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Climate Concern, Economic Capacity, and Fertility Intentions: Comparing Parents and Non-parents across 27 OECD Countries

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Abstract

As fertility declines across many high-income countries, growing attention has been paid to whether climate change affects reproductive decision-making. This study examines how climate concern is associated with fertility intentions, whether this association differs by parental status, and whether it varies by economic capacity. Using the 2024 OECD Risks that Matter survey, we analyze 12,938 respondents aged 50 or younger across 27 OECD countries, including 6,159 childless individuals and 6,779 parents. Negative binomial regression models distinguish between short- and long-term climate concern and test their interactions with economic capacity. The results show three main patterns. First, short-term climate concern is associated with lower fertility intentions, particularly among parents, for whom a one-category increase in concern corresponds to approximately a 10.5% reduction in intended additional children. Second, among childless individuals, long-term rather than short-term concern is associated with lower intended fertility. Third, among childless individuals, the negative association between long-term concern and fertility intentions becomes weaker as economic capacity increases. These findings suggest that climate concern may operate as a source of future uncertainty, but its association with fertility intentions varies by the time horizon of concern, parental status, and economic resources.

1. Introduction

Fertility decline has become one of the most pressing demographic and social-policy concerns across many high-income societies. Existing explanations have largely focused on economic insecurity, the rising costs of childrearing, housing constraints, women's education and employment, gender inequality within households, and changing values regarding marriage, family, and individual autonomy (Becker, 1991; Lesthaeghe, 2010; McDonald, 2000; Mulder & Billari, 2010). These explanations focus mainly on the economic, institutional, and cultural conditions surrounding current fertility decisions. Less attention has been paid to whether people see the future as sufficiently secure to have children.

Climate change provides a particularly relevant context for examining this future-oriented dimension of fertility decisions. Climate change is not only a physical risk measured through temperature, precipitation, or disaster exposure. It can also shape how individuals think about their future and that of their children. For people considering whether to have children, climate change may matter not only through its present material effects but also through concerns about future suffering, intergenerational responsibility, ecological degradation, and whether governments can protect future generations (Hickman et al., 2021; Schneider-Mayerson & Leong, 2020; Vignoli et al., 2020). From this perspective, climate concern can be understood as one form of future uncertainty, although its relevance to fertility decisions is likely to vary across individuals.

A growing body of research has begun to examine this relationship, with several studies finding that climate concerns are associated with lower fertility intentions (Arnocky et al., 2012; Bastianelli, 2024; Bisi et al., 2024; Puglisi et al., 2025). However, the existing literature has several limitations. First, much of the evidence comes from single countries or specific populations, making it difficult to assess whether similar patterns exist across countries. Second, many studies do not distinguish between people who have not yet become parents and those deciding whether to have additional children. Third, climate concern is often measured as a general attitude, with limited attention to differences between short- and long-term concerns. Finally, little is known about whether the relationship between climate concern and fertility intentions varies by economic resources.

This study addresses these gaps using the 2024 OECD Risks that Matter survey across 27 OECD countries. It examines whether short- and long-term climate concern are associated with fertility intentions, whether these

associations differ by parental status, and whether they vary by economic capacity. Childless individuals and parents are analyzed separately because they face different fertility decisions: for childless individuals, whether and how many children to have; for parents, whether to have additional children. The study also examines whether economic capacity changes the association between climate concern and fertility intentions

This study makes three contributions. First, it provides cross-national evidence on the relationship between climate concern and fertility intentions across a large group of OECD countries. Second, it distinguishes between short- and long-term climate concern and examines whether the time horizon of concern is related differently to fertility intentions. Third, it shows that these associations vary by parental status and economic capacity, suggesting that climate concern does not have the same implications for fertility decisions across different life-course and economic circumstances.

2. Literature Review

2.1. Fertility Decline, Uncertainty, and the Future

Mainstream fertility research has long explained declining fertility through the interaction of economic, institutional, and cultural factors. Economic approaches emphasize the costs of children, opportunity costs of parental time, labor-market insecurity, income instability, and housing constraints (Becker, 1991; Mulder & Billari, 2010). Sociological and demographic perspectives, including the Second Demographic Transition perspective, emphasize value change, individualization, delayed marriage, and the growing importance of self-realization (Lesthaeghe, 2010). Gender-equity theories, meanwhile, argue that fertility remains low when women's opportunities expand without corresponding changes in domestic gender relations and institutional support (Goldscheider et al., 2015; McDonald, 2000).

Most of these explanations focus on current conditions, such as income, employment, housing, gender roles, and partnership status. Recent studies of fertility and uncertainty, however, argue that reproductive decisions also depend on expectations and narratives about the future (Vignoli et al., 2020, 2022). Because childbearing involves a long-term commitment, decisions about having children necessarily involve assumptions about future economic, social, and personal conditions. When the future is perceived as unstable or threatening, fertility intentions may decline even in the absence of immediate material hardship. Building on this perspective, this study treats climate change as a source of future uncertainty that may enter reproductive decision-making.

2.2. From Physical Climate Effects to Climate Concerns

One strand of research examines physiological and seasonal pathways. Building on evidence that human conception varies seasonally with temperature (Lam & Miron, 1996), Barreca et al. (2018) find that periods of high temperature are followed eight to ten months later by declines in U.S. birth rates. Some of this decline is subsequently recovered, suggesting changes in the timing as well as the number of births. Related research has also linked temperature exposure around conception and pregnancy to adverse birth outcomes and later-life health (Wilde et al., 2017). These studies show that climatic conditions can affect reproduction through biological pathways even without changes in fertility intentions.

A second strand examines economic and agricultural pathways, particularly in lower-income and climate-exposed settings where livelihoods depend on rain-fed agriculture. In these contexts, droughts, erratic rainfall, and crop failures depress household income and food security, altering the perceived costs and feasibility of childbearing. Sellers and Gray (2019) find that climate shocks constrain fertility in Indonesia, and comparative evidence from sub-

Saharan Africa shows that climatic variability is associated with changing reproductive goals and intentions (Eissler et al., 2019). Reviewing this literature, Grace (2017) similarly argues that climate conditions affect fertility and reproductive health in poorer countries through nutrition, income instability, and material and child health.

A third strand examines fertility responses to disasters and mortality shocks. Natural disasters may initially reduce fertility through displacement, economic disruption, and psychological stress, but some studies also find subsequent increases in fertility. Following the 2004 Indian Ocean tsunami, Nobles et al. (2015) document higher fertility in communities that experienced greater mortality, reflecting both replacement of deceased children and new family formation. Changes in marriage and childbearing have also been observed after hurricanes in high-income settings (Cohan & Cole, 2002).

Together, these studies show that climate conditions can influence fertility through biological, economic, and disaster-related pathways. However, this literature addresses a somewhat different question from the one examined here. Many of these studies focus on settings where climate exposure is relatively severe, such as agrarian economies, disaster-affected areas, or periods of extreme heat. They also examine pathways that operate through physiology, income, health, or mortality rather than through individuals' own perceptions of climate change. In many high-income countries, climate change may influence fertility decisions partly through concern about future conditions even when individuals are not yet experiencing severe direct effects. This study therefore focuses on subjective climate concern and distinguishes between concern about the near and more distant future.

2.3. Eco-Reproductive Concerns and Climate Anxiety

Research on eco-reproductive concerns more directly examines how climate change enters decisions about having children. Schneider-Mayerson and Leong (2020) show that some individuals consider climate change when making reproductive decisions, including concerns that future children may suffer in a deteriorating environment. Recent systematic reviews similarly find that climate-related emotions and perceptions have become part of reproductive deliberation for some individuals (Dillarstone et al., 2023).

It is important, however, to distinguish related constructs. Climate concern refers to how worried individuals are about climate change; climate salience refers to how relevant climate change is perceived to be for a specific decision; and climate anxiety implies a more affective, potentially distressing response (Clayton, 2020; Hickman et al., 2021). Hickman et al.'s (2021) ten-country survey shows that young people's climate distress is tied not only to environmental risk but to perceived political inaction and pessimism about the future—an association directly relevant to reproduction, which requires confidence in the future. The present study measures climate concern rather than climate anxiety or the specific role of climate change in fertility decisions. The findings should therefore be interpreted in terms of general climate concern.

2.4. Climate Change Concerns and Fertility Intentions

A growing number of demographic studies have examined whether climate concern is associated with fertility intentions. Early evidence, for example, comes from Arnocky et al. (2012), who found that environmental concern was related to fertility intentions among Canadian university students. More recent studies have reported similar patterns across different national contexts. Bastianelli (2024), using data from Finland, Estonia, and Sweden, found that greater climate worry was associated with a stronger intention to remain childfree and with lower intended fertility. Similarly, Puglisi et al. (2025) found that Italians who regarded climate change as a major future problem intended to have fewer children. Evidence from experimental research points in the same direction: Bisi et al. (2024) showed that exposure to negative climate scenarios could reduce fertility desires. Taken together, these studies

suggest a broadly negative association between climate concern and fertility intentions, although the evidence remains concentrated in a limited number of countries and study populations.

Despite this growing evidence, several questions remain unresolved. First, most existing studies are based on a small number of national contexts, making it difficult to know whether similar associations appear across a broader range of high-income societies. Second, the relationship may differ by parental status, because deciding whether to enter parenthood is not the same as deciding whether to have another child. Third, the temporal dimension of climate concern has received little attention. Concern about climate change over the next one or two years may carry different implications for fertility decisions than concern about conditions several decades into the future. This distinction is theoretically relevant because people tend to represent near and distant risks differently. According to construal level theory, temporally proximate risks are understood in more concrete and situational terms, whereas distant risks are more likely to be interpreted in relation to broader goals, values, and identities (Trope & Liberman, 2010). Accordingly, short-term climate concern may be more closely connected to immediate issues such as safety, economic disruption, and caregiving demands, while long-term concern may be tied more strongly to expectations about the world in which future children would grow up. Distinguishing these temporal horizons therefore offers a way to clarify how climate concern may enter reproductive decision-making.

2.5. Parental Status and Temporal Horizons

How these temporal horizons matter is likely to depend on parental status. For childless individuals, fertility intentions concern whether to enter parenthood in the first place. This decision involves more than current economic resources or partnership conditions; it also requires some degree of confidence in the future into which a child would be born. In this respect, Giddens's (1991) notion of ontological security is relevant, as it refers to a basic sense of continuity and stability that allows individuals to make long-term life plans. Climate change may weaken this sense of security by increasing uncertainty about environmental conditions, social stability, and the long-term well-being of future generations. For childless individuals, therefore, long-term climate concern may be especially relevant because the decision to become a parent requires imagining conditions that extend well beyond the present.

For parents, by contrast, fertility intentions concern whether to have additional children while already managing existing caregiving responsibilities. This may make short-term climate concern more closely related to fertility decisions than long-term concern. Although parents may also worry about the distant future their children will face, the implications of such concern for additional childbearing are less clear. We therefore expect short-term climate concern to be more strongly associated with fertility intentions among parents

2.6. Economic Capacity and the Climate Concern–Fertility Relationship

The relationship between climate concern and fertility intentions may also vary according to economic resources. Economic capacity can shape how individuals respond to uncertainty because it affects their ability to absorb or adapt to anticipated risks. For example, individuals with greater financial resources may have more options to cope with climate-related disruption through safer housing, mobility, private adaptation, or greater financial security. From this perspective, a buffering account would predict that the negative association between climate concern and fertility intentions becomes weaker as economic capacity increases (Adger, 2006; Hallegatte et al., 2016; Sobotka et al., 2011). At the same time, an alternative expectation is also plausible. Higher-income and better-educated individuals are often more informed about climate change and may express greater concern about its consequences (Lee et al., 2015). If greater awareness makes climate risks more salient in reproductive decision-

making, economic advantage could instead strengthen the association between climate concern and fertility intentions.

Relative income within a country may be particularly relevant in this context because it captures not only purchasing power but also an individual's economic position relative to others facing the same national conditions. Previous research has shown that economic insecurity and perceptions of affordability are closely related to fertility decisions (Comolli, 2017; Kreyenfeld, 2010). On balance, we therefore expect economic capacity to buffer the negative association between climate concern and fertility intentions. This buffering effect may be especially apparent for long-term climate concern among childless individuals. For those who have not yet entered parenthood, concerns about the distant future may weigh more heavily on fertility plans when they are combined with limited economic resources and fewer options for responding to future risks..

2.7. Present Study

Building on the preceding discussion, this study examines three related questions: whether short- and long-term climate concern are associated with fertility intentions, whether these associations differ by parental status, and whether they vary according to economic capacity. We analyze parents and childless individuals separately because fertility intentions represent different decisions at these two stages of family formation. For parents, the relevant decision concerns additional childbearing within an existing family, whereas for childless individuals it concerns whether and how far to enter parenthood. We further distinguish short- from long-term climate concern because the temporal horizon of perceived risk may shape how climate change enters these decisions.

Hypothesis 1

(Climate concern and fertility intentions). Greater climate concern is associated with lower fertility intentions.

Hypothesis 2

(Temporal horizon by parental status). The association between climate concern and fertility intentions differs by parental status and temporal horizon. Among parents, short-term climate concern is expected to be more strongly associated with lower intentions for additional children, whereas among childless individuals, long-term climate concern is expected to be more strongly associated with lower fertility intentions.

Hypothesis 3

(Economic capacity as moderator). Economic capacity moderates the association between climate concern and fertility intentions, such that the negative association becomes weaker as economic capacity increases. This buffering effect is expected to be most apparent for long-term climate concern among childless individuals.

3. Data and methodology

3.1 Data

This study utilizes data from the 2024 OECD Risks that Matter (RTM) survey, collected from November to December 2024. The RTM survey is a biennial cross-sectional initiative to monitor socio-economic risk perceptions and social protection preferences. The 2024 wave encompasses 27 countries: Austria, Belgium, Canada, Chile, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Israel, Italy, South Korea, Lithuania, Mexico, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Switzerland, Turkey, and the United States. Targeting adults aged 18 to 64,

the total sample comprises 27,229 individuals, with each country providing at least 1,000 respondents(Thomas et al., 2025). This analysis specifically focuses on individuals of reproductive age (50 and under). The final analytical subsample consists of 12,938 individuals, including 6,159 childless individuals and 6,779 individuals with children. The data were analyzed using Stata 19.

3.2 Dependent variable

Our dependent variable is fertility intention, measured separately for two groups: individuals with and without children. First, for individuals with children, the intended number of additional children is calculated using two questions: (1) “Including the children you already have, how many total children do you intend to have?” (scale of 1–15) and (2) “How many children do you have?” To determine the number of intended additional children, we subtract the current number of children from the total intended family size reported in the first question. Second, for childless individuals, fertility intention is measured using the question: “How many children do you intend to have?” (scale of 0–15). This measure reflects the intended lifetime fertility of individuals who have not yet transitioned to parenthood.

3.3 Main explanatory variable

Our main independent variable assesses short- and long-term concerns about climate change. Short-term climate concern gauges concern over a near-term horizon, based on the question: “Thinking about the next year or two, how concerned are you about climate change?” Long-term climate concern encapsulates worries over a more extended period, measured by: “Looking beyond the next ten years, how concerned are you about climate change?” Both variables are measured on a four-point scale ranging from 1 (not at all concerned) to 4 (very concerned), with higher values indicating greater concern. Non-substantive responses, such as “Can’t choose,” are treated as missing.

To examine whether the effects of climate concern vary by economic capacity, we use country-specific income deciles based on equivalized disposable household income. For cross-national comparability, monthly income reported in Finland, Germany, and Latvia was annualized before respondents were ranked. Income was then recoded into three groups: 1 = 1st–3rd deciles, 2 = 4th–7th deciles, and 3 = 8th–10th deciles. Higher values therefore indicate a higher relative income position within each country.

3.4 Control variable

We include a set of individual-level controls that may influence fertility intentions. Demographic controls include gender, age, and partnership status. Gender is coded as a binary variable (male or female). Age is measured using four ordered categories: 18–24, 25–34, 35–44, and 45–50. Partnership status is classified into three groups: (1) single, (2) married or partnered, including registered and unregistered partnerships, and (3) separated, divorced, or widowed.

Socio-economic controls include education and employment status. Education is harmonized into three levels: low (no formal education to lower secondary), medium (upper secondary to post-secondary non-tertiary), and high (tertiary education). Employment status is categorized as employed, unemployed and seeking work, unemployed and not seeking work, or temporarily absent from work. For individuals with children, the model additionally controls for the number of current children and the number of children living in the household.

Additional controls for robustness checks. We consider four additional concerns that may influence fertility intentions: employment, housing, access to childcare and education, and access to healthcare. Respondents were asked how concerned they were about each issue over the next year or two. Each variable is measured on a four-

point scale ranging from 1 (not at all concerned) to 4 (very concerned), with higher values indicating greater concern. “Can’t choose” responses are treated as missing.

3.5 Methodology

This study employs a negative binomial regression model to account for the distributional characteristics of the dependent variable, fertility intention. As a discrete count variable, fertility intention exhibits a highly skewed, non-normal distribution across all groups. Among parents, additional fertility intentions are strongly right-skewed (M = 0.48, SD = 0.95; skewness = 5.03; kurtosis = 49.64). Among non-parents, fertility intentions are also right-skewed (M = 1.43, SD = 1.44; skewness = 2.28; kurtosis = 17.57). Such data are not well suited for linear regression models based on Ordinary Least Squares (OLS); instead, nonlinear models designed for count data are more appropriate. The most commonly used count models include the Poisson regression model and the negative binomial regression model. The Poisson model assumes that the mean and variance are equal(Poch & Mannering, 1996). However, when the variance exceeds the mean, overdispersion is likely to occur, leading to biased standard errors and reduced reliability of statistical inference(Yang & Berdine, 2015). To address this issue and correct for the underestimation of variance in the estimated coefficients, this study employs a negative binomial regression model.

A negative binomial regression model is employed to account for overdispersion in the count outcome variable(Poch & Mannering, 1996; Kenne et al., 2022; Suryadi et al., 2023). The model assumes that the dependent variable Y_i follows a negative binomial distribution with mean λ_iand dispersion parameter α. The probability mass function is given as follows:

$$\mathrm{P}(Y_i = y_i \mid \lambda_i, \alpha) = \frac{\Gamma(y_i+(1/\alpha))}{\Gamma(y_i+1)\Gamma(1/\alpha)}\left(\frac{1/\alpha}{1/\alpha+\lambda_i}\right)^{1/\alpha}\left(\frac{\lambda_i}{1/\alpha+\lambda_i}\right)^{y_i} \quad (1)$$

where λ_i represents the expected count of intended children and α is the dispersion parameter accounting for overdispersion and unobserved heterogeneity. The conditional mean of the outcome is modeled using a log-link function to ensure that the predicted count remains non-negative:

$$\log(\mu_i) = \beta_0 + \beta_1 (ST_i) + \beta_2 (LT_i) + \beta_3 (EC_i) + \beta_4 (ST_i \times EC_i) + \beta_5 (LT_i \times EC_i) + \gamma' X_i \quad (2)$$

where ST_i and LT_i denote short- and long-term climate concerns, respectively; EC_i represents economic capacity; and X_i is a vector of individual-level control variables. The interaction terms allow the associations between climate concerns and fertility intentions to vary according to economic capacity. Accordingly, the conditional associations of short- and long-term climate concerns with the expected log count are given by:

$$\frac{\partial \log(\mu_i)}{\partial ST_i} = \beta_1 + \beta_4 EC_i \quad (3)$$

$$\frac{\partial \log(\mu_i)}{\partial LT_i} = \beta_2 + \beta_5 EC_i \quad (4)$$

These expressions indicate that the associations of short- and long-term climate concerns with fertility intentions may vary depending on respondents' levels of economic capacity.

To assess the robustness of the findings, we estimate additional models that separately control for concerns about employment, housing, access to childcare and education, and access to healthcare. Each concern is added individually to the baseline model to examine whether the associations between climate concerns and fertility intentions remain robust after accounting for other sources of socio-economic insecurity.

4. Results

4.1 Descriptive statistics

As shown in Table 1, The descriptive results reveal clear differences in fertility intentions between individuals with and without children. Among Individuals with children, 66.90% intended to have no additional children, while 23.25% intended to have one more child. In contrast, childless individuals most commonly intended to have two children (35.91%), followed by no children (34.32%) and one child (14.09%).

Differences in climate concern were relatively modest. Individuals with children were slightly more likely to be very concerned about climate change in the short term (32.14% vs. 31.64%), whereas childless individuals expressed greater long-term concern (39.02% vs. 36.32%). Parents were also more concentrated in the lowest income group (39.81% vs. 36.86%), while childless individuals were more frequently represented in the highest income group (22.94% vs. 19.52%).

Table 1
Descriptive statistics

Variables		All individuals	Individuals with children	Childless Individuals
		n(%)	n(%)	n(%)
Intended number of children	0	6,649(51.39)	4,535(66.90)	2,114(34.32)
	1	2,444(18.89)	1,576(23.25)	868(14.09)
	2	2,731(21.11)	519(7.66)	2,212(35.91)
	3	768(5.94)	87(1.28)	681(11.06)
	4	180(1.39)	27(0.40)	153(2.48)
	5 or more	166(1.28)	35(0.52)	131(2.13)
Short-term climate concern (1–2 years)	Not at all concerned	1,464(11.32)	765(11.28)	699(11.35)
	Not so concerned	2,522(19.49)	1,311(19.34)	1,211(19.66)
	Somewhat concerned	4,824(37.29)	2,524(37.23)	2,300(37.34)
	Very concerned	4,128(31.91)	2,179(32.14)	1,949(31.64)
Long-term climate concern (10 years)	Not at all concerned	1,334(10.31)	704(10.39)	630(10.23)
	Not so concerned	2,231(17.24)	1,191(17.57)	1,040(16.89)
	Somewhat concerned	4,508(34.84)	2,422(35.73)	2,086(33.87)
	Very concerned	4,865(37.60)	2,462(36.32)	2,403(39.02)
Economic capacity (Income Decile)	1	4,969(38.41)	2,699(39.81)	2,270(36.86)
	2	5,233(40.45)	2,757(40.67)	2,476(40.20)
	3	2,736(21.15)	1,323(19.52)	1,413(22.94)
Gender	Male	5,971(46.15)	3,281(48.40)	2,690(43.68)
	Female	6,967(53.85)	3,498(51.60)	3,469(56.32)
Age	18–24	2,208(17.07)	397(5.86)	1,811(29.40)
	25–34	4,062(31.40)	1,914(28.23)	2,148(34.88)
	35–44	4,293(33.18)	2,956(43.61)	1,337(21.71)
	45–50	2,375(18.36)	1,512(22.30)	863(14.01)
Education	Low	1,043(8.06)	522(7.70)	521(8.46)
	Middle	5,305(41.00)	2,612(38.53)	2,693(43.72)
	High	6,590(50.94)	3,645(53.77)	2,945(47.82)
Employment status	Employed	10,290(79.53)	5,597(82.56)	4,693(76.20)

Variables		All individuals	Individuals with children	Childless Individuals
		n(%)	n(%)	n(%)
	Unemployed (seeking work)	1,002(7.74)	347(5.12)	655(10.63)
	Unemployed (not seeking work)	981(7.58)	416(6.14)	565(9.17)
	Temporarily absent	665(5.14)	419(6.18)	246(3.99)
Marital/partnership status	Single	3,629(28.05)	485(7.15)	3,144(51.05)
	Married/partnered	8,712(67.34)	5,904(87.09)	2,808(45.59)
	Separated/divorced/widowed	597(4.61)	390(5.75)	207(3.36)
Observations		12,938	6,779	6,159

4.2 Negative binomial regression analysis

Before presenting the results, the dispersion parameter was significantly different from zero across all models, indicating overdispersion and supporting the use of a negative binomial specification. Multicollinearity diagnostics based on VIFs showed no concerns, with all values below 3, confirming the adequacy of the model specification.

Regression results

Table 2 presents the regression results. In the full sample, short-term climate concern was significantly associated with lower fertility intentions (IRR = 0.944, 95% CI [0.908, 0.982]). A one-unit increase in short-term concern corresponded to a 5.6% decrease in the expected number of intended children. Long-term climate concern and economic capacity were not statistically significant.

In the analysis of individuals with children, short-term climate concern was negatively associated with additional fertility intentions (IRR = 0.895, 95% CI [0.826, 0.969]), corresponding to a 10.5% decrease in the expected number of additional children. Long-term climate concern was not statistically significant.

Among childless individuals, short-term climate concern was not significantly associated with fertility intentions. However, long-term climate concern showed a significant negative association (IRR = 0.958, 95% CI [0.918, 0.9998]), indicating an approximately 4.2% decrease in the expected number of intended children for each one-unit increase in concern. Overall, short-term climate concern was associated with additional fertility intentions among parents, whereas long-term climate concern was associated with fertility intentions among childless individuals.

Table 2
Result of negative binomial regression model

Variables		Model 1		Model 2		Model 3	
		All individuals		Individuals with children		Childless Individuals	
		IRR	95% CI	IRR.	95% CI	IRR	95% CI
Short-term climate concern		0.944**	0.908, 0.982	0.895**	0.826, 0.969	0.993	0.951, 1.036
Long-term climate concern		1.013	0.974, 1.053	1.080	0.9995, 1.166	0.958*	0.918, 0.9998
Economic capacity		1.024	0.989, 1.060	0.961	0.891, 1.037	0.978	0.943, 1.015
Gender		0.889***	0.843, 0.937	0.917	0.815, 1.031	0.854***	0.808, 0.902
Age		0.587***	0.569, 0.606	0.708***	0.661, 0.758	0.631***	0.610, 0.653
Education (ref. Low)	Medium	0.982	0.886, 1.090	0.895	0.736, 1.089	1.011	0.900, 1.135
	High	1.001	0.901, 1.113	0.874	0.717, 1.065	1.080	0.959, 1.215
Marital status (ref. M/P)	Single	1.254***	1.187, 1.325	0.791**	0.666, 0.939	0.918**	0.869, 0.971
	Sep./div./wid.	1.079	0.929, 1.254	0.980	0.740, 1.299	1.042	0.891, 1.219
Employment status (ref. Employed)	Seeking work	1.043	0.958, 1.136	0.942	0.734, 1.209	0.997	0.918, 1.084
	Not seeking work	0.969	0.882, 1.065	1.117	0.915, 1.364	0.927	0.840, 1.022
	Temporarily absent	1.025	0.922, 1.139	1.233**	1.067, 1.426	1.012	0.882, 1.163
Number of children				0.924	0.776, 1.102		
Number of co-resident children				0.771**	0.645, 0.921		
alpha		0.345	0.284, 0.420	0.804	0.619, 1.046	0.092	0.055, 0.155
*** p<.001, ** p<.01, * p<.05							

Interaction model

The interaction model results in Table 3 indicate that neither the main nor interaction effects were statistically significant for the full sample or individuals with children. Among childless individuals, the interaction between long-term climate concern and economic capacity was positive and statistically significant (IRR = 1.054, 95% CI [1.0003,

1.111]), indicating that the association between long-term climate concern and fertility intentions became less negative as economic capacity increased. No significant interaction was found for short-term climate concern. Overall, a significant moderating effect of economic capacity on the association between long-term climate concern and fertility intentions was observed only among childless individuals.

Table 3
Result of interaction model

Variables		Model 1		Model 2		Model 3	
		All individuals		Individuals with children		Childless Individuals	
		IRR	95% CI	IRR.	95% CI	IRR	95% CI
Short-term climate concern		0.936	0.842, 1.040	0.835	0.670, 1.042	0.959	0.857, 1.073
Long-term climate concern		0.920	0.829, 1.021	1.010	0.828, 1.232	0.860**	0.767, 0.963
Economic capacity		1.024	0.989, 1.060	0.962	0.892, 1.038	0.979	0.944, 1.015
Short-term climate concern*Economic capacity		1.005	0.957, 1.056	1.036	0.935, 1.149	1.017	0.967, 1.071
Long-term climate concern* Economic capacity		1.048	0.999, 1.100	1.034	0.941, 1.137	1.054*	1.0003, 1.111
Gender		0.888***	0.843, 0.936	0.920	0.819, 1.033	0.852***	0.806, 0.900
Age		0.588***	0.570, 0.607	0.711***	0.664, 0.762	0.631***	0.610, 0.652
Education (ref. Low)	Medium	0.985	0.889, 1.093	0.900	0.739, 1.096	1.014	0.903, 1.139
	High	1.003	0.903, 1.115	0.878	0.720, 1.071	1.082	0.962, 1.218
Marital status (ref. M/P)	Single	1.256***	1.190, 1.327	0.793**	0.668, 0.941	0.918**	0.869, 0.970
	Sep./div./wid.	1.079	0.929, 1.254	0.981	0.740, 1.300	1.043	0.893, 1.220
Employment status (ref. Employed)	Seeking work	1.046	0.960, 1.138	0.944	0.737, 1.210	1.0002	0.920, 1.087
	Not seeking work	0.968	0.881, 1.064	1.115	0.914, 1.360	0.926	0.839, 1.021
	Temporarily absent	1.025	0.922, 1.139	1.231**	1.065, 1.423	1.016	0.885, 1.166
Number of children				0.923	0.776, 1.098		
Number of co-resident children				0.769**	0.645, 0.917		
alpha		0.342	0.282, 0.416	0.800	0.615, 1.039	0.089	0.052, 0.150
*** p<.001, ** p<.01, * p<.05							

The Moderating Effect of Long-term Climate Concern

Figure 1 illustrates how economic capacity moderates the association between long-term climate concern and fertility intentions among childless individuals. Fertility intentions decline markedly as long-term climate concern increases among those with low economic capacity and decline more moderately among those with medium economic capacity. In contrast, fertility intentions remain relatively stable among those with high economic capacity. Consequently, differences across economic-capacity groups narrow and eventually reverse as long-term climate concern increases. This pattern indicates that greater economic capacity attenuates the negative association between long-term climate concern and fertility intentions among childless individuals.

To formally assess whether these associations differed by parental status, we estimated a pooled model using covariates common to both groups and included interactions between parental status and the two climate concern measures. Formal Wald tests showed that the coefficients differed significantly between parents and childless individuals for both short-term climate concern, $F(1, 27{,}228) = 5.82$, $p = .016$, and long-term climate concern, $F(1, 27{,}228) = 8.03$, $p = .005$. The two interaction terms were also jointly significant, $F(2, 27{,}227) = 4.23$, $p = .015$.

Table 4
Robustness: Additional concern controls

		Baseline	Employment concerns	Housing concerns	Childcare and education concerns	Healthcare access Concerns
All individuals	**Short-term**	**0.943****	**0.945****	**0.942****	**0.934****	**0.947****
	Long-term	**1.013**	**1.011**	**1.004**	**1.009**	**1.012**
Individuals with children	Short-term	0.895**	0.896**	0.898**	0.895**	0.894**
	Long-term	1.080	1.077	1.066	1.062	1.077
Childless Individuals	Short-term	0.993	0.993	0.990	0.969	0.994
	Long-term	0.957*	0.950*	0.947*	0.951*	0.955*

**** p<.001, ** p<.01, * p<.05*

Table 4 shows that the main results remained unchanged after separately controlling for employment, housing, childcare and education, and healthcare access concerns. Short-term climate concern remained significant in the full and Individuals with children samples, while long-term climate concern remained significant only among childless individuals.

5. Discussion and conclusion

5.1 Summary of key findings

This study examined how climate concern is associated with fertility intentions across 27 OECD countries and whether these associations vary by parental status, temporal horizon, and economic capacity. Three main findings emerged. First, short-term climate concern was associated with lower fertility intentions, and this association was concentrated among parents. Among parents, a one-category increase in short-term climate concern was associated with an approximately 10.5% decrease in the expected number of additional intended children. Second, among childless individuals, long-term rather than short-term climate concern was associated with lower fertility

intentions. Third, economic capacity moderated this long-term association among childless individuals: the negative association became weaker as economic capacity increased. Taken together, these findings suggest that the relationship between climate concern and fertility intentions differs according to both the temporal horizon of concern and individuals' family and economic circumstances.

5.2 Short-term concern and additional childbearing among parents

Among parents, short-term climate concern was associated with lower intentions for additional children, whereas long-term concern was not statistically significant. This pattern is consistent with our expectation that parents may respond more strongly to climate concerns that are closer to their current family circumstances. Because parents are already responsible for raising children, concerns about the next one or two years may be more directly connected to their assessment of household stability and their capacity to have another child. This interpretation is broadly consistent with construal level theory, which suggests that temporally proximate risks are represented in more concrete terms (Trope & Liberman, 2010), and with research emphasizing the role of future expectations in fertility planning (Vignoli et al., 2020, 2022). At the same time, these mechanisms are not directly measured in the present study and should therefore be treated as possible explanations rather than confirmed pathways. Long-term climate concern showed a positive but statistically non-significant coefficient among parents, and we do not interpret this pattern substantively.

5.3 Distant-horizon concern and the transition to parenthood among childless individuals

Among childless individuals, the pattern was different. Long-term climate concern was negatively associated with fertility intentions, whereas short-term concern was not. This finding is consistent with the idea that people who have not yet entered parenthood may place greater weight on expectations about the more distant future when considering whether to have children. In this respect, Giddens's (1991) concept of ontological security provides a useful interpretation: decisions involving long-term commitments may depend partly on a basic sense that future conditions will remain sufficiently stable. Climate change may weaken this sense of security by increasing concern about the conditions in which future children would live. This interpretation is also consistent with the literature on eco-reproductive concerns, which shows that some individuals consider the future well-being of potential children when making reproductive decisions (Schneider-Mayerson & Leong, 2020; Dillarstone et al., 2023). The finding therefore adds to previous evidence on climate concern and childbearing intentions by suggesting that the temporal horizon of concern may matter, particularly among those who have not yet become parents.

5.4 Economic capacity as a moderator

Economic capacity moderated the association between long-term climate concern and fertility intentions among childless individuals. As shown in Fig. 1, the negative association was stronger among those with lower economic capacity and weaker among those with higher economic capacity. This pattern is consistent with the buffering expectation proposed in Section 2.6: greater economic resources may reduce the extent to which climate-related uncertainty affects fertility plans by providing more options to respond to future risks (Adger, 2006; Hallegatte et al., 2016; Sobotka et al., 2011). At the same time, this result should be interpreted cautiously. The interaction effect was modest and only narrowly statistically significant, and the present data do not identify the specific mechanisms through which economic resources may operate. Rather than establishing a clear buffering mechanism, the finding suggests that economic position may be one condition shaping how long-term climate concern is related to fertility intentions among childless individuals.

5.5 Alternative Explanations, Causal Direction, and Cross-National Variation

These findings should also be considered alongside studies reporting weaker or null associations between environmental concern and fertility outcomes. Using longitudinal data, Peters et al. (2025), for example, find no robust association between environmental concern and the transition to parenthood or completed fertility and suggest that unobserved heterogeneity and reverse causation may partly explain observed relationships. This possibility is relevant to the present study because our cross-sectional data cannot establish whether climate concern lowers fertility intentions or whether fertility and parental experiences shape climate concern. In addition, fertility intentions do not necessarily translate directly into behavior, and the intention–behavior gap may itself vary across individuals and contexts (Guzzo & Hayford, 2023). The cross-national design also means that the estimated associations represent an average across countries that differ considerably in climate exposure, social protection, family policy, and climate governance. Future research should therefore examine whether these national contexts strengthen or weaken the relationship between climate concern and fertility intentions.

5.6 Limitations

Several limitations should be considered. First, the cross-sectional design does not allow causal inference and cannot rule out reverse causation or unobserved confounding. Second, short- and long-term climate concerns are each measured with a single survey item. These measures capture general concern but do not distinguish more specific emotional responses such as climate anxiety (Clayton, 2020; Hickman et al., 2021). Third, fertility intentions are measured differently for parents and childless individuals: intended additional children for parents and intended total children for the childless. For this reason, the subgroup analyses should be treated as the primary results, while comparisons based on the pooled model should be interpreted cautiously. Fourth, economic capacity is measured using three broad categories of relative income within each country. This measure provides cross-national comparability but cannot capture finer differences in household economic security or assets. Finally, although the study covers 27 OECD countries, it does not directly model country-level differences in climate exposure, family policy, social protection, or climate governance. Future studies using multilevel or longitudinal designs could examine how these contextual factors shape the relationship between climate concern and fertility decisions.

5.7 Conclusion

This study provides cross-national evidence that climate concern is associated with fertility intentions differently across parental status and temporal horizons. Among parents, short-term climate concern was associated with lower intentions for additional children, whereas among childless individuals, long-term climate concern was associated with lower intended fertility. The association between long-term concern and fertility intentions among childless individuals also became weaker as economic capacity increased. These findings suggest that climate concern should not be treated as a single or uniform influence on reproductive decision-making. Rather, its association with fertility intentions appears to depend on when climate risks are expected to occur, whether individuals are already parents, and the economic resources available to them. From a policy perspective, the findings suggest that reducing the material costs of childrearing may not fully address fertility concerns if individuals also lack confidence in future social and environmental conditions. Further longitudinal and cross-national research is needed to determine whether these associations reflect causal processes and how they change as climate risks become more visible.

Declarations

Author Contribution

A.S. developed the theoretical framework and led the writing of the theoretical sections. N.K. led the statistical analysis and the writing of the methods and results sections. Both authors contributed to the literature review, study design, selection and operationalization of variables, interpretation of the findings, and revision of the manuscript. Both authors approved the final manuscript.

Data Availability

The data used in this study are from the 2024 OECD Risks that Matter Survey. The data and related documentation are available from the OECD subject to its data access and use conditions.

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Figures

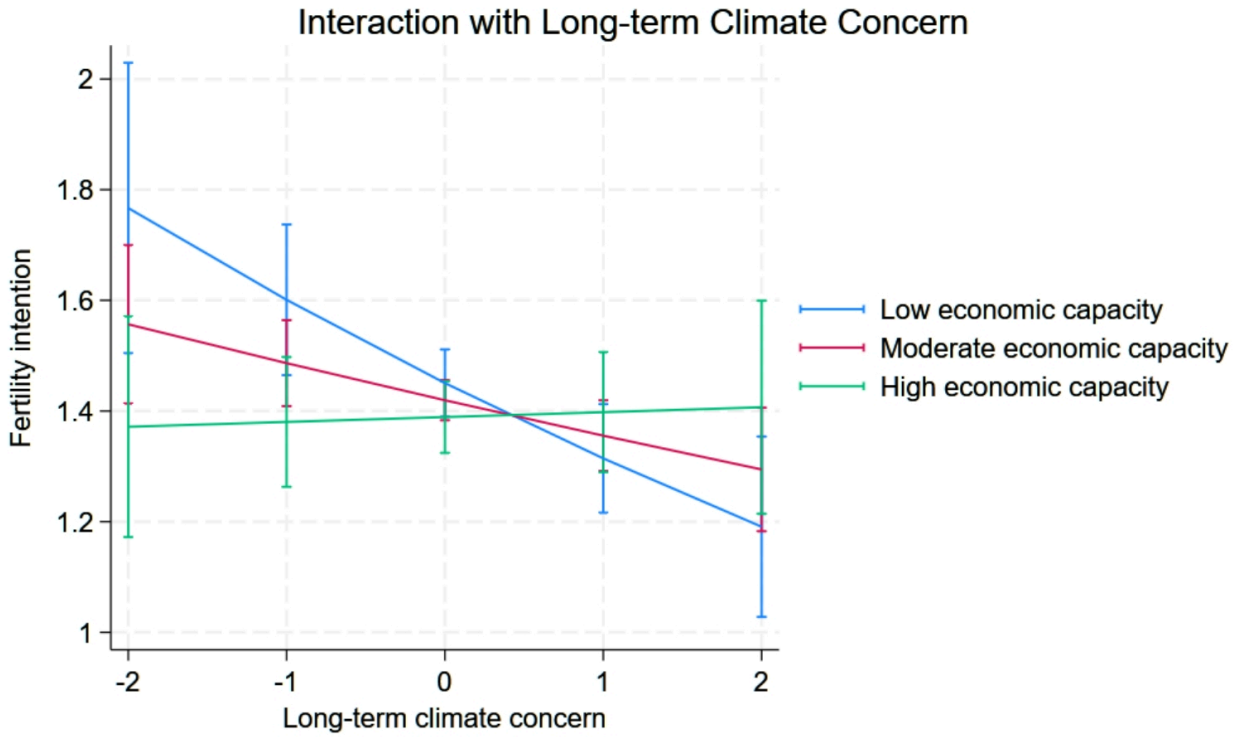


Figure 1

Interaction between Long-Term Climate Concern and Economic Capacity among Childless Individuals