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The Rise of Zero Fertility Desire in China

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Abstract

Rising childlessness across low-fertility societies has commonly been interpreted as the result of unrealized fertility intentions rather than the rejection of parenthood itself. However, the emergence of zero fertility desire raises the possibility that declining fertility desire may play an increasingly important role alongside unmet fertility in shaping contemporary fertility outcomes. Using China as an empirical case, this paper examines zero fertility desire among individuals aged 18–24. Drawing on six waves of the China General Social Survey (2012–2023), the share reporting no desire for children increased from approximately 5% in 2012 to 32% in 2023, accompanied by a pronounced gender gap: by 2023, nearly half of young women reported zero fertility desire. Logistic regression results show gender to be the most consistent predictor, more so than education and hukou status. Among young women, urban–rural differences are not statistically significant, while college-educated women exhibit higher odds of reporting zero fertility desire than their non-college educated peers. These findings suggest that declining fertility desire may increasingly contribute to rising childlessness and highlight potential limits of pronatalist policies that primarily target constraints on fertility intentions.

Introduction

Childlessness has risen steadily across many high-income societies in Western Europe (Bloom and Pebley 1982; Kreyenfeld 2017) and East Asia (Abe 2022; Sobotka 2021), contributing to persistently low fertility. Most research attends to this trend from the perspective of delayed or unrealized childbearing (Abe 2022; Bernardi, Ryser, and Le Goff 2013; Berrington 2017) in the face of economic, institutional, and normative constraints. Yet an open question remains whether rising childlessness reflects constrained realization of fertility intentions, or a more fundamental shift away from childbearing as a desired life goal. China may represent a distinct trajectory. Recent evidence documents an unprecedented rise in zero fertility desire among college educated young adults (Blair and Madigan 2020; Xu et al. 2023; Zhang et al. 2022). Identifying the mechanisms underlying this shift is essential for explaining contemporary fertility decline and evaluating the limits of policy intervention.

Existing studies largely emphasize a growing mismatch between enduring fertility ideals and changing social conditions. In Europe, women's work–family compatibility and satisfaction with domestic labor arrangements are closely linked to intentions to have children, producing substantial "unmet need for children."(Bernardi et al. 2013) In the United States, fertility desire remains relatively stable with only modest decline (Hartnett and Gemmill 2020), but individuals increasingly express uncertainty about whether and when they will realize their intentions(Badolato, Hayford, and Guzzo 2025). Research on East Asia similarly documents a long-standing norm of near-universal fertility desire, while highlighting how rapid socioeconomic change and persistent family norms have constrained fertility realization (Raymo et al. 2015). Taken together, this literature generally attributes low fertility and rising childlessness to structural barriers rather than to declining fertility desire itself.

In China, where underachieved fertility intentions have been similarly documented for decades (Raymo et al. 2015), it remains unclear whether this framework still applies. Evidence from recent cohorts of college-educated young adults indicates that 20–30% report no desire for children (Blair and Madigan 2020; Xu et al. 2023; Zhang et al. 2022), marking a departure from the near-universal fertility desire observed in East Asia through the early 2010s. If such attitudes are diffusing beyond elite groups, they raise important questions about the effectiveness of pronatalist policies[1] and policy recommendations (Huang et al. 2019) that focus primarily on reducing economic barriers. Examining fertility desire in China therefore provides insight into whether contemporary low fertility reflects constrained choices or an emerging reorientation of fertility culture, with implications for population policy in China and other low-fertility societies.

In this project, I examine zero fertility desire using nationally representative data from five waves of the China General Social Survey (CGSS) to better understand this zero fertility desire trend beyond college students. Descriptive statistics from the 2012–2023 CGSS reveal a striking change: the share of young adults aged 18-24 reporting no desire for children tripled during the 2010s, rising from roughly 5% to 15%, and doubled again to 32% immediately post Covid in 2023. This pattern comes with a pronounced gender gap emerging over time. By 2021, young women were more than twice as likely as young men to report zero fertility desire. By 2023, the share of young women reporting no desire for children had risen to 47%. Regression analyses further show that gender is the most consistent predictor of zero fertility desire—more so than education or Hukou status—and that, given the limited sample to date, college educated women have substantially higher odds of expressing zero fertility desire than non-college educated women, while urban and rural women do not differ significantly. These findings offer new evidence of shifting fertility ideals in China and raise important questions about the sustainability of future fertility levels despite expanding pronatalist policy efforts.

Childlessness Worldwide

Childlessness has risen across much of the world in recent decades and research on childlessness distinguishes between realized childlessness and stated fertility desire. Across Europe, North America and East Asia, through the mid-2010s, realized childlessness rose without comparable declines in stated fertility desire. Consequently, dominant explanations frame low fertility as the gap between stated fertility desires and realized childbearing.

Realized Childlessness

Research has documented increases in permanent childlessness in Europe and East Asia. In Europe, German-speaking countries have consistently exhibited the highest levels, with more than 20% of women remaining childless by the end of their reproductive years (Kreyenfeld 2017). Although historically low in Eastern and Southern Europe, levels have risen rapidly in recent years (Kreyenfeld 2017). A similar pattern appears in East Asia, where the most advanced economies exhibit the highest level of childlessness: in Japan, Hong Kong, and Singapore, nearly 30% of women born in the 1970s remained

childless by 2020 (Sobotka 2021). South Korea and Taiwan follow the same trend at lower levels, reaching approximately 17% and 23% respectively among women born in the late 1970s (Sobotka 2021).

Stated Fertility Desire

Despite rising levels of realized childlessness across many regions, stated fertility desire remains largely stable or exhibits only modest decline. In Europe, the ideal family size has been shrinking because fewer couples desire three or more children, but the majority of men and women still want children and most desire two children (The ESHRE Capri Workshop Group 2010). In the United States, although a small share of adults– primarily younger cohorts of hispanic background - intend to stay childless, most women intend to have two children (Hartnett and Gemmill 2020). Similarly in East Asia, the stated fertility desire has been nearly universal, with the majority preferred for two children (Atoh 2001; Retherford and Ogawa 2006; Yang and Rosenblatt 2008; Zheng 2004). Teenagers in the United States also retain interest in family formation and childrearing following the financial Crisis (Sevareid et al. 2023). Furthermore, closer examination of different dimensions of stated desire shows that most people still want children but expressed lower confidence and commitment to realizing their fertility goals (Badolato et al. 2025).

Gap: Realized Childlessness and Stated Fertility Desire

Prevailing explanations attribute rising childlessness to the gap between stated fertility desires and realized fertility, particularly in later life course stages after labor force entry and partnership formation. Within this framework, scholars emphasize structural, familial, and attitudinal factors that shape childbearing outcomes (Bernardi et al. 2013). Educational attainment, labor market opportunities, partnership histories, and work–family reconciliation policies help explain why individuals who intend to have children ultimately remain childless. This explanation is echoed in East Asia, where rapid economic expansion preceded the rise of childlessness, Scholarship across the region consistently highlights that the gap between stated and realized fertility is driven less by a decline in fertility ideals and more by the growing mismatch between accelerating socio-economic demands and slow-changing family and gender norms (Raymo et al. 2015).

The Rise of Zero Fertility Desire in China

In China, despite a longstanding two-child family ideal and the persistent gap between stated desire and realized fertility, recent years have seen a sharp rise in zero fertility desire, with implications for China's population trajectory and for emerging pockets of stated desire for childlessness in other countries.

Existing studies overwhelmingly attribute declining fertility to the gap between stated and realized fertility goals resulting from economic and structural pressures—such as the high and rising costs of childrearing, intensifying labor market competition, and uncertainty surrounding career advancement (Zhou and Wei 2019; Zhu and Hong 2022; Fang et al. 2013). Others emphasize demographic legacies of the One-Child Policy, including gender imbalance and altered marriage markets, which may further

constrain family formation (Eklund 2013; Jiang, Feldman, and Li 2014; Qian 2012). Taken together, this literature underscores that fertility desire in China has remained nearly universal until very recently, and persistent low fertility reflects challenges to realizing these desires rather than a widespread rejection of parenthood itself.

Emerging but still under-examined is the early-stage attitudinal shift that may be foundational to both rising childlessness and broader transformations in fertility culture. Several surveys on college students reveal striking increases in the share of young adults reporting zero fertility desire: recent estimates range from 20% to 30% (Blair and Madigan 2020; Zhang et al. 2022; Xu et al. 2023), compared with only about 7% just a few years earlier (Blair and Madigan 2020). Across studies, young women consistently exhibit higher levels of singlehood and no-child preference than young men.

This emerging pattern can represent a meaningful cultural break from the past. In a society shaped by Confucian family norms—where childbearing is historically tied to social adulthood and intergenerational obligation—choosing to remain childless is qualitatively different from a smaller family size. While the latter often reflects practical constraints, the former entails direct challenges against entrenched social expectations and familial traditions. Although college students are not representative of China's broader population, the observed shift suggests a potentially important reorientation in fertility culture. Whereas previous generations tended to treat parenthood as the default option—questioned only under extreme adverse circumstances—a substantial share of today's young adults appear to treat childlessness as a legitimate or even preferred default, requiring persuasion or substantial incentives to consider parenthood at all. If this attitudinal transformation continues, it could have profound implications for China's future fertility trajectory.

Factors Shaping Fertility Desire in China

Taken together, these developments point to the need to examine how zero fertility desire is distributed across social groups. Studies across Europe, East Asia, and North America show that socioeconomic position and social identity—such as education, income, gender, and institutional classifications like hukou—structure both fertility preferences and the perceived feasibility of parenthood. In this section, I review existing evidence on the ways education, hukou (China's household registration system that structures the urban–rural divide), and gender are associated with fertility intentions and outcomes, and use these insights to develop the hypotheses guiding this study. I also briefly review the literature on income as a determinant of fertility intentions, but I do not develop a corresponding hypothesis because of measurement limitations in the CGSS income variable, noting that the proxies used in the analysis are discussed in detail in the Methods section.

Education

The relationship between education and fertility is relatively consistent across countries. Higher levels of education are generally associated with fewer children for both men and women (Weeden et al. 2006), though this effect is particularly pronounced among women, regardless of a country's developmental

stage. In developing countries, women with more than seven years of education have, on average, only half as many children over their lifetime as women with no education(Weinberger 1987). It is primarily this gap between educated and uneducated women, rather than variation within intermediate education levels, that drives the overall association between education and fertility (Jain 1981). Similar patterns are observed in developed countries, albeit to a lesser extent (Meisenberg 2008).

China, as a developing country, largely follows the global pattern linking higher education with lower fertility (Chen and Guo 2022; Lavely and Freedman 1990; Piotrowski and Tong 2016), despite some seemingly conflicting findings. For instance, a study examining the 1998 expansion of higher education found that each additional year of college increased fertility by 0.14 children, raising the likelihood of having two children while reducing the likelihood of having none (Chen 2022). This effect may have applied specifically to the cohorts under study—the late 1970s cohort as the control group and the early 1980s cohort as the treatment group—both characterized by near-universal fertility (Raymo et al. 2015). Differences between the cohorts were primarily driven by higher incomes from college degrees (Hu and Bollinger 2021; Huang et al. 2022; Xu and Xu 2025) and rapid economic growth following China's entry into the WTO in 2001. In other words, the positive association between college education and fertility may have been a short-lived phenomenon affecting select Gen Y and Older Millennial cohorts during a period of economic prosperity. Neither factor applies today: college degrees now show diminishing returns (Xu and Xu 2025:20), and the Chinese economy faces sluggish growth post-pandemic, compounded by an ongoing real estate downturn (Rogoff and Yang 2024).

Hypothesis 1: Young adults with a college education are more likely to express zero fertility desire than those without a college education.

Hukou

Hukou, China's household registration system, represents a factor more unique to China than income or education. By reinforcing and exacerbating the rural-urban divide (Chan, Liu, and Yang 1999; Mallee 2003; Qian, Cheng, and Qian 2020; Wang and Schwartz 2018), Hukou delimits access to social benefits and shapes policy enforcement, such as the number of children permitted during the One-Child Policy era. These structural and socio-cultural differences along the rural-urban line are likely to contribute to a pronounced divide in fertility desire.In terms of social benefits, both medical and educational resources are more limited and less well-funded in rural areas (Lu 2012; Song et al. 2019; Ye and Lu 2011). Working-age adults who lose their jobs are often excluded from employment statistics and receive no unemployment insurance (Chan et al. 1999), as they are assumed to return home and rely on farming. Seniors in rural areas similarly receive minimal pensions from social security programs (Shi 2006). Culturally, rural communities tend to have close-knit social networks that strongly enforce patriarchal norms (Davin 1990; Lei 2023; Yan 2006), and families lacking a male head or male offspring may face social stigma.

These traits may also be common in rural areas elsewhere, but the Hukou system limits mobility (Chan and Zhang 1999; Mallee 2003). Building on top of the Hukou system is the bifurcated enforcement of the

One Child Policy. Urban areas often experience stricter enforcement, while rural areas have more flexible rules, allowing a second child if the first born was a female(Davin 1990; Fong 2002). In some ways this Hukou contingent policy enforcement echoed and conformed to the local norm of sons (Lei 2023; Yan 2006) being essential to a household. Women from rural areas have historically had higher fertility rates compared to their urban counterparts, both before and after the One Child policy (Chan and Zhang 1999; Davin 1990; Wang and Schwartz 2018). Furthermore, rural women who migrated to urban areas still tend to have higher fertility rates than women living in urban areas holding an urban Hukou (Liang and Gibson 2017). The rural convention of having more children could be in contest with the evolving gender identities of women in China.

Hypothesis 2: young adults with an urban Hukou are more likely to express zero fertility desire compared to young adults with a rural Hukou.

Gender

Gender as a factor has been briefly discussed in the education section, but it has a more entrenched influence on both fertility outcomes and intentions beyond education. In China, a female college student might be more open to the idea of not having children than a male student with similar backgrounds, due to their observations and experiences from both their families and society. Girls might experience gendered treatment at home and school(Hannum, Kong, and Zhang 2009; Hu 2018; Liu 2006; Shek et al. 2019) and observe how their mothers and female relatives are treated by their fathers and other male family members. Even urban girls raised as the only child in their families might get discouraged for having ambitions(Liu 2006; Shek et al. 2019). This is even more pronounced for rural girls with brothers who need financial support(Hannum et al. 2009). They might observe older cousins, successful professionally but single in late 20s or early 30s, being lambasted as a 'leftover,'(Fincher and French 2023) despite their accomplishments. They might also observe their mothers or older ladies enduring domestic violence (Liu, Li, and Feldman 2013; Michelson 2019), staying in marriage despite the suffering. Then, past experiences could evolve into a realization, especially when exposed to popular authors such as Chizuko Ueno, what they thought was normal turns out not that normal. Domestic violence is still largely ignored by police and divorce courts(He 2021; Michelson 2019). Young women could still be defined by and judged harshly by their roles as wives and mothers. Furthermore, as they hear more about their future, their views on fertility may shift. Being women puts them at a disadvantage at work and at home. Married women without children face substantial discrimination in the hiring processes(He, Li, and Han 2023; Zhang et al. 2021). At home, even for couples with similar education and earnings, women tend to bear a greater share of household responsibilities(Cao and Qian 2024). All these conceptions could suggest a gendered perspective on fertility. Therefore, I hypothesized that

Hypothesis 3: Young women are more likely to express zero fertility than young men.

Given the possible interaction between Gender and Hukou or education, the relationship with fertility desire becomes more complex and warrants careful examination. Within the scope of this study, I focus on two scenarios, assuming that 'eliteness' may still play a role in shaping women's fertility desire.

Hypothesis 4: Zero fertility desire is more likely to be expressed among young urban women than young rural women

Hypothesis 5: Zero fertility desire is more likely to be expressed among college-educated young women than non-college educated young women

Income

Income is widely recognized as an important factor in shaping fertility, with developed countries typically showing a negative or null association (Simon 1969; Weeden et al. 2006) and developing countries generally showing a positive relationship, where higher-income households have more children on average (Mulder 1998). The Chinese case is complicated by the One Child Policy: wealthier urban areas were restricted to one child, while poorer rural areas could have two, producing patterns that sometimes diverge from the typical income-fertility relationship (Birdsall and Jamison 1983; Fong 2002; Lavely and Freedman 1990). Post-policy studies suggest high-income households may have higher fertility desire and intention, though medium-income households sometimes report lower intentions, likely due to perceived costs of children (Zhu and Hong 2022). In this study, however, analyzing income effects is particularly challenging: zero fertility desire focuses on young adults, many of whom do not yet have their own jobs. As such, subjective income is included as a control in the methodology section and interpretation and generalization should be made with caution.

[1] Such as the new compensation for new borns that round to about $1500 per new born. https://www.bbc.com/news/articles/c776xgex02jo

Method and Data

This project uses six waves of the nationally representative China General Social Survey (CGSS) from 2012 to 2023. Although the CGSS was originally designed for longitudinal tracking, the samples are effectively cross-sectional due to participant attrition and rapid population changes. These waves—2012, 2015, 2017, 2018, 2021, and 2023—were selected to capture both the tail end of near-universal fertility desire (Raymo et al., 2015) and the rise of zero fertility desire in the late 2010s and early 2020s.

The main variable of interest is zero fertility desire, defined as reporting no desire for children in an ideal situation. This measure captures early-stage fertility orientation among young adults aged 18–24, prior to most entering partnerships, marriage, or the workforce. At this stage, childbearing remains largely theoretical, making responses closer to pure desire than intention. Compared to older adults, this age group provides a clearer window into emerging cultural attitudes. While the measure cannot fully disentangle cultural from economic or structural influences, it nonetheless reflects a substantial portion of cultural sentiment, particularly given how radical remaining childless remains in a traditionally Confucian society.

First, I examined the share of young adults reporting zero fertility desire from 2012 to 2023, as well as their social profiles by Hukou status and education. Zero fertility desire is measured using the CGSS question, “Without policy restrictions, how many children do you want?” Specifically, it is captured as the percentage of respondents aged 18–24 who report wanting no children.

Next, I employed three logistic regression models to test the hypotheses. The base model examines the associations of education, Hukou, and gender with zero fertility desire. Two additional models test interaction effects: gender × Hukou and gender × education. Logistic regression is appropriate because the dependent variable is binary (1 = zero fertility desire, 0 = otherwise). All three models share this same dependent variable, with independent variables specified model by model.

The base model includes three key independent variables: education, Hukou, and gender.

Education is measured as an indicator for college-level attainment. Respondents reporting any post-secondary education—vocational college (full-time or continued education), college (full-time or continued education), or graduate study—are coded as 1; all others are coded 0.

Hukou status distinguishes rural from urban registration. Participants with rural or resident (former rural) are coded as 1, while urban or urban (former urban) Hukou are coded as 0.

Gender is coded as a binary variable, with men as 1 and women as 0.

Income is one of three groups of controls in the base model. I use subjective income, combined with economic regions (East, Northeast, Middle, West), as proxies for household resources. The eastern region serves as the reference category, with the other three included as dummy variables Personal or family income is not used in this project because both were inconsistently reported in the CGSS, with missing values ranging from 30% to nearly 60% in different years and the presence of significant differences between respondents with and without income data (χ^2 test, $p < 0.05$).

To better interpret the effect of college education, the base model also controls for student status and parental education. Student status is included because being a student at ages 18–24 may shield participants from broader social and economic experiences, which does not fully overlap with having a college degree. Some peers may have already entered the workforce, while others remain in high school, creating variation in exposure to adult responsibilities. Parental education captures familial background, as having at least one college-educated parent reflects greater social, cultural, and economic capital.

Health and family structure are included as additional controls, given their potential influence on fertility attitudes. Self-rated health, measured on a 5-point scale, is included because poor health has been cited as a reason for childlessness in prior studies (Gillespie 1999; Dorbritz 2008). Family structure variables account for siblings and brothers, reflecting participants’ experiences under the One-Child Policy, where some families still had multiple children, often to secure a son. Early partnership status is also controlled, as discussions about children with a partner may differ from abstract considerations. Finally, having a mother who worked full-time at home is included, capturing exposure to domestic gender roles,

which may influence attitudes toward childbearing. Table 1 summarizes all variables and their corresponding CGSS questions.

Besides the base model, I estimated two additional logistic regression models to test the last two hypotheses, incorporating interaction terms to examine gender × education and gender × Hukou effects on zero fertility desire. These models retain the same dependent variable and controls as the base model but differ in their main independent variables. In the gender × education model, gender and education are replaced by the interaction term, while rural Hukou remains unchanged. In the gender × Hukou model, gender and Hukou are replaced by the interaction term, while education remains unchanged. In these interaction models, data from all six waves of surveys were pooled for the regression analyses due to small sample issues relating to interaction terms.

RESULTS

The share of young adults desiring no children roughly tripled from 2012 to 2021 and doubled again from 2021 to 2023, with a pronounced gender divide. Among 18- to 24-year-olds, the percentage rose from 5.17% in 2012 to 8.65% in 2018, 15.06% in 2021 and 32.22% in 2023 (Figure 1). Two points merit emphasis. First, zero fertility desire did not emerge as a noticeable phenomenon until around 2018; prior to that, rates hovered at or below 5%, reflecting near-universal fertility desire. Thus, the six survey waves can be grouped into two periods: 2012–2015, when universal fertility desire persisted, and 2018–2023, when a clear rupture occurred. Second, the trend shows a strong gendered pattern. In 2012, men and women had similar rates of zero fertility desire, but by 2018 the gap widened, reaching 12 percentage points in 2021. Among young women, the rate rose to 21.72% in 2021—more than twice that of young men and then peaked at 46.84% in merely two years in 2023. Notably, in 2015, an unusually high share of young adults (10.77%) who already had children reported wanting none, three-quarters of whom were women.

Among the young people who declare not to have children, consistent patterns in terms of education and Hukou status are observed across different years of survey. With respect to education (Table 2), the highest share always comes from those with some post secondary education, followed by those who attended high school or equivalent, with the lowest share from people who were unable to complete the 9-year mandatory education. As for Hukou status (Table 3), people with urban Hukou consistently represent a higher share than those with rural Hukou in most years, except 2017. The 2017 exception is closely linked to an anomaly in the regression results that I will discuss later in this section.

Moving on to the regression analysis, which examines the associations of education, Hukou, and gender while controlling for other variables, I highlight key results from the basic model run on yearly data from 2012 to 2023 (see Table 4) and discuss the corresponding hypotheses. First, education does have significant associations with zero fertility desire in some years, but not consistently so over the last decade. College education shows statistical significance in 2012, 2017 and 2021, with the odds ratio reaching 2.9 ($p<0.001$) in 2021, but not so in either 2015, 2018, or 2023 (Table 4). In all these years, the

odds ratios are consistently above one, which suggests college education always indicates a higher chance of expressing zero fertility desire and eventually in 2021, the odds of people with college education expressing zero fertility desire reached almost three times as much as the odds of people without college education. However, with the inconsistent significance level across 6 waves of data, especially among the last three waves of 2018, 2021, and 2023 when zero fertility desire surged substantially, it's hard to draw a definite conclusion with regard to hypothesis 1. Although the descriptive statistics suggest that higher education is associated with an increased likelihood of expressing zero fertility desire, the regression analysis provides only limited evidence for 2021. College-educated young adults appear more likely to express zero fertility desire, but this association requires further data and analysis to be confirmed.

Second, Hukou status shows an inconsistent association with zero fertility desire. Hukou is only significant in predicting zero fertility desire in 2018, with a coefficient of 0.437, indicating that young adults with rural Hukou have less than half the odds of expressing zero fertility desire compared to their urban counterparts (Table 4). Interestingly, the odds ratio for Hukou in 2017 exceeds one. Although not statistically significant, this suggests a reversed pattern, where rural Hukou holders had higher odds of expressing zero fertility desire than urban peers. This atypical coefficient may be due to a higher proportion of rural participants (Tables 2). Overall, these results provide suggestive but limited evidence, insufficient to reject the null for Hypothesis 2.

Third, gender exhibits the strongest and most consistent association with zero fertility desire across the survey period. The gender variable is significant in all five waves, with significance increasing from $p < 0.05$ in 2012 to $p < 0.001$ in 2023 (Table 4). Odds ratios for gender are consistently below one, indicating that young men are less likely than young women to express zero fertility desire, both in years when zero fertility desire was rare and when it gained momentum. In 2023, the odds ratio is roughly one-third, meaning that, controlling for education and Hukou, the odds of young women expressing zero fertility desire are approximately three times those of young men. These results provide strong support for Hypothesis 3.

Before discussing the interaction model results, I notice that two control variables show notable effects in 2018 and 2021, when zero fertility desire became more salient. First, self-rated health, measured on a 5-point Likert scale, is strongly associated with zero fertility desire. Each one-point increase in self-rated health corresponds to roughly a 40% reduction in the odds of expressing zero fertility desire in both 2018 ($p < 0.001$) and 2021 ($p < 0.01$). Put differently, a young adult reporting the lowest health rating has 7.6 times the odds of claiming zero fertility desire compared to a peer reporting the highest rating, highlighting the importance of mental and physical well-being in shaping fertility attitudes. Second, regional differences are significant. The Northeast consistently shows higher odds of zero fertility desire compared to the East, China's most economically developed region. Once well-developed but now in prolonged recession, the Northeast exhibits the highest odds ratios: 3.5 ($p < 0.001$) in 2018 and 5.5 ($p < 0.001$) in 2021, indicating regional economic context may influence fertility preferences beyond simple development status.

Finally, we turn to the interaction of gender with 'elite' status, namely education and Hukou. Two additional models were estimated with these interaction terms. Table 6 presents the results for the gender × Hukou model. The main effect of gender remains significant, but neither the main effect of Hukou nor the interaction is significant. This suggests that while the odds difference between men and women is statistically meaningful and is not contingent on Hukou status, the difference between urban and rural women is not sufficient to reject the null hypothesis. Within the scope of this study, the evidence does not support Hypothesis 5—that urban young women are more likely than rural young women to express zero fertility desire. In contrast, the gender × education interaction model (Table 5) run on the pooled data have both main effects of both gender and college significant but interaction effect not significant. The results show evidence that even though the education gap in zero fertility desire is not contingent on gender, college-educated women are indeed more likely to express zero fertility desire than their non-college-educated peers, lending support to reject the null of Hypothesis 6.

Discussion

Based on the descriptive analysis, young adults expressing no desire to have children appear to represent a growing trend, with the overall share rising from just 5% in 2012 to 32% in 2023. Notably, this trend is more consistently associated with gender than with conventional social status markers such as education or Hukou. Evidence points toward the education disparity as opposed to Hukou status among young women being statistically associated with zero fertility desire. While early fertility desires may or may not translate into actual childbearing decisions later in life, this unprecedented rise among young adults is highly unusual and represents an early attitudinal shift with regard to childlessness.

By documenting trends on zero fertility desire, this study contributes to broader debates on fertility culture in China and East Asia by highlighting an emerging attitudinal pathway toward even lower fertility that operates alongside, rather than through, well-documented economic and structural constraints. Existing research in the region has largely emphasized the role of high childrearing costs, labor market pressures, and gendered work–family incompatibilities in suppressing fertility outcomes despite near-universal fertility desire. The growing prevalence of zero fertility desire identified here suggests a potential generational break from the long-held belief that having children is essential to a meaningful life. If such attitudinal shifts become widespread, policy interventions that focus primarily on reducing economic barriers or expanding family benefits may have limited effectiveness, as they target constraints on fertility realization rather than the erosion of fertility desire itself.

An additional implication of rising zero fertility desire concerns its potential consequences for union formation, especially in East Asian societies where marriage and childbearing remain tightly linked. Fertility timing and biological clocks—particularly among women—often motivate entry into marriage, even in the absence of strong marital aspirations. If having children is no longer perceived as essential to a meaningful or complete adult life, the incentive to enter marriage may weaken substantially. From this perspective, the growth of zero fertility desire may contribute to declining marriage rates. This possibility complicates dominant narratives that treat delayed or foregone marriage as a principal cause of low

fertility, by suggesting a potential reverse causal reasoning: shifts in fertility culture may themselves undermine marriage formation. Recognizing this linkage is especially important in East Asia, where marriage remains highly normative yet increasingly postponed, and where changes in fertility desire may have cascading effects on both union formation and population dynamics.

More broadly, this study contributes to the literature on childlessness by offering evidence of an early onset of childlessness-related attitudes, emerging well before typical life-course stages associated with union formation or completed fertility. While much of the existing childlessness literature examines outcomes or intentions later in adulthood, the patterns observed among young adults in China suggest that childlessness may increasingly be contemplated—or even adopted—as a default orientation at earlier ages. Such early articulation of zero fertility desire may compound future demographic challenges by narrowing the pool of individuals who might later revise their intentions upward, thereby reinforcing low fertility trajectories over time. In this sense, the findings underscore the importance of incorporating early-life attitudinal shifts into theories of childlessness and low fertility, complementing existing accounts that focus on structural constraints and delayed life-course transitions.

One surprising finding of this study is that gender emerges as a more consistent correlate of zero fertility desire than education or hukou. This pattern resonates with a broader body of research showing that gender has become a central axis of ideological and value polarization in many contemporary societies. In North America and Europe, gender differences structure attitudes toward politics, family, and social norms, with widening gaps observed among highly educated groups(Gillion, Ladd, and Meredith 2020; Lomazzi and Soboleva 2024; Ondercin and Lizotte 2021). A similar pattern appears to be emerging in China. Public discourse surrounding gender equality, feminism, and family roles has intensified in recent years, particularly in online spaces, where debates are often marked by polarization or even hostility(Piao et al. 2025). Seen in this light, zero fertility desire may be understood not merely as a shift in fertility culture, but as part of a broader value cleavage in which gendered experiences and expectations increasingly organize orientations toward family life. The fact that zero fertility desire is not systematically concentrated among urban or college-educated young women could suggest that this gendered divide cuts across conventional status hierarchies, pointing to a form of polarization that is cultural rather than purely structural.

However, this speculation needs more evidence in future studies with longitudinal data that are less influenced by the socio-economic impact of the COVID-19 pandemic and provide a fuller picture on income. Data limitations—most notably potential sampling bias in the 2021 wave and the absence of a reliable income measure—constrain the ability to disentangle ideological polarization from unobserved socioeconomic heterogeneity. The 2021 CGSS data, collected in the aftermath of pandemic-related disruptions, underrepresented some major provinces and may reflect selective participation among young adults with greater availability or willingness to respond. The 2023 data confirm the continued rise in zero fertility desire post pandemic, but may still incompletely capture lingering labor-market and consumer-confidence effects. In addition, income effects can only be approximated through subjective income assessments and regional indicators. Future data collection and richer measures will be

essential for clarifying whether the observed gender pattern reflects a durable cultural divide or a transitory artifact of data constraints.

Conclusion

This study documents a sharp and unprecedented rise in zero fertility desire among young adults in China, with the share reporting no desire for children tripling between 2012 and 2023. Although early fertility intentions do not necessarily translate into completed fertility, the magnitude and consistency of this increase are highly unusual in a society where parenthood has long been treated as a normative life goal. The findings suggest that, alongside well-documented economic and structural constraints, an attitudinal pathway toward persistently low fertility may be emerging. If a growing share of young adults no longer view having children as essential, policy interventions aimed primarily at reducing material barriers or incentivizing births may have limited effectiveness, as they target fertility realization rather than fertility desire itself.

A central contribution of this study is the identification of gender as a more consistent correlate of zero fertility desire than education or hukou, with little evidence that this pattern is confined to urban or highly educated women. This points to a potential gender-based polarization in orientations toward family life, echoing broader shifts in values observed in other social domains. More broadly, by highlighting the early emergence of childlessness-related attitudes among young adults, this study contributes to the childlessness literature by shifting attention to earlier life-course stages where fertility preferences may already be forming. While data limitations warrant caution, the results underscore the importance of incorporating early attitudinal change and gendered cultural dynamics into future research on fertility decline in China, East Asia, and beyond.

Declarations

Author Contribution

The author conducted the data analysis, drafted, and revised the paper by herself.

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References

1. Abe, Aya. 2022. “Chapter 4: Childlessness and Social Support in Four East Asian Societies.” Pp. 63–85 in Poverty and Inequality in East Asia.

2. Atoh, Makoto. 2001. “Very Low Fertility in Japan and Value Change Hypotheses.” Review of Population and Social Security Policy (10).
3. Badolato, Luca, Sarah R. Hayford, and Karen Benjamin Guzzo. 2025. “Multiple Dimensions of Uncertainty in Fertility Goals: Recent Trends and Patterns in the United States.” Genus 81(1):14. doi:10.1186/s41118-025-00251-6.
4. Bernardi, Laura, Valerie Anne Ryser, and Jean-Marie Le Goff. 2013. “Gender Role-Set, Family Orientations, and Women’s Fertility Intentions in Switzerland.” Swiss Journal of Sociology 39(1):9–31.
5. Berrington, Ann. 2017. “Childlessness in UK.” in Childlessness in Europe, Demographic Research Monographs. Cham: Springer International Publishing AG.
6. Birdsall, Nancy, and Dean T. Jamison. 1983. “Income and Other Factors Influencing Fertility in China.” Population and Development Review 9(4):651–75. doi:10.2307/1973544.
7. Blair, Sampson Lee, and Timothy J. Madigan. 2020. “Marriage and Fertility Preferences among Young Women in China: Changes over Time.” Journal of Family Issues. doi:10.1177/0192513X20980040.
8. Bloom, David E., and Anne R. Pebley. 1982. “Voluntary Childlessness: A Review of the Evidence and Implications.” Population Research and Policy Review 1(3):203–24.
9. Cao, Xinyan, and Zhenchao Qian. 2024. “Division of Household Labor in Urban China: Couples’ Education Pairing and Co-Residence with Parents.” Research in Social Stratification and Mobility 92:100941. doi:10.1016/j.rssm.2024.100941.
10. Fincher, Leta Hong, and Paul French. 2023. Leftover Women: The Resurgence of Gender Inequality in China, 10th Anniversary Edition. Anniversary edition. Bloomsbury Academic.
11. Fong, Vanessa L. 2002. “China’s One-Child Policy and the Empowerment of Urban Daughters.” American Anthropologist 104(4):1098–1109. doi:10.1525/aa.2002.104.4.1098.
12. Gillion, Daniel Q., Jonathan M. Ladd, and Marc Meredith. 2020. “Party Polarization, Ideological Sorting and the Emergence of the US Partisan Gender Gap.” British Journal of Political Science 50(4):1217–43. doi:10.1017/S0007123418000285.
13. Hannum, Emily, Peggy Kong, and Yuping Zhang. 2009. “Family Sources of Educational Gender Inequality in Rural China: A Critical Assessment.” International Journal of Educational Development 29(5):474. doi:10.1016/j.ijedudev.2009.04.007.
14. Hartnett, Caroline Sten, and Alison Gemmill. 2020. “Recent Trends in U.S. Childbearing Intentions.” Demography 57(6):2035–45. doi:10.1007/s13524-020-00929-w.
15. He, Haoran, Sherry Xin Li, and Yuling Han. 2023. “Labor Market Discrimination against Family Responsibilities: A Correspondence Study with Policy Change in China.” Journal of Labor Economics 41(2):361–87. doi:10.1086/719966.
16. He, Xin. 2021. “Divorce in China: Institutional Constraints and Gendered Outcomes.” in Divorce in China. New York University Press.

17. Hu, Yang. 2018. “Patriarchal Hierarchy? Gender, Children’s Housework Time, and Family Structure in Post-Reform China.” Chinese Sociological Review 50(3):310–38. doi:10.1080/21620555.2018.1430508.
18. Huang, Jinlong, Dahe Qin, Tong Jiang, Yanjun Wang, Zhiqiang Feng, Jianqing Zhai, Lige Cao, Qingchen Chao, Xinwu Xu, Guofu Wang, and Buda Su. 2019. “Effect of Fertility Policy Changes on the Population Structure and Economy of China: From the Perspective of the Shared Socioeconomic Pathways.” Earth’s Future 7(3):250–65. doi:10.1029/2018EF000964.
19. Kreyenfeld, Michaela. 2017. Childlessness in Europe. Demographic Research Monographs. Cham: Springer International Publishing AG.
20. Lavely, William, and Ronald Freedman. 1990. “The Origins of the Chinese Fertility Decline.” Demography 27(3):357–67. doi:10.2307/2061373.
21. Liu, Fengshu. 2006. “Boys as Only-children and Girls as Only-children—Parental Gendered Expectations of the Only-child in the Nuclear Chinese Family in Present-day China.” Gender and Education 18(5):491–505. doi:10.1080/09540250600881626.
22. Liu, Huijun, Shuzhuo Li, and Marc W. Feldman. 2013. “Gender in Marriage and Life Satisfaction Under Gender Imbalance in China: The Role of Intergenerational Support and SES.” Social Indicators Research 114(3):915–33. doi:10.1007/s11205-012-0180-z.
23. Lomazzi, Vera, and Natalia Soboleva. 2024. “Polarization of Gender Role Attitudes across Europe.” Journal of Contemporary European Studies 32(4):1192–1211. doi:10.1080/14782804.2024.2327846.
24. Michelson, Ethan. 2019. “Decoupling: Marital Violence and the Struggle to Divorce in China.” American Journal of Sociology 125(2):325–81. doi:10.1086/705747.
25. Mulder, Monique Borgerhoff. 1998. “The Demographic Transition: Are We Any Closer to an Evolutionary Explanation?” Trends in Ecology & Evolution 13(7):266–70. doi:10.1016/S0169-5347(98)01357-3.
26. Ondercin, Heather Louise, and Mary Kate Lizotte. 2021. “You’ve Lost That Loving Feeling: How Gender Shapes Affective Polarization.” American Politics Research 49(3):282–92. doi:10.1177/1532673X20972103.
27. Piao, Jinghua, Fang Zhang, Tianpei Ren, Fengli Xu, Jinglei Zhou, Jun Su, Peng Ru, and Yong Li. 2025. “Polarization of Public Opinions on Feminism in China.” Humanities and Social Sciences Communications 12(1):586. doi:10.1057/s41599-025-04635-z.
28. Raymo, James M., Hyunjoon Park, Yu Xie, and Wei-jun Jean Yeung. 2015. “Marriage and Family in East Asia: Continuity and Change.” Annual Review of Sociology 41:471–92. doi:10.1146/annurev-soc-073014-112428.
29. Retherford, Robert, and Naohiro Ogawa. 2006. “Japan’s Baby Bust: Causes, Implications, and Policy Responses.” in The Baby Bust: Who Will Do the Work? Who Will Pay the Taxes?, edited by F. R. Harris. Bloomsbury Publishing PLC.

30. Sevareid, Eric E., Katherine Graham, Karen Benjamin Guzzo, Wendy D. Manning, and Susan L. Brown. 2023. “Have Teens’ Cohabitation, Marriage, and Childbearing Goals Changed Since the Great Recession?” Population Research and Policy Review 42(6):87. doi:10.1007/s11113-023-09833-8.
31. Shek, D. T. L., W. M. Kwong, X. Zhu, and Z. Yang. 2019. “Gendered Expectation towards Sons and Daughters in Chinese Parents in Hong Kong.” International Journal of Child and Adolescent Health 12(4):357–67.
32. Simon, Julian L. 1969. “The Effect of Income on Fertility.” Population Studies 23(3):327–41. doi:10.1080/00324728.1969.10405289.
33. Sobotka, Tomás. 2021. “World’s highest childlessness levels in East Asia.” Population & Societies 595(11):1–4. doi:10.3917/popsoc.595.0001.
34. The ESHRE Capri Workshop Group. 2010. “Europe the Continent with the Lowest Fertility.” Human Reproduction Update 16(6):590–602. doi:10.1093/humupd/dmq023.
35. Weeden, Jason, Michael J. Abrams, Melanie C. Green, and John Sabini. 2006. “Do High-Status People Really Have Fewer Children?” Human Nature 17(4):377–92. doi:10.1007/s12110-006-1001-3.
36. Xu, Jing, Lu Li, Xiao-Qian Ma, Miao Zhang, Jia Qiao, Sharon R. Redding, Rong Wang, and Yan-Qiong Ouyang. 2023. “Fertility Intentions, Parenting Attitudes, and Fear of Childbirth among College Students in China: A Cross-Sectional Study.” Journal of Pediatric and Adolescent Gynecology 36(1):65–71. doi:10.1016/j.jpag.2022.07.015.
37. Yang, Sungeun, and Paul C. Rosenblatt. 2008. “Confucian Family Values and Childless Couples in South Korea.” Journal of Family Issues 29(5):571–91. doi:10.1177/0192513X07309462.
38. Zhang, Chenyun, Lingling Wei, Yinyan Zhu, Li Teng, Wenchang Zhang, Jia Xu, Mengqi Qin, Na Jiang, Haridah Alias, and Li Ping Wong. 2022. “Fertility Intentions among Young People in the Era of China’s Three–Child Policy: A National Survey of University Students.” BMC Pregnancy and Childbirth 22(1):637. doi:10.1186/s12884-022-04873-y.
39. Zhang, Jian, Songqing Jin, Tao Li, and Haigang Wang. 2021. “Gender Discrimination in China: Experimental Evidence from the Job Market for College Graduates.” Journal of Comparative Economics 49(3):819–35. doi:10.1016/j.jce.2021.01.003.
40. Zheng, Zhenzhen. 2004. “Fertility Desire of Married Women in China.” Chinese Journal of Population Science (5).
41. Zhu, Wenting, and Xiumin Hong. 2022. “Are Chinese Parents Willing to Have a Second Child? Investigation on the Ideal and Realistic Fertility Willingness of Different Income Family.” Early Education and Development 33(3):375–90. doi:10.1080/10409289.2021.1955581.

Tables

Tables 1 to 7 are available in the supplementary files section

Figures

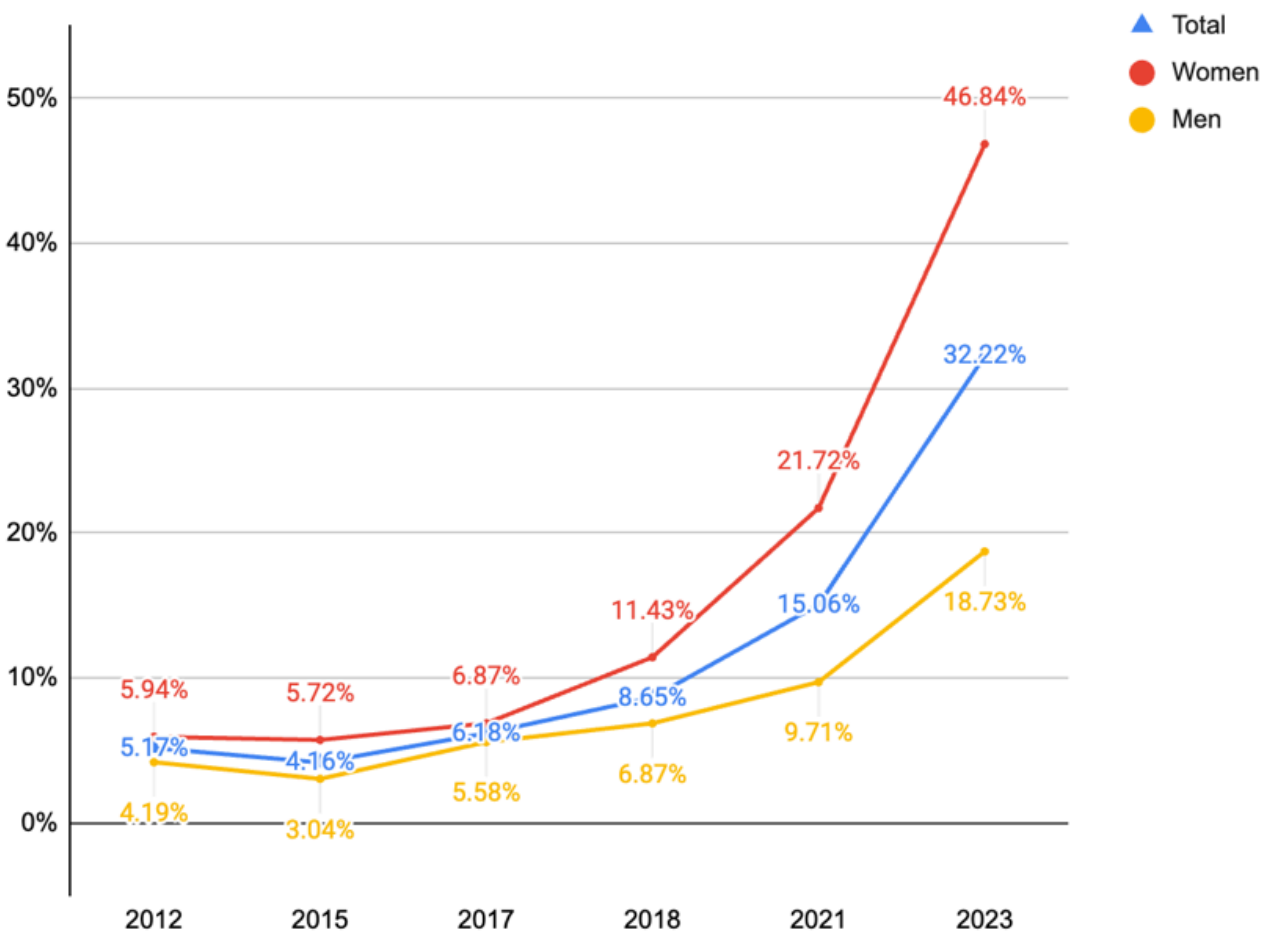


Figure 1

Percentage of Young adults 18-24 who desire no children, total and by gender

Supplementary Files

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