, which increases the concern about what the child might face in their life due to climate change. Knowing that the effects of climate change are intensifying, vulnerable people experiencing substantial impacts from natural hazards might be particularly aware and worried about what the future holds for their children. Not only that, but they might also fear being unable to provide the newborn with good living standards in the first period of her/his life. On the other hand, for people in the age group 30-34, being strongly hit breaches a higher likelihood of being worried about the child's impact on the climate, which is more of a 'moral', or 'ethical' concern, focusing not solely on the wellbeing of one's child but on the broader implications for the Earth system itself.

This is coherent with the result obtained when running the model on the entire sample with age as a covariate: belonging to the age group 30-34 results to be positively associated with this climate change childbearing concern with respect to the age group 25-29. In this sense, the 30-34 age group might be more 'conscious' about the risks related to climate change and therefore, feel more responsible. At the same time, these are people of the typical age for having children and therefore are also those who experience higher societal and family pressure compared to younger generations. People who, for various reasons, are not planning to have a child might be keen to positively respond to the climate change motivations -especially if they sound noble and conscientious- because of their higher social desirability, compared, for example, to saying that having a(nother) child is a too demanding responsibility. It is also possible that references to climate concerns may, in some cases, mask deeper personal fears—such as worries about running out of time to start a family or doubts about one's readiness for parenthood—which might be more difficult to acknowledge openly.

Significant differences in employment categories emerge within the 25–29 age group. Students are more likely to express both climate change-related concerns. Being a student often implies a lack of stable income, but it also entails immersion in academic and social environments where ideas around environmental responsibility and sustainability may be more prominent. This reflects that student status may reflect both material vulnerability and exposure to value-driven, idealistic discourses.

Within the same age group, predicted probabilities of expressing *CC: impact on child* tend to be higher among employees with non-permanent contracts compared to self-employed individuals and

-although not statistically significant- also compared to the other groups, especially employees with permanent contracts. This pattern may suggest that this particular childbearing concern, characterized by its 'altruistic' focus on the child's future well-being, is especially tied to socio-economic vulnerabilities and traditional forms of uncertainty, such as financial insecurity.

When looking at the results related to gender, we find that women in the age group 30-34 are more likely than men to report *No kids – CC: impact on child*. This gender difference aligns with the literature suggesting women are generally more concerned about climate change (in the more general perspective, not specifically regarding childbearing) (Bush and Clayton 2023; McCright et al. 2016; Hunt 2020). Furthermore, the observed gender difference in this specific concern—focused on the well-being of a future child—may be understood in light of broader evidence that women, more than men, tend to prioritize children's well-being. While much of this evidence comes from research on female political participation, which shows that women in leadership positions are more likely to advance policies that improve child health outcomes (Macmillan, Shofia, and Sigle 2018; Quamruzzaman and Lange 2016), this pattern may also extend to personal decision-making. Although these studies do not directly focus on parental concerns about climate change, they suggest a broader tendency for women to place greater emphasis on children's well-being, which may help explain why women in our study are more likely to report this concern.

At the same time, women are generally more vulnerable in terms of income and employment stability, especially when talking about having a child: if we think that the concern (specifically, the one regarding *CC: impact on child*) reflects a broader perception of uncertainty, this might be an additional reason why we have this result for women. Finally, it is also important to consider that women, especially those aged 30–34, may experience heightened social pressure of having children because of the narrative around the so-called "biological clock" and might therefore positively respond to this climate change related motivation because of its social desirability.

The inclusion of parity provides additional insights. Our analysis reveals a sharp decrease in the chances of reporting both climate change-related concerns for those who have the first child, as many parents of one child plan to have a second within the next three years. However, the probability of reporting climate change-related childbearing concerns (and economic concerns) increases for those with two or more children, resembling the values observed among childless individuals.

This pattern is similarly observed for both the climate related concerns and in both the age groups, but it is particularly pronounced among respondents aged 30-34, who exhibit, compared to other parities, particularly high probability of reporting *CC: impact on a child*. In trying to understand how comes that people who refrain from having a third (or higher order) child say that it is because they are too worried for the future wellbeing of their child, we might refer to different possible explanations. The first 1) is -again- the social desirability of concerns about climate change: respondents who already have two or more children might have reached their desired number of children and positively respond to this climate-related item (but also the one related to the *CC: impact on climate*) because they sound as noble motivations for not wanting more children. At the same time, 2) people who already have 2 or more children might worry about being able to guarantee a good standard of living to the new and existing children they have, and climate change adds up to this perception of instability.

In the same direction, we might also reconduct to 3) the hypothesis of De Rose and Testa (2015), along with Sczucka (2022), which explains the positive association between climate-change-related concerns and large families with the fact that people start to (or exacerbate the) worry about the

threat of climate change when becoming parents, because they become more aware, and concerned, for the wellbeing of their children. This hypothesis, of course, applies to the *CC: impac*t *on child*. By contrast, 4) responses citing *CC: impact on climate* may reflect genuine worries about the environmental footprint of adding another child.

Some additional insights emerge when observing the results of the analysis stratified by parity (Supplementary Tables 11 to 16). The models show that the significant associations identified in our main analysis -particularly those related to self-reported exposure to natural hazards- are primarily concentrated among childless respondents. This suggests that exposure to natural hazards may be more closely associated with climate change childbearing concerns among those who have not yet had children, and that such concerns may contribute to decisions to remain childless. By contrast, among respondents with one or more children, few covariates show significant associations- possibly due to smaller sample sizes. However, this lack of variation may also suggest that parents report concerns more uniformly, regardless of their socio-economic or demographic characteristics, lending support to interpretations based on social desirability, as well as to the idea that such concerns may reflect heightened awareness of future uncertainty once individuals have already become parents.

In line with previous studies (De Rose and Testa 2015; Bastianelli 2024), we find no significant association between childbearing climate change concerns and education and the area of living.

Overall, the socio-demographic characteristics associated with the two climate change-related childbearing concerns are quite similar. However, concern for a child's well-being (*CC: impact on child*) shows a stronger association with indicators of vulnerability, such as unstable employment. This concern is also more prevalent among women. Moreover, experiencing climate-related hazards (as captured by the *hit* variable) is significantly associated with the *CC: impact on child* among respondents aged 25–29. This is a life stage when many individuals are beginning to establish economic and housing independence. In this context, personal exposure to climate hazards may heighten pre-existing anxieties about raising a child in uncertain or precarious conditions.

In contrast, among respondents aged 30–34, exposure to natural hazards is more strongly associated with the *CC: impact on climate*. This may reflect a shift from immediate, family-oriented concerns toward broader environmental considerations. This form of concern is also more frequently reported by individuals in the older observed age group (30-34), which could reflect the influence of social desirability at a time of life when societal expectations around childbearing are more pronounced.

Taken together, these findings suggest that concern for a child's well-being may function similarly to more traditional forms of uncertainty—linked to fears about a child's future in the context of socio-economic insecurity—while concern about the environmental impact of having a child appears to be less tied to personal vulnerability. Rather, it may reflect a different kind of uncertainty, focused on the long-term health of the planet and the legacy left for future generations.

7. Limitations and conclusions

This study has some limitations. Since we are considering short-term fertility intentions, this implies a risk of bias for individuals who want a child in the long term but are keen to postpone parenthood for the moment. Even though they can provide an answer to other items that best fit their motivations for not planning for a child in the short term, some people might positively answer to the climate change childbearing items just because they consider climate change as a threat, even though it is not among the reasons for not planning for a child. As already mentioned, there is indeed a social desirability that comes along with the responses related to climate change, and this might result in an overestimation of the prevalence of these concerns.

Another limitation is that the main variable used to capture the respondent's economic conditions does not cover income and family background. Moreover, we do not consider the partner's socio-economic conditions in the analysis, which might be relevant in shaping childbearing choices. Lastly, it would be very interesting to extend the analysis to people older than 34 to understand how climate change concerns impact their childbearing choices.

Further research could analyse childbearing climate change concerns in relation to exposure to natural hazards using objective climate data compared with self-reported experiences.

This analysis contributes not only to documenting the prevalence of climate change-related concerns in shaping fertility intentions, but also to highlighting how these concerns intersect with broader feelings of uncertainty and socio-economic vulnerability among young adults. These uncertainties may accumulate and reinforce one another: when individuals perceive both economic conditions and the environmental future as unstable or threatening, parenthood may appear more difficult to envisage. Although we cannot directly estimate the joint effect of economic and environmental uncertainty, the descriptive evidence points in this direction. Climate change–related childbearing concerns are strongly correlated with concerns about the future economic situation, suggesting that, for some individuals, these worries are embedded in a broader perception of future insecurity. This is particularly evident for concerns about the well-being of a future child, which seem to resonate with more traditional fears about the conditions in which future generations will live.

Additionally, by distinguishing between two specific types of climate-related motivations—concern for the child's wellbeing (*CC: impact on child*) and concern about the environmental impact of childbearing (*CC: impact on climate*)—we are able to explore how these concerns may relate differently to underlying motivations and socio-economic conditions, while also sharing some common ground. While the two concerns share some associated characteristics, the concern about the child's wellbeing in a world impacted by climate change appears more closely tied to life-course precarity (unstable employment, being female). This form of concern may reflect a protective stance, focused on the difficulties of raising a child in a future shaped by both environmental and socio-economic instability. At the same time, concern about the environmental impact of having a child shows a slightly different profile—being more common among students and in the older age group (30–34). This may suggest that, in some cases, the concern is rooted not only in personal circumstances but also in broader reflections about sustainability and collective responsibility. It is also possible that social desirability plays a role, especially at a life stage where childbearing expectations are more salient, making climate-related motivations a more socially acceptable way to express ambivalence or hesitation about having children.

Both climate-related concerns are positively associated with self-reported exposure to climate-related hazards. This suggests that personal experience of environmental disruption may play a role in shaping these concerns—possibly reinforcing reflections on the implications of childbearing in a changing world. This relationship is particularly pronounced among individuals with parity 0, indicating that such experiences and related concerns may possibly contribute to decisions to remain childless. As the frequency of such events increases (Roudier et al. 2016), the occurrence of this kind of considerations may become even more salient.

The sources of uncertainty for young people have multiplied over the years due to the increasing complexity of the current times. Addressing these uncertainties, which hinder young people's fertility plans, requires integrated policies that systematically tackle employment and income issues, work-life balance, as well as environmental security, which, as this study and others have shown, is integral to family well-being. This underscores the urgent need for political action to mitigate the

effects of climate change. At the same time, on a parallel trail, it is also crucial to provide individuals with high-quality and affordable childcare, flexible parental leave, and job protection to help bridge the gap between desired and actual fertility rates (Gietel-Basten, Rotkirch, e Sobotka 2022).

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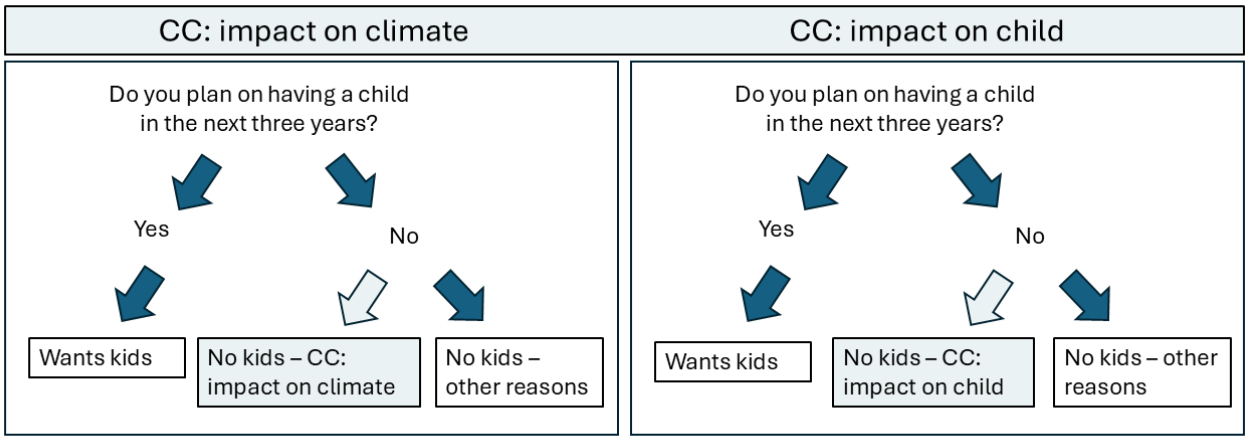
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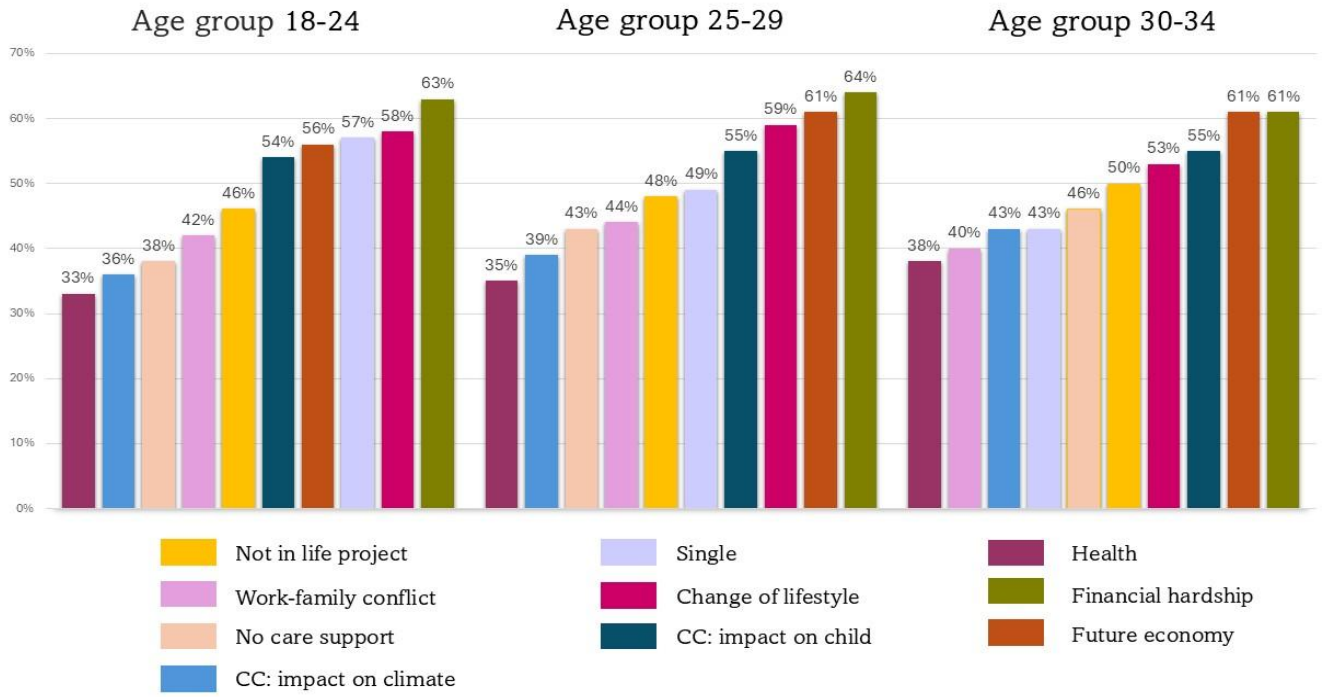
Manuscript figures:

Fig. 1 *- The two dependent variables used in the multinomial logistic regression analysis*



953

954 ***Fig. 2*** *- Percentage of respondents that agree or strongly agree with each motivation for not having*
955 *a child in the next three years. Sample of individuals who do not want children in the next three*
956 *years in the age group 18-24 (left side, N=1,330), 25-29 (in the middle, N=1,027) and 30-34 (right*
957 *side, N=1,138). Source: Osservatorio Giovani, Istituto Toniolo, November 2022*



958

959 ***Fig. 3*** *– Heat-plot of Pearson correlation coefficients among fertility intentions-related variables.*
960 *Sample of individuals aged 18-34 who do not want children in the next three years, excluded those*
961 *who respond 'I don't know' to any of the items (N=2,450). Source: Osservatorio Giovani, Istituto*
962 *Toniolo, November 2022*

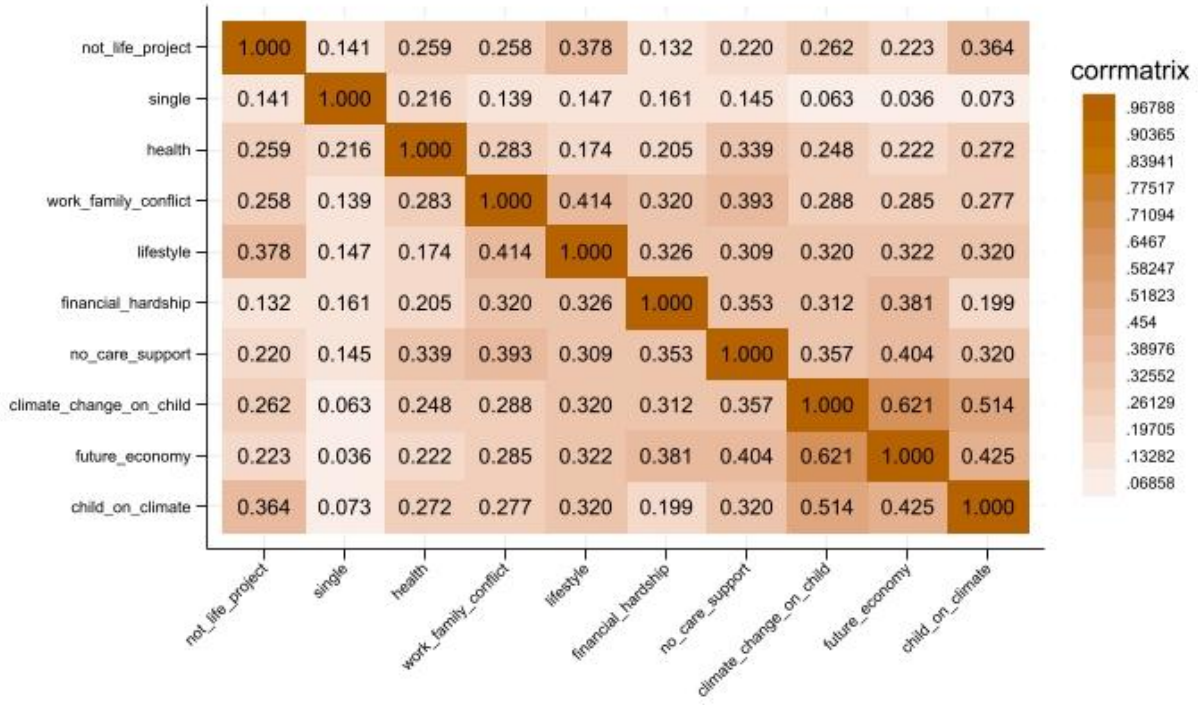


Fig. 4 - Hit by natural hazard*. Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns by degree of self-reported exposure to natural hazards. Results from multinomial logistic regression models with control variables included (see Supplementary Tables 4 to 8). Note: 83.55% CI. The graph on the left side refers to age group 25-29 (N=1,966), while the graph on the right refers to age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*

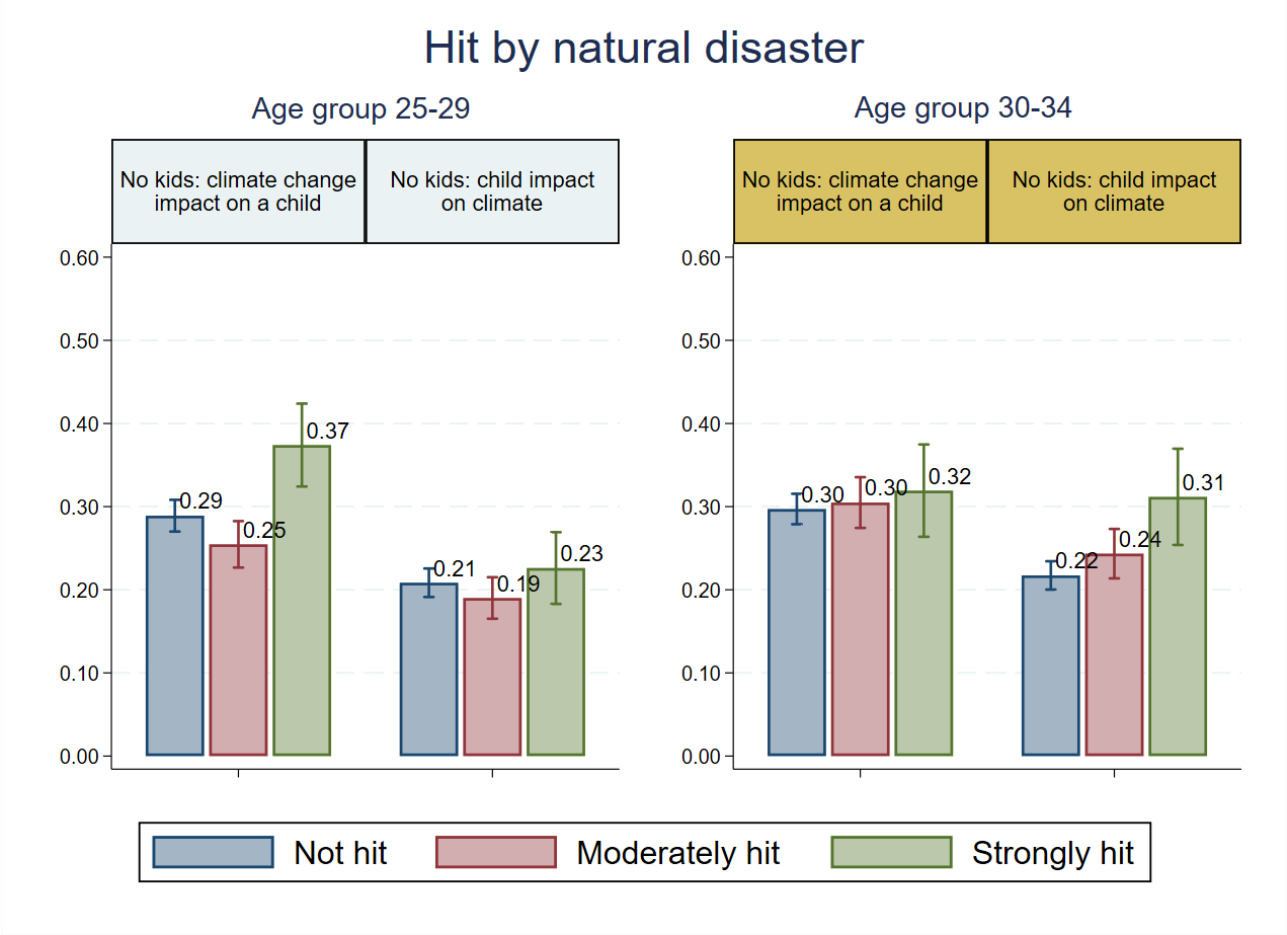
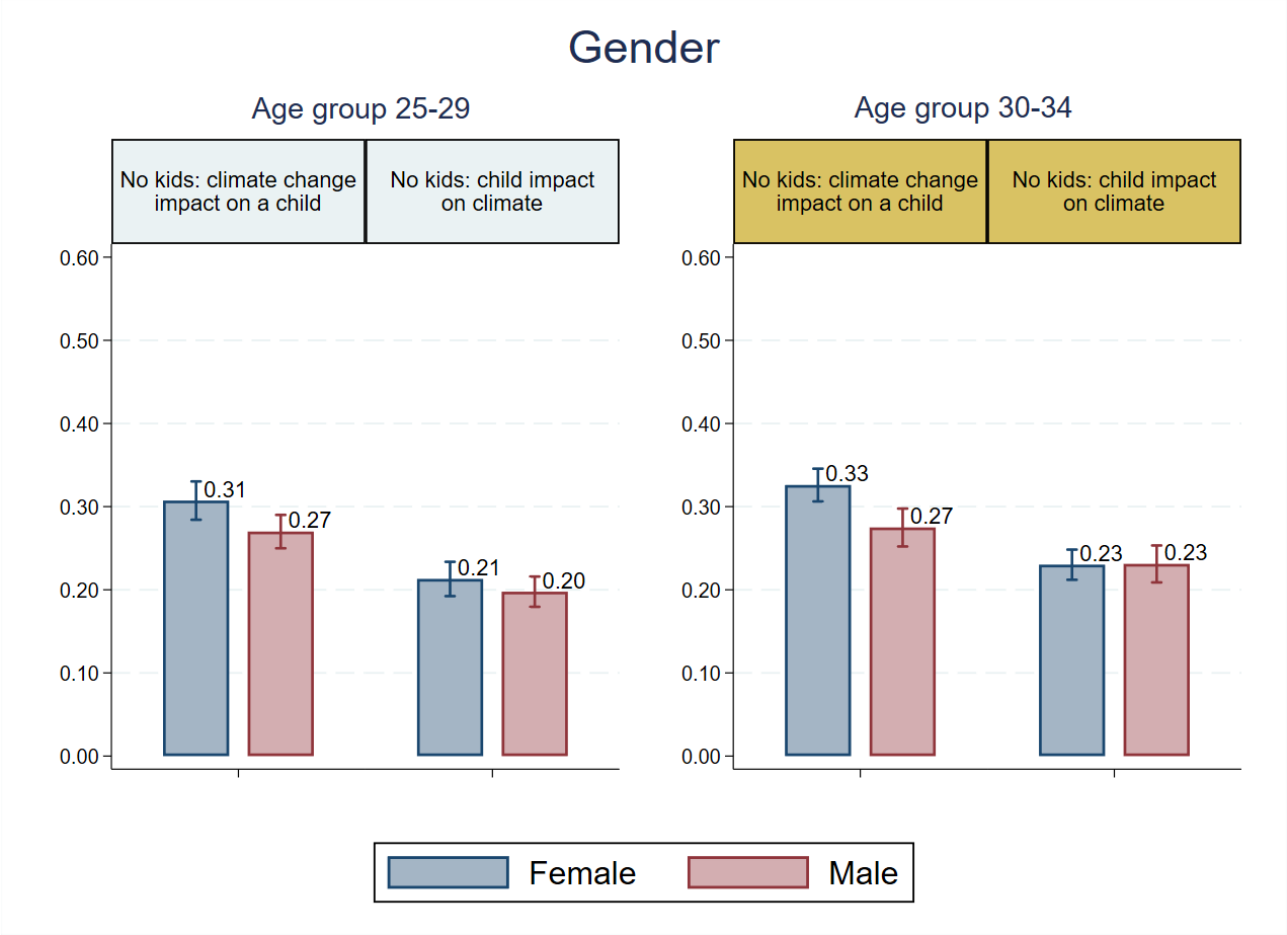


Fig. 5 – Gender. *Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns, by gender. Results from multinomial logistic regression models with control variables included (see Supplementary Tables 4 to 8). Note: 83.55% CI. The graph on the left-side refers to age group 25-29 (N=1,966), while the graph on the right refers to age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*


Gender
Age group 25-29
Age group 30-34
No kids: climate change impact on a child
No kids: child impact on climate
No kids: climate change impact on a child
No kids: child impact on climate
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0.31
0.27
0.21
0.20
0.33
0.27
0.23
0.23
Female
Male

976

Fig. 6 – Employment status. *Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns, by employment status. Results from multinomial logistic regression models with control variables included (see Supplementary Tables 4 to 8). Note: 83.55% CI. The graph on the left-side refers to age group 25-29 (N=1,966), while the graph on the right refers to age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*

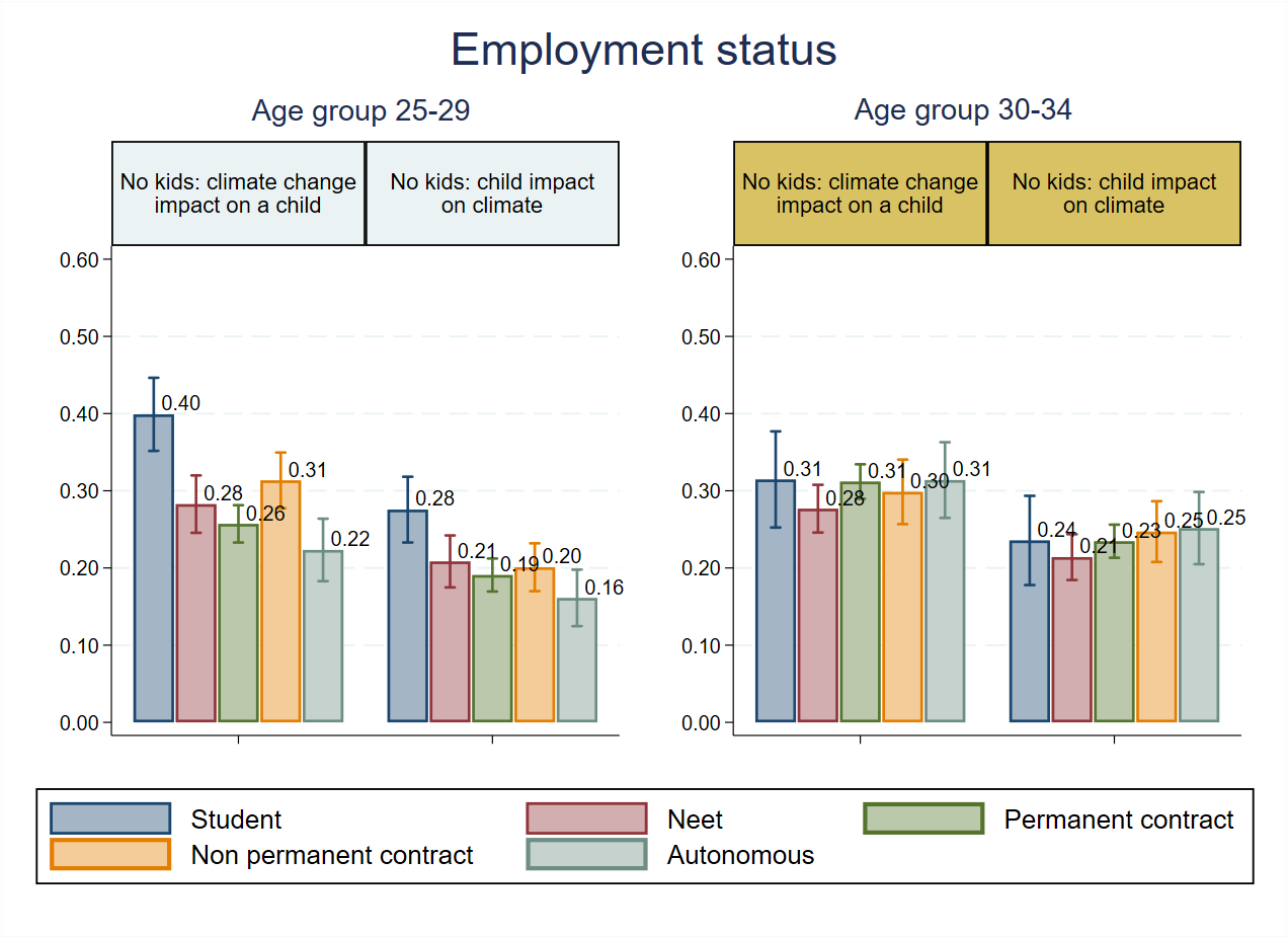
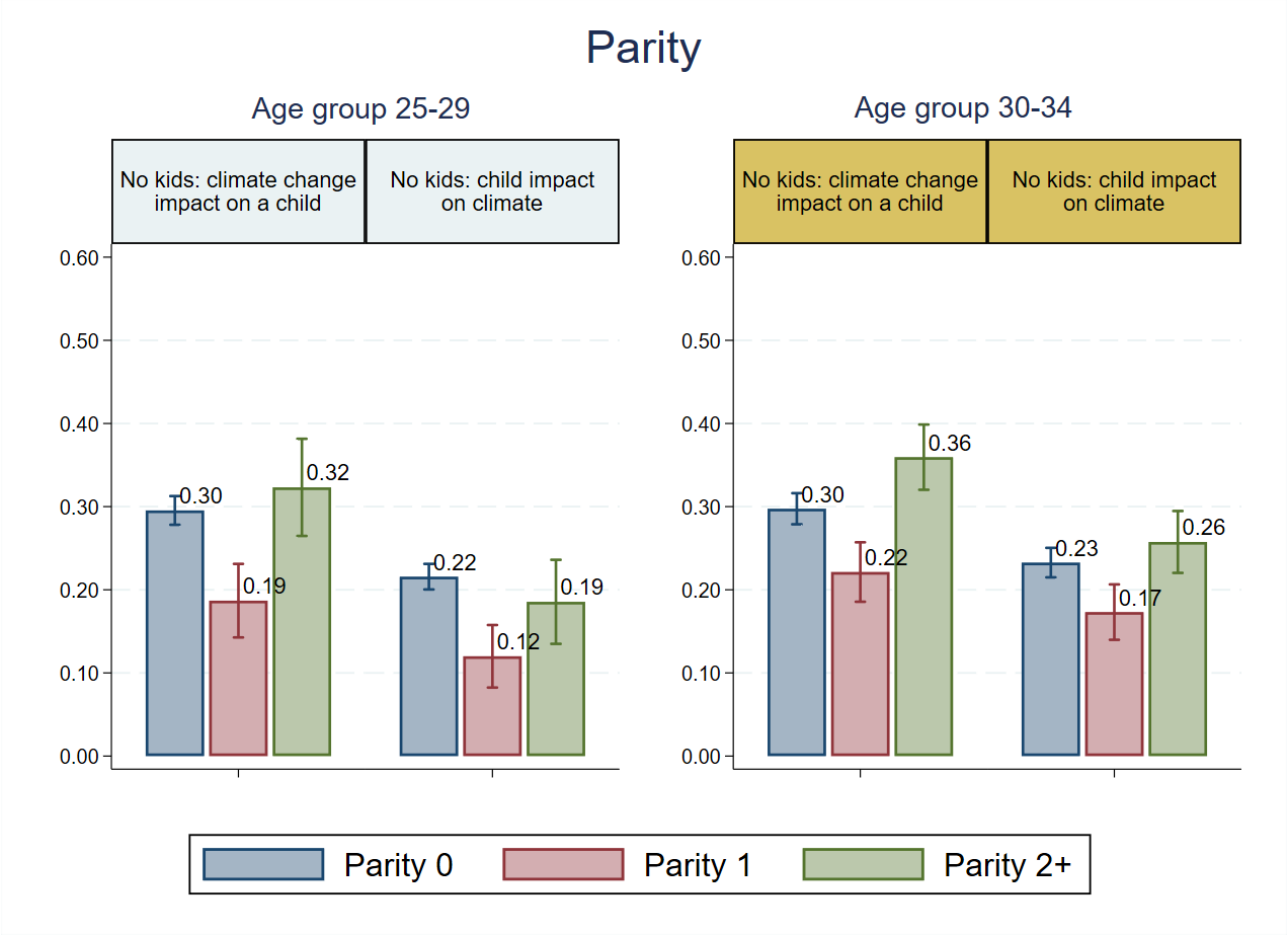


Fig. 7 – Parity. *Average Adjusted Predictions (AAPs) of reporting the two climate change childbearing concerns, by parity. Results from multinomial logistic regression models with control variables included (see Supplementary Tables 4 to 8). Note: 83.55% CI. The graph on the left side refers to the age group 25-29 (N=1,966), while the graph on the right refers to the age group 30-34 (N=2,135). Source: Osservatorio Giovani, Istituto Toniolo, 2022*


Parity
Age group 25-29
Age group 30-34
No kids: climate change impact on a child
No kids: child impact on climate
No kids: climate change impact on a child
No kids: child impact on climate
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0.30
0.19
0.32
0.22
0.12
0.19
0.30
0.22
0.36
0.23
0.17
0.26
Parity 0
Parity 1
Parity 2+

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Supplementary Files

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