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Empowering rural family networks: parental support and fertility intentions in China

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Introduction: Fertility decline in rural China raises concerns for demographic sustainability and gender equity. This study examines whether parental support to reproductive-age adults shapes fertility intentions and through which psychological pathways.

Methods: We analyzed 4,263 reproductive-age respondents from the China Family Panel Studies (CFPS). Parental support was measured along three dimensions—emotional support, caring support (childcare/household help), and economic support. Fertility intentions were the outcome. Depressive symptoms and subjective well-being were specified as mediators. We estimated logistic regressions with controls and conducted mediation analyses to test indirect effects.

Results: Emotional support and caring support were positively associated with fertility intentions. Both effects operated partly through lower depressive symptoms and higher subjective well-being. Economic support showed no robust association. Heterogeneity analyses indicated that caring support had a stronger, compensatory effect among rural-urban migrant families and households in under-resourced areas.

Discussion: Findings highlight the role of informal, family-based support, especially emotional and caring support, as empowerment mechanisms that enhance psychological well-being and strengthen reproductive agency. Policies that are gender sensitive and rural inclusive, such as expanding affordable childcare and mental-health resources and recognizing unpaid care, may help reduce structural inequalities and promote equitable, sustainable rural development.

KEYWORDS

rural women, intergenerational support, fertility intentions, subjective wellbeing, caregiving burden, rural development

1 Introduction

In recent years, China has witnessed a dramatic decline in its birth rate, with annual births falling below 10 million for the first time in 2022 (Li et al., 2024). This marks the beginning of a national population decline, intensifying concerns about rapid aging, labor force contraction, and the long-term sustainability of social systems (Peterson, 2017). As fertility intentions are a strong predictor of actual childbearing behavior (Schoen et al., 1999), understanding what shapes individuals' decisions to have children, especially in rural and under-resourced contexts, is now a key policy concern.

While previous efforts have focused on economic incentives, growing attention is being paid to the role of informal support within families, particularly how assistance from parents influences childbearing decisions of the adult children (Cai et al., 2024). Parental support in the form of emotional care and hands-on caregiving offers a non-market mechanism that can alleviate the burdens of child-rearing in ways not easily replaced by institutional services (Del Boca, 2002). This is especially relevant for rural women and rural-to-urban migrant families, who often face institutional gaps in accessing childcare

and health services (Aassve et al., 2012; Thomese and Liefbroer, 2013). In China, where public childcare is limited and unevenly distributed, nearly half of grandparents regularly provide care for grandchildren (Zhang and Chen, 2023), creating an intergenerational safety net that substitutes for formal support systems. Such caregiving, along with emotional encouragement from older generations, can ease both the practical and psychological pressures associated with childbearing (Han et al., 2019; Dong et al., 2024).

Prior studies show mixed results on the relationship between parental support and fertility intentions. Some evidence suggests that emotional closeness, financial transfers, and grandparental childcare can encourage childbearing (Balbo and Mills, 2011; Fiori, 2011; Lehrer and Kawasaki, 1985; Miller, 1992; Modena and Sabatini, 2012; Hrdy, 2009; Mathews and Sear, 2013a,b; Waynforth, 2012). However, other studies report that such support may lead to delayed or lower fertility intentions, especially when material assistance is not accompanied by emotional support or does not match the specific needs of the family (Tanskanen and Danielsbacka, 2021; Sear and Coall, 2011; Schaffnit and Sear, 2017a; Xu, 2019). These contradictions suggest that the effectiveness of parental support is not solely dependent on material value but also on its psychological meaning and contextual fit. Increasingly, researchers have examined how intergenerational support may shape fertility intentions via psychological pathways. Individuals with stronger mental wellbeing such as lower depressive symptoms and higher life satisfaction tend to have stronger reproductive motivation (Zhao et al., 2024). Supportive relationships with parents can buffer emotional stress, reduce anxiety, and promote optimism about family life (Strine et al., 2008; Liu et al., 2024b; Amato, 1994; Tanskanen and Danielsbacka, 2018; Fingerman et al., 2012).

In the Chinese context, women with greater subjective wellbeing and better family communication report significantly higher fertility intentions, while those facing psychological distress are less likely to plan for children (Zhao et al., 2024). These findings underscore the importance of emotional and psychological readiness as a foundation for reproductive decision-making, especially among women in resource-constrained settings (Li, 2025a; Aassve et al., 2016). However, the impact of parental support is not uniform across households. China's socio-demographic shifts (urbanization, migration, and the hukou household registration system) have produced a diversity of family configurations that shape how and where support can be accessed (Schaffnit and Sear, 2017b). The emergence of "three-generation migrant households," where grandparents relocate to cities to help care for grandchildren (Bai, 2021; Huang, 2011; Wang, 2019; Peng, 2020; Guo and Ngai, 2021), and "left-behind families," where children remain in rural areas under grandparental care while parents migrate for work (Zhao et al., 2018), reveal deeply unequal support landscapes. In these families, especially those led by rural women or migrants, formal childcare services are often inaccessible, making them heavily reliant on informal intergenerational support. Thus, the effectiveness of parental assistance depends on whether it aligns with each family's resource constraints, caregiving burdens, and emotional needs (Sandstrom et al., 2016).

Despite the growing body of literature, three key gaps remain: (i) limited differentiation of parental support types

and their heterogeneous effects on fertility intentions; (ii) insufficient examination of psychological mediators such as depressive symptoms and subjective wellbeing; and (iii) an oversimplified dichotomy of urban vs. rural family context, often based solely on adult children's residence without accounting for parental location or mobility. To address these issues, this study uses data from the 2018–2022 waves of the China Family Panel Studies (CFPS). In this study, we construct multidimensional indicators of parental support (emotional, caregiving, and financial), and incorporate mental health as a mediating variable. Using binomial logistic regression with mediation analysis, study examine: (1) how different types of parental support affect adult children's fertility intentions; (2) whether emotional wellbeing mediates these effects; and (3) how the effects vary across diverse family contexts, especially among rural and migrant households. The studies clarifies the mechanisms through which intergenerational support empowers reproductive decision-making and identifies pathways to strengthen informal support systems to improve fertility potential in structurally disadvantaged groups.

2 Theoretical framework and hypotheses

2.1 Direct effects of parental support on fertility intentions

Intergenerational solidarity theory provides a comprehensive framework for investigating parental support. It comprises six dimensions: affectual, associational, consensual, functional, normative, and structural solidarity (Bengtson and Roberts, 1991). A recent systematic review of 42 global studies (Duflos and Giraudeau, 2022) confirms the cross-cultural applicability of this framework, demonstrating that functional and affectual solidarity not only provide resource security but also enhance a sense of belonging and reduce uncertainty. From this perspective, parental support can be understood as a form of resource investment embedded within intergenerational solidarity, potentially influencing fertility intentions through multiple mechanisms. Existing research indicates that familial support operates not merely as resource provision but also as a social interaction that strengthens adult children's psychological states. For instance, emotional support and intimate communication may enhance adult children's sense of security and family belonging (Tanskanen and Rotkirch, 2014), thereby alleviating uncertainties and anxieties associated with reproductive decisions. Caring support, as an instrumental aid, enhances perceived control and life predictability (Fu et al., 2025), thereby bolstering confidence in childbearing. Although financial support is often assumed to alleviate economic burdens, it may fail to address deeper needs related to time and emotional management (Schaffnit and Sear, 2017b). In contrast, emotional and caring support may have a more direct impact on fertility intentions. Most existing studies rely on a binary measure of support receipt, without integrating diverse support types into the intergenerational solidarity framework or acknowledging that distinct forms of support may operate through distinct mechanisms. Therefore, this study first focuses

on the direct impacts of three support forms on the fertility intentions of reproductive-aged populations and proposes the following hypotheses:

H1: Higher levels of emotional support from parents are positively associated with adult children's fertility intentions.

H2: Higher levels of caring support from parents are positively associated with adult children's fertility intentions.

H3: Financial support from parents does not significantly affect adult children's fertility intentions.

2.2 Mediation mechanism: depression levels and subjective wellbeing

After identifying the direct effects of different types of parental support on fertility intentions, it is crucial to explore the underlying mechanisms. Fertility intentions are widely considered a key antecedent of fertility behavior, representing individuals' subjective expressions after comprehensively considering resources, costs, expectations, and the external environment. As a complex decision-making behavior, fertility choice is not only constrained by objective conditions but also intensely regulated by individual psychological mechanisms. According to evolutionary psychology, individual behaviors often stem from perceptions and stress responses mediated by specific mental modules to the external environment, which have formed over long-term evolution to assist humans in making reproductive and resource allocation decisions (Tooby and Cosmides, 1992). In the contemporary social environment, the conditions influencing individual fertility decisions have become more complex and changeable. Although human fertility behavior has an adaptive basis in evolution, new factors such as the pace of modern life, economic pressures, and social expectations may interfere with the original psychological mechanisms, making it difficult to accurately judge whether the current time is suitable for childbearing (Newson et al., 2005). Such mismatches between evolved psychology and modern environments may trigger avoidance behaviors, anxiety, or hesitation toward childbearing.

According to intergenerational solidarity theory, such solidarity among family members not only provides material support but also enhances emotional security, reduces perceived stress, and improves wellbeing. As a result, increasing attention has been paid to the psychological role of parental support (Euler and Michalski, 2007). In general, emotional support fosters intimacy and trust among family members, thereby helping to alleviate the emotional stress experienced by individuals of reproductive age (Rodriguez et al., 2020). Consequently, caring support reduces the time and energy burden associated with childcare (Qi, 2018), thereby enhancing a sense of control and life satisfaction. These mechanisms point to a central variable, mental health, a key factor influencing individual behavior, which is multidimensional rather than unidimensional. Headey suggests that it should be understood from a multidimensional perspective, consisting of a cognitive dimension (e.g., subjective wellbeing) and an emotional dimension (e.g., anxiety and depression; Headey et al., 1993). The former reflects individuals' positive evaluations of their overall life conditions, while the latter captures the intensity of negative emotional experiences. Previous studies have shown

that individuals with higher subjective wellbeing and lower depression levels are more likely to plan for and achieve their fertility goals. Therefore, this study treats subjective wellbeing and depression levels as two complementary but distinct dimensions of mental health representing the positive and negative aspects of psychological states, respectively. Besides, constructs a mediation model to explore indirect pathways linking parental support and fertility intentions (Zhao et al., 2024; Li, 2025a; Le Moglie et al., 2015; Luppi and Mencarini, 2018). Based on this, we propose the following mediation hypotheses:

H4: Parental emotional support reduces depression levels, indirectly increasing fertility intentions.

H5: Parental emotional support enhances subjective wellbeing, indirectly increasing fertility intentions.

H6: Parental caring support reduces depression levels, indirectly increasing fertility intentions.

H7: Parental caring support enhances subjective wellbeing, indirectly increasing fertility intentions.

2.3 Heterogeneity: the moderating role of family contexts

Although existing studies have indicated that parental support may indirectly enhance fertility intentions by improving mental health among adult children, the strength of this association is likely to vary depending on broader social and institutional contexts. In other words, the effectiveness of parental support varies across groups, depending on its accessibility, functional meaning, and the psychological response mechanisms of adult children. These factors show systematic differences across family contexts. To better understand such potential group heterogeneity, this study further highlights that, within the framework of intergenerational solidarity theory, emotional and functional solidarity among family members manifests not only in the willingness to interact but also in broader structural constraints. As Bengtson and Roberts (Bengtson and Roberts, 1991) noted in their concept of "structural solidarity," intergenerational interaction is profoundly shaped by external factors such as residential distance, institutional access, and life arrangements (Bengtson and Roberts, 1991).

In China's context of rapid urbanization and a deeply entrenched hukou system, the traditional urban-rural dichotomy no longer accurately captures the complexity of intergenerational ties. With increasing rural-to-urban migration, significant disparities have emerged between native urban residents and migrant worker families in terms of institutional rights, access to public services, and the availability of parental support networks (Chan, 2010; Nielsen and Smyth, 2008). Based on extensive interviews, Qi (2018) reports that more and more grandparents have joined the migrant population to provide childcare services for their adult children. To better capture this structural heterogeneity, this study classifies families into three representative contexts based on both the hukou status and current residence of parents and children: (1) Urban families: both parents and adult children hold urban hukou and live in urban areas; (2) Rural-urban families: parents hold rural hukou but have migrated to the city, where their adult children also reside; (3) Rural families: both generations hold rural hukou and reside in rural areas.

Across these contexts, grandparents' caregiving capacity (Albertini et al., 2007; Cao, 2006; Coall et al., 2009; Hank and Buber, 2009; Hogan et al., 1993; King et al., 2003; Leek and Smith, 1991; McGarry and Schoeni, 1997) and adult children's support needs (McGarry and Schoeni, 1997) differ markedly, thereby influencing their effects on fertility intentions (Coall et al., 2014). In urban families, formal childcare services are relatively accessible, and adult children rely less on functional support from their parents; as a result, emotional support plays a more prominent role in strengthening family attachment and reproductive intentions (Schaffnit and Sear, 2017a). In contrast, rural-urban families face institutional barriers to accessing formal childcare services due to hukou restrictions, making them more dependent on parental caring support (Song and Dong, 2018; Guo and Ngai, 2021). This type of functional assistance directly reduces the burden of childcare and may serve as an important factor stimulating fertility behavior. In rural families, co-residence between generations is common, and intergenerational ties are deeply rooted in daily routines, with emotional support embedded in daily interaction. It helps stabilize family expectations and strengthen confidence in childbearing. Based on these distinctions, we propose the following moderation hypotheses to assess whether the effects of parental support on fertility intentions differ across family contexts (Figure 1):

H8: In urban families, emotional support has a more substantial effect on fertility intentions than caring support.

H9: In rural-urban families, caring support plays a more critical role in enhancing fertility intentions.

H10: In rural families, emotional support has a more pronounced effect on fertility intentions.

3 Materials and methods

3.1 Research design

This study used data from the China Family Panel Studies (CFPS), a nationally representative longitudinal survey launched in 2010 by the Institute of Social Science Survey at Peking University and covers 25 provinces across China. The CFPS provides comprehensive information on household and individual-level economic conditions, education, and health, and is widely recognized for its reliability and validity. This study uses the dataset from the most recent follow-up survey conducted in 2022, which collected data on adult children aged 15–49 years. After data cleaning and excluding incomplete cases, a total of 4,263 valid samples were obtained. The operational definitions and measurements of key variables are shown in Table 1.

3.2 Measures

3.2.1 Dependent variable

The dependent variable in this study is the fertility intentions of adult children. In the context of persistently low fertility rates, fertility intention is often regarded as a crucial prospective indicator of future childbearing behavior. Unlike actual childbearing behavior, which may be limited by external constraints such

as policy and economy, subjective fertility intention is a more direct reflection of an individual's preference for the ideal number of children. We utilized the CFPS 2022 question "How many children do you think you would ideally like to have?" to measure respondents' fertility intentions. This question has been shown to have good predictive validity for both short-term and long-term fertility planning. Individuals who answered "0" were considered to have no childbearing intentions and were assigned a value of 0. In contrast, those who answered "1" or more were considered to have childbearing intentions and assigned a value of 1. A dichotomous dependent variable was constructed for use in logit regression analyses. This treatment aligns with the prevailing approach to fertility intentions in the established literature. Transforming the ideal number of children into a willingness to bear children can better capture the fertility tendency of contemporary Chinese reproductive-aged populations after balancing resource pressures and family values.

3.2.2 Independent variables

The key independent variable in this study is parental support, which encompasses three dimensions: emotional support, caring support, and financial support (Dong et al., 2024; Tanskanen and Rotkirch, 2014). Emotional Support: Measured by adult children's self-rated closeness to their parents from two items: "How close is your relationship with your [father/mother]?" (1 = very distant to 5 = very close). The scores for both parents were summed to create an emotional support index (range: 2–10), where higher values indicate stronger emotional bonds. Caring support is measured by whether and how often parents provide childcare or household assistance. CFPS includes two relevant questions: "Do your parents help with caregiving?" and "How frequently?" A composite caring support index was constructed using the entropy weighting method, which reduces subjective bias and effectively quantifies the multidimensional nature of caregiving involvement. Financial support is measured by the total monetary or in-kind transfers received by respondents from their parents over the past year (Schaffnit and Sear, 2017b).

3.2.3 Mediators

To test Hypotheses H4–H7, we included two key mediators reflecting the psychological status of adult children: Depression Levels. Measured using the eight-item Center for Epidemiological Studies Depression Scale (CES-D 8) in CFPS. Scores range from 8 to 32, with higher scores indicating greater depression severity. Following existing studies (Bi et al., 2023), we categorized depression levels as 8–12 (good), 13–20 (moderate), and 21+ (poor). Subjective Wellbeing: Measured using the self-reported life satisfaction item: "How satisfied are you with your life overall?" on a scale from 0 (not satisfied at all) to 10 (completely satisfied). This continuous variable reflects individual wellbeing and has been widely used as a proxy for subjective wellbeing in fertility research.

3.2.4 Control variables

To reduce omitted variable bias, the model controls for gender, age, marital status, number of existing children, years of education,

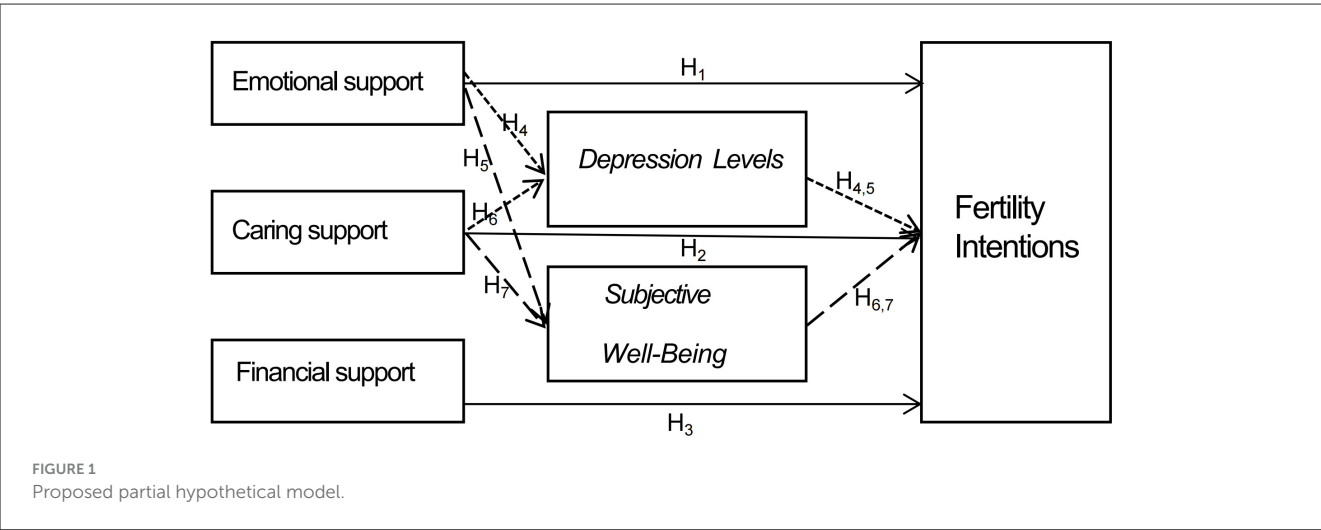


TABLE 1 Variable descriptions and coding.

Variable categories	Variables	Definition and coding
Dependent variable	Fertility intentions	0 = No intention, 1 = One or more children intended
Key independent variables	Emotional support	1 = Very poor to 5 = Very good (Summed scores for both parents, range = 2–10)
	Caring support	Constructed using the entropy weight method based on caregiving frequency and participation
	Financial support	Total monetary or in-kind transfers received from parents
Mediating variable	Subjective wellbeing	Rated from 0 (Not satisfied at all) to 10 (Completely satisfied)
	Depression levels	0 = No depression, 1 = Mild, 2 = Moderate or severe
Moderating variable	Family context	1 = Urban families, 2 = Rural–urban families, 3 = Rural families
Control variables	Age	15–49 years old
	Gender	0 = Female, 1 = Male
	Residence	0 = Rural, 1 = Urban
	Health status	0 = Unhealthy, 1 = Healthy
	Medical protection	0 = No, 1 = Yes
	Educational attainment	0–22 years
	Number of children in household	0–9
	Employment status	0 = Not employed, 1 = Employed
	Migrant status	0 = Non-migrant, 1 = Migrant
	Household income	Net family income over the past 12 months

personal annual income, health status, medical insurance coverage, current residence, and whether urban-rural mobility (Tanskanen and Rotkirch, 2014; Xiang et al., 2023; Zhuang et al., 2020). Among them, health status is recoded into three categories derived from respondents’ self-rated health assessments. Medical insurance is treated as a binary variable. Respondents has no form of coverage (including public medical care, employee medical insurance, resident medical insurance, or the new rural cooperative scheme) is coded as 0. Those with at least one types of insurance is coded as 1. This classification is based on the responses to the multiple-choice question “Which types of medical insurance do you currently have?”

3.3 Logistic model

The outcome variable, “fertility intentions,” was coded as a binary variable (0 = no intention, 1 = has intention). Accordingly, we applied the logistic regression model and used the method of maximum likelihood estimation (MLE). Let P denote the probability that $Y = 1$, representing that an individual has fertility intentions, $1 - P$ denotes the probability of not having such intentions. The parameter β represents the regression coefficient associated with each explanatory variable X_i , which includes caring, financial, and emotional forms of intergenerational support. The logistic regression model is specified as Equation 1.

$$\text{logit}(P(Y_i = 1)) = \alpha + \sum_{j=1}^k \beta_j X_{ij} \quad (1)$$

Where $P(Y_i = 1)$ denotes the probability that an individual i has fertility intentions, X_{ij} is the j th explanatory variable, and β is its regression coefficient. If β is significant, intergenerational support has an impact on fertility intentions.

To examine the mediating role of depression levels and subjective wellbeing in the association between intergenerational support and fertility intentions (Hypotheses H4–H7), this study applies the classical three-step mediation approach (Equations 2–4), supplemented by the Bootstrap method for robustness testing. The mediation analysis consists of the following three steps:

Step 1: Regress fertility intentions on intergenerational support.

$$\text{logit}(Y_i) = \alpha_0 + \gamma_1 S_i + \sum \delta_i Z_{ij} \quad (2)$$

Step 2: Regress the mediating variable on intergenerational support.

$$M_i = \alpha_1 + \gamma_2 S_i + \sum \delta_i Z_{ij} \quad (3)$$

Step 3: Include both intergenerational support and mediating variables in the regression model to predict fertility intentions.

$$\text{logit}(Y_i) = \alpha_2 + \gamma_3 S_i + \theta M_i + \sum \delta_i Z_{ij} \quad (4)$$

Where S_i denotes a particular type of intergenerational support, M_i is the mediating variable, and Z_{ij} is the set of control variables. If both coefficients of intergenerational support and the mediator (δ) remain significant, it suggests the presence of a partial mediation effect. In addition, to ensure the robustness of the mediation effect, this study adopts the non-parametric Bootstrap method to estimate the indirect effect, constructs bias-corrected confidence intervals, and repeats the sampling 1,000 times. If the confidence interval of the indirect effect does not contain zero, the mediation effect is established.

4 Results and discussion

4.1 Descriptive analysis

Prior to the regression analysis, descriptive statistics were computed for key variables, grouped by fertility intentions (Table 2). The results indicate that individuals with fertility intentions tended to report higher levels of parental support and better psychological wellbeing. Specifically, those with fertility intentions reported a significantly higher level of emotional support (mean = 8.60) than individuals without fertility intentions (mean = 8.19, $p = 0.002$). Their caring support index was also notably higher (mean = 0.34 vs. 0.17, $p < 0.001$). However, financial support did not show a significant difference between the two groups ($p = 0.203$), suggesting that monetary assistance may have a limited influence on fertility intentions. For psychological indicators, individuals with fertility intentions reported significantly higher average subjective wellbeing (7.29 vs. 6.52, $p < 0.001$). A higher proportion of individuals with fertility intentions reported low

depression levels (98.2% vs. 95.8%, $p = 0.005$). Regarding control variables, individuals with fertility intentions were younger (26.9 vs. 30.4 years), had more children (0.92 vs. 0.24), and were more likely to be married, with all differences reaching statistical significance ($p < 0.01$). Differences in household registration type (hukou), health insurance status, and household income were not statistically significant. In contrast, significant variations were observed in emotional support, caring support, subjective wellbeing, and depressive symptoms between individuals with and without fertility intentions. These patterns provide preliminary support for the hypothesized relationships tested in the subsequent regression analyses.

4.2 Multivariate analysis

According to Model 2, compared with adult children who received less caring support from their parents, those who received more caring support had 1.380 times higher odds of fertility intentions. Parental involvement in childcare and household tasks not only provides emotional companionship but also serves as a substitute for market-based childcare services, thereby reducing the cost burden on young families (Miyazawa, 2016). This supports the notion that parental caregiving can relieve parenting pressure and enhance adult children's willingness to expand their families (Tanskanen and Rotkirch, 2014).

Binomial logistic regression models (Models 1–4) were used to determine the effects of parental support—emotional support, caring support, and financial support—on adult children's fertility intentions. After controlling for key demographic factors, our results show that parental non-monetary support, especially emotional and caring support, has a significant positive impact on adult children's fertility intentions ($p < 0.01$). Model 1 showed that adult children who receive stronger emotional support from parents are much more likely to express an intention to have children (odds ratio ≈ 1.38). It suggests that closer parent-child relationships are associated with a higher likelihood of intending to have children. This result is consistent with previous research, which shows that close emotional relationships provide psychological security, reduce stress, and strengthen confidence in the future, thereby increasing the willingness to take on family responsibilities (Silverstein et al., 2006b). Building on this, more recent studies further highlight that the emotional value of parental involvement is emerging as a central driver of fertility intentions (Coall and Hertwig, 2010; Tanskanen and Rotkirch, 2014). Notably, even in high-income societies with extensive welfare, the perception of being emotionally supported plays a critical role. For example, a recent Finnish study found that not feeling lonely (having sufficient support) was associated with higher fertility intentions (Artamonova et al., 2024).

Model 3 showed that financial support from parents was not significantly associated with fertility intentions in our analysis ($p \approx 0.20$). One explanation is that adult children who rely on parental money often face deeper insecurities, such as unstable jobs, high housing costs, and childcare difficulties (Schaffnit and Sear, 2017a; Fingerma et al., 2012), which monetary gifts alone cannot resolve. The assistance may even reinforce feelings of dependence, failing to alleviate anxieties about raising a

TABLE 2 Descriptive Statistics by Fertility Intentions.

Variables	Fertility intentions = 1 (N = 4,152)	Fertility intentions = 0 (N = 111)	P-value
Count (%)	96.40	3.60	
Emotional support (mean ± SD)	8.6 (1.38)	8.19 (1.5)	0.0021
Caring support (mean ± SD)	0.34 (0.3)	0.17 (0.26)	<0.001
Financial support (mean ± SD)	532.07 (1993.4)	776.48 (1949.82)	0.2028
Subjective wellbeing (mean ± SD)	7.29 (1.98)	6.52 (2.22)	<0.001
Depression level			0.005
Free	1,065 (98.16)	20 (1.84)	
Mild	2,922 (97.30)	81 (2.70)	
Severe	195 (94.20)	12 (5.80)	
Age (mean ± SD)	26.90 (0.66)	30.35 (0.10)	<0.001
Gender			0.775
Male	2,565 (98.23)	48 (1.77)	
Female	1,517 (95.89)	65 (4.11)	
Residence			0.145
Urban	2,415 (97.07)	73 (2.93)	
Rural	1,767 (97.79)	40 (2.21)	
Family context			0.025
Urban families	524 (95.80)	23 (4.20)	
Rural-urban families	2,110 (97.32)	58 (2.68)	
Rural families	1,530 (97.95)	32 (2.05)	
Healthy			0.003
Good	3,655 (97.65)	99 (2.58)	
Bad	446 (96.96)	14 (3.04)	
Medium			0.559
Yes	3,736 (97.42)	408 (6.9)	
No	3,855 (93.55)	266 (6.45)	
Education (years) (mean ± SD)	11.82 (3.65)	13.09 (3.99)	<0.001
Number of children (mean ± SD)	0.92 (1.02)	0.24 (0.50)	<0.001
Employment status			0.006
Yes	3,658 (97.62)	89 (2.38)	
No	524 (93.71)	24 (6.29)	
Migrant status			<0.001
Yes	1,784 (97.70)	42 (2.30)	
No	2,398 (97.12)	71 (2.88)	
Family income	11.14 (1.50)	11.27 (1.44)	0.3446

child. As experts have observed in low-fertility countries, purely financial incentives are not a long-term solution for boosting births (Yang et al., 2024); a combination of factors, including career pressures and social expectations, deters young people from having children despite cash support. Our findings align with this view: without emotional reassurance and practical help, money alone is insufficient to encourage parenthood. This aligns

with the core principle of social capital theory, which holds that economic resource transmission, when lacking interpersonal interaction and emotional bonding, often fails to elicit positive behavioral responses (Yang et al., 2024). In fact, comparative research in the UK suggests that the subjective feeling of support may matter more than actual material support for fertility decisions (Schaffnit and Sear, 2017b). Thus, it is the quality

of intergenerational support, rather than the quantity of money transferred, that chiefly drives fertility intentions. These findings also suggest that psychological factors may play a crucial role in determining whether financial support can be effectively translated into reproductive motivation.

At the same time, Model 2 showed that parental caring support, hands-on help with childcare and housework, exhibits a strong, positive association with fertility intentions ($p < 0.01$). In our models, having more caring support from parents increased the odds of intending to have a child by approximately 33%. This form of support provides direct, daily relief to young families, effectively substituting for expensive market-based childcare services (Miyazawa, 2016). It can also be regarded as a form of “hidden financial support,” as parents’ time and effort save the younger generation substantial costs (Cai et al., 2024; Coall and Hertwig, 2010; Bauer and Strub, 2002; Leonetti et al., 2005; Guzman, 1999, 2004). Beyond the economic aspect, caring support from parents offers psychological reassurance: knowing that trustworthy caregivers (grandparents) are available provides a sense of control and security in child-rearing. In the Chinese context, where formal daycare is often limited, parental caregiving substantially eases the burden of raising children and reduces parental anxiety. Qualitative evidence illustrates this: a recent study of Chinese mothers found that grandparents’ assistance in childcare was the main reason many felt able to have a second or third child (Yang et al., 2024). One interviewee stated, “I wouldn’t have a baby without my grandparents to take care of the children. I can’t make money while raising the kids” (Yang et al., 2024). This underscores how crucial intergenerational caregiving is in lowering the perceived cost of childbearing.

Notably, the importance of family-provided childcare is not unique to China. Cross-cultural research shows that in many societies, grandparental care reduces the risks and costs of childbearing, and is correlated with higher fertility intentions in adult children (Aassve et al., 2012; Tanskanen and Rotkirch, 2014). However, cultural context moderates its role. In Western countries with extensive childcare services and ideals of individual independence, grandparents are generally less expected to serve as caregivers, and thus their involvement has a smaller impact (Wang et al., 2022). In East Asian societies like China, by contrast, there is a strong normative expectation (rooted in Confucian familial norms) that grandparents will help raise grandchildren (Cai et al., 2024). This explains why young Chinese adults particularly benefit from and respond to parental caring support, as it addresses a critical gap in the absence of comprehensive public childcare. In sum, our findings reinforce that practical caregiving and emotional bonding, rather than financial transfers, are central to encouraging fertility. However, this caregiving support system now faces institutional challenges. With the progressive implementation of delayed retirement policies, older parents who would traditionally serve as caregivers are being reabsorbed into the labor market (Li, 2025b), thereby reducing their availability for hands-on childcare. This may shift support from time-based caregiving to monetary transfers. Yet, as our findings suggest, financial support alone does not effectively boost fertility intentions. The loss of participatory caregiving and emotional engagement may weaken young adults’ confidence in family-based parenting. Therefore, policymakers and researchers should pay close attention to this emerging challenge,

as the erosion of caregiving capacity may further weaken fertility intentions in the long run.

When all three types of support were included simultaneously in Model 4, emotional support ($OR = 1.369$, $p < 0.01$) and caring support ($OR = 1.331$, $p < 0.05$) remained significantly and positively associated with fertility intentions. In contrast, financial support continued to show no significant effect. These results reinforce the conclusion that emotional bonds and practical caregiving are more influential than financial support in shaping fertility decisions. Building on this conclusion, it is important to consider how such support translates into fertility intentions. Our analysis indicates two possible pathways: first, a psychological mechanism, whereby emotional and caring support improves mental health by lowering depression and enhancing subjective wellbeing; and second, a contextual mechanism, whereby the effectiveness of support varies significantly with family circumstances and the alignment between parental capacity and adult children’s needs (Table 3).

4.3 Robustness check

To ensure that the results were not sensitive to model specifications, we conducted a robustness check for the main predictors. Additionally, two sets of sensitivity analyses were performed: one based on sample restriction and the other on alternative models. First, to account for potential age-related heterogeneity within the reproductive-age population, we restricted the analytical sample to core reproductive-age adults aged 18–40 (Table 4). This adjustment aimed to eliminate the possible influence of older individuals on the main findings. As shown in Table 4, the results remained consistent: emotional support continued to exert a significant positive effect on fertility intentions (Model 1, $OR = 1.409$, $p < 0.01$), as did caring support (Model 2, $OR = 1.578$, $p < 0.01$). When all three types of support were included simultaneously in Model 4, both emotional support ($OR = 1.396$, $p < 0.01$) and caring support ($OR = 1.520$, $p < 0.01$) remained significant and robust, while financial support remained non-significant. These results suggest that the main findings are robust within the core reproductive-age population. Second, we re-estimated the baseline model using a probit specification instead of a logit model to test the sensitivity of the results to the estimation method (Table 5). The findings were largely consistent, with both emotional and caring support showing statistically significant positive effects on fertility intentions (Models 1–2), with effect directions and significance levels aligning closely with those of the original logit models. These results provide further confirmation of the robustness of our conclusions across model specifications.

4.4 Mediating effect

Why do emotional and caring support influence fertility intentions? To examine this question, we analyzed the mediating role of mental health in the relationship between intergenerational support and fertility intentions, incorporating depression levels and subjective wellbeing as mediators (Tables 6, 7). Bootstrap tests combined with marginal effect estimation were used for robustness

TABLE 3 Direct effects of Intergenerational support on fertility intentions.

Variables	(1)	(2)	(3)	(4)
	Model 1	Model 2	Model 3	Model 4
Emotional support	1.376***			1.369***
	(0.129)			(0.130)
Caring support		1.380***		1.331**
		(0.160)		(0.155)
Financial support			0.953	0.941
			(0.068)	(0.064)
Age	1.434***	1.447***	1.456***	1.417***
	(0.151)	(0.153)	(0.156)	(0.151)
Age2	0.605***	0.595***	0.591***	0.612***
	(0.100)	(0.099)	(0.100)	(0.102)
Gender	2.037***	1.861***	1.959***	1.951***
	(0.421)	(0.384)	(0.408)	(0.409)
Urban	0.737	0.702	0.754	0.706
	(0.188)	(0.180)	(0.193)	(0.183)
Health	2.651***	2.997***	2.994***	2.837***
	(0.665)	(0.752)	(0.751)	(0.722)
Medium	0.811	0.804	0.791	0.716
	(0.248)	(0.245)	(0.248)	(0.226)
Eduy	0.938*	0.945	0.937*	0.941*
	(0.033)	(0.033)	(0.033)	(0.033)
Child num	3.099***	2.719***	3.117***	2.898***
	(0.616)	(0.543)	(0.631)	(0.593)
Employer	1.622*	1.609*	1.599*	1.740**
	(0.413)	(0.409)	(0.408)	(0.447)
Migrant	1.617**	1.691**	1.563*	1.722**
	(0.382)	(0.401)	(0.370)	(0.414)
Income	0.922	0.898	0.919	0.916
	(0.079)	(0.083)	(0.081)	(0.081)
Observations	4,263	4,263	4,263	4,263
Pseudo R ²	0.141	0.138	0.133	0.151

Where Odds Ratios (ORs) reported with standard errors shown in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

checks (Table 8). The results indicate that mental health is a key pathway through which parental support affects fertility intentions. First, emotional support exerts dual psychological effects. It significantly reduces depression ($\beta < 0$), and lower depression is associated with a higher likelihood of intending to have children ($p < 0.05$). At the same time, emotional support markedly increases subjective wellbeing ($p < 0.01$), which in turn strongly predicts fertility intentions ($p < 0.01$). The indirect effect of emotional support via subjective wellbeing was statistically significant (≈ 0.07 , 95% CI excluding zero), whereas the indirect effect via

TABLE 4 Robustness test among core reproductive age group (aged 18–40).

Variables	(1)	(2)	(3)	(4)
	Model 1	Model 2	Model 3	Model 4
Emotional support	1.409***			1.396***
	(0.147)			(0.146)
Caring support		1.578***		1.520***
		(0.208)		(0.202)
Financial support			0.948	0.940
			(0.065)	(0.062)
Observations	3,722	3,722	3,722	3,722
Pseudo R ²	0.134	0.137	0.126	0.151

Where Odds Ratios (ORs) are reported with standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 5 Robust check with a probit model.

Variables	(1)	(2)	(3)	(4)
	Model 1	Model 2	Model 3	Model 4
Emotional support	1.155***			1.151***
	(0.050)			(0.050)
Caring support		1.163***		1.142***
		(0.058)		(0.058)
Financial support			0.977	0.970
			(0.035)	(0.034)
Observations	4,263	4,263	4,263	4,263
Pseudo R ²	0.139	0.138	0.131	0.149

Where Odds Ratios (ORs) are reported with standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

depression was weaker. This suggests that improvements in positive psychological states (greater wellbeing) play a more important role than reductions in negative states (lower depression). In practice, parental emotional support enhances adult children’s confidence and optimism about family life, thereby strengthening their willingness to have children, whereas its stress-buffering role is secondary. This finding is consistent with earlier research showing that close parent–child relationships reduce stress and improve wellbeing (Li and Cheng, 2015), ultimately fostering fertility (Li and Cheng, 2015). It also resonates with the sociological concept of psychological capital, in which emotional support helps build resources such as hope and self-efficacy that make life decisions like childbearing feel more attainable. Our results align with recent Chinese survey evidence showing that higher subjective wellbeing directly predicts stronger fertility intentions (Zhao et al., 2024). Similarly, a national study has found that perceived stress suppresses fertility intentions both directly and indirectly (through anxiety and lowered wellbeing), whereas positive family

TABLE 6 Path analysis of emotional support and fertility intentions.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	FI	DL	FI	FI	Sw	FI	FI
Emotional support (ES)	0.319***	−0.322***		0.289***	0.547***		0.226**
	(0.094)	(0.039)		(0.096)	(0.029)		(0.098)
Depression level (DL)			−0.469**	−0.393*			
			(0.194)	(0.202)			
Subjective wellbeing (Sw)						0.183***	0.164***
						(0.046)	(0.049)
Age	0.361***	0.036	0.410***	0.366***	−0.055	0.418***	0.378***
	(0.105)	(0.043)	(0.102)	(0.105)	(0.034)	(0.102)	(0.105)
Age2	−0.503***	−0.044	−0.571***	−0.510***	0.068	−0.583***	−0.528***
	(0.166)	(0.066)	(0.161)	(0.166)	(0.052)	(0.160)	(0.166)
Gender	0.712***	−0.145*	0.626***	0.702***	−0.104	0.708***	0.773***
	(0.207)	(0.081)	(0.201)	(0.207)	(0.065)	(0.203)	(0.209)
Urban	−0.305	−0.126	−0.412*	−0.324	0.050	−0.394	−0.307
	(0.255)	(0.096)	(0.250)	(0.256)	(0.077)	(0.251)	(0.257)
Health	0.975***	−0.990***	0.916***	0.900***	0.639***	0.887***	0.885***
	(0.251)	(0.142)	(0.252)	(0.255)	(0.088)	(0.251)	(0.254)
Medium	−0.209	−0.392***	−0.165	−0.234	0.421***	−0.226	−0.282
	(0.305)	(0.129)	(0.296)	(0.306)	(0.096)	(0.297)	(0.307)
Eduy	−0.064*	−0.015	−0.075**	−0.068*	0.027***	−0.083**	−0.075**
	(0.035)	(0.012)	(0.035)	(0.035)	(0.009)	(0.035)	(0.035)
Child_num	1.131***	−0.073*	1.084***	1.125***	0.159***	1.085***	1.119***
	(0.199)	(0.038)	(0.194)	(0.199)	(0.031)	(0.194)	(0.199)
Employer	0.484*	−0.346***	0.420*	0.460*	0.175*	0.439*	0.467*
	(0.254)	(0.123)	(0.249)	(0.255)	(0.091)	(0.249)	(0.255)
Migrant	0.481**	0.239***	0.509**	0.510**	−0.126*	0.511**	0.510**
	(0.236)	(0.090)	(0.230)	(0.237)	(0.073)	(0.230)	(0.238)
Income	−0.081	−0.016	−0.081	−0.080	−0.000	−0.076	−0.078
	(0.086)	(0.027)	(0.084)	(0.085)	(0.020)	(0.086)	(0.086)
_Cons	−2.559	2.506***	−2.706	−2.153	6.824***	−4.447***	−3.742**
	(1.692)	(0.697)	(1.657)	(1.701)	(0.543)	(1.677)	(1.731)
Observations	4,263	4,263	4,263	4,263	4,263	4,263	4,263
Pseudo R ²	0.141	0.038	0.137	0.144		0.145	0.151

Where Odds Ratios (ORs) are reported with standard errors in parentheses; **p* < 0.1, ***p* < 0.05, ****p* < 0.01.

communication and higher wellbeing increase the probability of intending to have a child (Zhao et al., 2024).

Second, caring support operates through a different mechanism. We find that caring support from parents primarily enhances subjective wellbeing, with no notable effect on depression. Families receiving more daily help with childcare and household tasks report greater life satisfaction and a stronger sense of control, as practical burdens are reduced. This increase in wellbeing then

translates into higher fertility intentions. The mediation analysis confirmed a significant indirect effect of caring support through subjective wellbeing (≈ 0.085 , $p = 0.001$) (Table 9). Importantly, the direct effect of caring support on fertility intentions remained significant even after accounting for mediators, suggesting that caring support influences fertility both directly and indirectly. In contrast, the direct effect of emotional support declined somewhat after including mediators, indicating that part of its

TABLE 7 Path analysis of caring support and fertility intentions.

Variables	(1)	(2)	(3)	(4)	(5)
	Model 1	Model 2	Model 3	Model 4	Model 5
	FI	DL	FI	Sw	FI
Caring support (CS)	0.322***	−0.035	0.332***	0.111***	0.322***
	(0.116)	(0.039)	(0.116)	(0.033)	(0.116)
Depression level (DL)			−0.505**		
			(0.198)		
Subjective wellbeing (Sw)					0.197***
					(0.047)
Age	0.369***	0.037	0.376***	−0.067*	0.390***
	(0.106)	(0.042)	(0.105)	(0.035)	(0.105)
Age2	−0.519***	−0.046	−0.529***	0.084	−0.551***
	(0.166)	(0.066)	(0.166)	(0.054)	(0.165)
Gender	0.621***	−0.105	0.618***	−0.188***	0.718***
	(0.207)	(0.081)	(0.207)	(0.068)	(0.210)
Urban	−0.353	−0.142	−0.386	0.087	−0.358
	(0.256)	(0.095)	(0.257)	(0.080)	(0.258)
Health	1.097***	−1.066***	0.991***	0.798***	0.963***
	(0.251)	(0.141)	(0.256)	(0.091)	(0.255)
Medium	−0.218	−0.384***	−0.260	0.414***	−0.318
	(0.304)	(0.128)	(0.306)	(0.099)	(0.306)
Eduy	−0.056	−0.017	−0.061*	0.031***	−0.070**
	(0.035)	(0.012)	(0.035)	(0.010)	(0.035)
Child_num	1.000***	−0.051	0.996***	0.111***	0.998***
	(0.200)	(0.039)	(0.200)	(0.033)	(0.200)
Employer	0.475*	−0.312**	0.459*	0.108	0.474*
	(0.254)	(0.122)	(0.256)	(0.095)	(0.256)
Migrant	0.525**	0.239***	0.573**	−0.136*	0.575**
	(0.237)	(0.090)	(0.239)	(0.076)	(0.240)
Income	−0.108	−0.011	−0.106	−0.009	−0.100
	(0.092)	(0.026)	(0.091)	(0.021)	(0.092)
_Cons	−2.386	2.405***	−1.850	7.091***	−3.816**
	(1.725)	(0.694)	(1.725)	(0.569)	(1.750)
Observations	4,263	4,263	4,263	4,263	4,263
Pseudo R ²	0.138	0.023	0.144		0.154

Where logit coefficients (log-odds) are reported for Models 1–4 and 6–7, and OLS coefficients for Model 5; standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

impact works through improvements in mental health, particularly subjective wellbeing.

The aforesaid evidence highlights that non-monetary parental support shapes fertility intentions largely through psychological mechanisms. By reducing stress and fostering positive outlooks toward family life, emotional and caring support helps foster a psychological environment conducive to childbearing. These findings are consistent with cross-national evidence showing that happier individuals are more likely to have children. For example, a

multi-country study in low-fertility contexts found that higher life satisfaction is associated with a greater likelihood of subsequent childbearing (Mencarini et al., 2018). This study adds to the literature by identifying parental support as an upstream factor that can improve subjective wellbeing (and reduce distress), thereby creating a favorable psychological environment for childbearing. In summary, subjective wellbeing plays the primary mediating role in linking both emotional and caring support to fertility intentions, while depression reduction acts as a complementary pathway in the

TABLE 8 Summary of mediation effects and bootstrap confidence intervals.

Effect type	ES × DL	ES × Sw	CS × DL	CS × Sw
	Coefficient	Coefficient	Coefficient	Coefficient
Indirect	0.127*	0.090***	0.018	0.022**
	(0.072)	(0.030)	(0.023)	(0.009)
Direct	0.289***	0.226**	0.332***	0.322***
	(0.099)	(0.102)	(0.127)	(0.124)
Total	0.416***	0.316***	0.350***	0.344***
	(0.114)	(0.098)	(0.130)	(0.123)
	ES × DL	ES × Sw	CS × DL	CS × Sw

Where logit coefficients (log-odds) are reported for Models 1–4 and 6–7, and OLS coefficients for Model 5; standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 9 Marginal effects (dy/dx) from mediation models.

Effect type	Coefficient	Coefficient	Coefficient	Coefficient
Indirect	0.127*	0.090***	0.018	0.022**
	(0.072)	(0.030)	(0.023)	(0.009)
Direct	0.289***	0.226**	0.332***	0.322***
	(0.099)	(0.102)	(0.127)	(0.124)

Where Bootstrap replications = 1,000. 95% CI are bias-corrected. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

emotional support mechanism (Li, 2025a; Margolis and Myrskylä, 2015).

4.5 Heterogeneity analyses

The functions and mechanisms of intergenerational support often vary across family contexts. Existing studies have shown that both the capacity of parents to provide support and the needs of adult children differ across families (Schaffnit and Sear, 2017b). Therefore, in the subsequent analysis, this study introduces urban–rural family patterns to conduct heterogeneity tests. Table 10 (Models 4–12) reports the regression results for each subgroup. These subgroup analyses reveal significant differences in the effects of different types of parental support on fertility intentions across family contexts. While emotional and caring support generally promotes fertility intentions, their relative importance varies substantially depending on the family setting. To test for heterogeneity, we conducted subgroup regressions by family background, namely: (a) urban families, (b) rural-urban families, and (c) rural families. The results demonstrate clear context-specific differences in how parental support influences fertility intentions, reflecting the alignment between the type of support and the needs or constraints present in each context:

In urban families, emotional support emerged as the dominant factor encouraging fertility intentions. Emotional closeness with parents had the largest effect size (OR ~1.63 in the combined model, $p < 0.05$) and remained significant even when caring support was included. Parental caring support was also positively associated (OR ~1.61, $p < 0.10$), but its significance and magnitude were lower than those of emotional support. This suggests that in urban settings—where material living conditions are better and formal childcare services are more accessible—emotional

encouragement and psychological reassurance from parents are the primary motivators of fertility decisions (Tanskanen and Rotkirch, 2014). Urban couples are more likely to take financial stability and childcare availability for granted, making emotional solidarity with parents the key factor influencing their confidence to embark on parenthood. This pattern is consistent with findings from high-welfare European societies, where family emotional bonds, rather than grandparental childcare, are crucial for fertility decisions when external support systems are strong (Tanskanen and Rotkirch, 2014). In short, urban adult children benefit most from the sense that their parents provide emotional backing, which offers moral reassurance in the face of modern competitive environments.

In rural–urban migrant families, parental caring support was the only type of support with a significant positive effect on fertility intentions (OR ~1.43, $p < 0.05$), whereas emotional support was not significant. This may reflect the fact that migrant families often face gaps in childcare resources, making parental caregiving a critical source of support (Qi, 2018). Due to the hukou (household registration) system, migrant families in cities frequently lack access to local public services and encounter institutional barriers in childcare. For them, the availability of parents or in-laws who relocate to the city to provide childcare often determines whether they have another child. This is consistent with the “crisis compensation hypothesis” (Chan, 2018), in which families mobilize older generations to compensate for the absence of formal support. It is common to observe rural grandparents moving to urban areas to care for grandchildren, forming an “elderly floating population” that fills childcare gaps for migrant working parents (Silverstein and Zuo, 2021). Our results reflect this reality: tangible caregiving support significantly increases migrant families’ willingness to have children. Emotional support, by contrast, may be less accessible or less effective for migrants, as long-term separation weakens emotional ties, or immediate needs such as childcare and financial

TABLE 10 Heterogeneity of parental support effects by family context.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
ES	1.812**		1.726**	1.187		1.168	1.506**		1.492**
	(0.432)		(0.409)	(0.157)		(0.153)	(0.256)		(0.256)
CS		1.613*	1.549*		1.433**	1.421**		1.187	1.153
		(0.403)	(0.398)		(0.247)	(0.245)		(0.250)	(0.242)
Age	1.040	1.074	1.013	1.341*	1.383**	1.356*	1.800***	1.764***	1.787***
	(0.319)	(0.318)	(0.307)	(0.220)	(0.227)	(0.222)	(0.300)	(0.293)	(0.299)
Age2	0.961	0.922	1.001	0.683	0.648*	0.667	0.425***	0.436***	0.428***
	(0.460)	(0.422)	(0.469)	(0.179)	(0.169)	(0.174)	(0.111)	(0.114)	(0.113)
Gender	2.103	1.807	2.065	2.219***	1.991**	2.021**	1.898	1.861	1.862
	(1.000)	(0.840)	(0.981)	(0.640)	(0.582)	(0.591)	(0.754)	(0.733)	(0.737)
Urban	1.272	1.546	1.386	3.047***	3.402***	3.227***	2.947**	3.103**	3.005**
	(0.795)	(0.959)	(0.868)	(1.033)	(1.155)	(1.103)	(1.437)	(1.522)	(1.475)
Health	0.498	0.483	0.473	0.724	0.705	0.678	1.103	1.134	1.081
	(0.413)	(0.393)	(0.392)	(0.332)	(0.323)	(0.313)	(0.541)	(0.558)	(0.531)
Medium	0.853	0.879	0.873	0.954	0.956	0.958	0.950	0.960	0.952
	(0.091)	(0.094)	(0.093)	(0.049)	(0.049)	(0.049)	(0.056)	(0.056)	(0.056)
Eduy	5.441***	4.209**	4.292**	3.520***	3.158***	3.184***	2.386***	2.138**	2.273***
	(3.413)	(2.678)	(2.730)	(1.025)	(0.924)	(0.931)	(0.741)	(0.668)	(0.720)
Child_num	3.653**	3.133**	3.686**	1.757	1.884*	1.904*	0.973	0.918	0.967
	(2.150)	(1.818)	(2.175)	(0.629)	(0.682)	(0.689)	(0.502)	(0.470)	(0.500)
Employer	0.475	0.540	0.505	2.040**	2.134**	2.121**	1.822	1.847	1.869
	(0.325)	(0.370)	(0.345)	(0.671)	(0.706)	(0.703)	(1.917)	(1.929)	(1.970)
Migrant	0.912	0.824	0.823	0.756	0.704**	0.723*	1.053	1.049	1.053
	(0.241)	(0.247)	(0.246)	(0.129)	(0.126)	(0.128)	(0.106)	(0.108)	(0.106)
Income	547	547	547	2,150	2,150	2,150	1,566	1,564	1,564
	0.175	0.164	0.191	0.148	0.153	0.156	0.156	0.140	0.157

Where Odds Ratios (ORs) are reported with standard errors in parentheses; **p* < 0.1, ***p* < 0.05, ****p* < 0.01.

help are more pressing. Thus, for migrant families under resource constraints, functional caregiving support is paramount, while emotional support is secondary. This context underscores the adaptive strategies of these families: when facing institutional exclusion (limited childcare, lack of subsidies), they rely heavily on family-based functional solidarity to enable childbearing (Liu et al., 2024a).

In rural families, emotional support again showed a significant positive effect (OR ~1.51, *p* < 0.05) on fertility intentions, whereas caring support was not significant. This result may appear counterintuitive given the strong tradition of family assistance in rural China. However, this likely reflects the principle of diminishing marginal utility. In rural communities, it is customary for parents to assist with childcare, often through co-residence in multi-generational households. Because such caregiving is widespread, its marginal effect on fertility motivation is diluted (Gibson and Mace, 2005; Silverstein et al., 2006a). Emotional support, however, varies more in quality and thus remains a

decisive factor. Rural society is strongly shaped by the Confucian ethic of filial piety and lineage continuity. Adult children who feel strong emotional solidarity with their parents—a sense of duty, familial harmony, and shared purpose—are more inclined to have children to continue the family line (Whyte, 2004; Yeh and Bedford, 2003; Zhang and Goza, 2006). In contrast, since nearly all rural parents provide some childcare, marginal differences in the amount of help received do not substantially alter fertility plans. Our findings support the view that when informal support is already extensive, its marginal impact plateaus, leaving cultural and psychological factors as the primary drivers of fertility intentions.

The heterogeneity analysis further demonstrates the spatial and contextual variation in the effectiveness of parental support, highlighting the dynamic alignment between adult children’s needs and parental support capabilities. The type of support with the strongest effect depends on what adult children lack or prioritize. In well-resourced contexts, emotional support is more influential, whereas in resource-constrained or uncertain

environments, practical help that reduces direct costs is more critical. This finding also resonates with international evidence that the role of kin support in fertility varies across societal contexts, such as between Western and East Asian family systems (Cai et al., 2024). Our study contributes further evidence from China, showing how urbanization and migration create divergent support needs within a single country.

This study provides critical insights into the role of parental support in shaping fertility intentions, with a particular focus on emotional and caregiving dimensions. In the context of structurally vulnerable populations such as rural women and rural-to-urban migrant families, the absence of formal childcare and psychosocial services magnifies the importance of informal family-based support systems. Our findings resonate with growing calls to recognize unpaid caregiving and emotional labor as essential components of resilience-building strategies in rural communities (Agarwal, 2018; FAO, 2023). Instead of relying solely on financial incentives, policies should prioritize caregiving capacity and emotional engagement to strengthen reproductive autonomy, especially among rural women who face intersecting disadvantages in land access, mobility, and caregiving responsibilities.

Countries experiencing rapid aging and sustained low fertility (e.g., China, Japan, and Spain) could benefit from policy innovations that enhance informal caregiving networks. These include flexible retirement provisions, rural-sensitive family leave policies, and the institutional recognition of caregiving labor within family systems. Such measures would ensure that older generations can continue to meaningfully participate in child-rearing and contribute to the intergenerational fabric of rural families. Moreover, our approach aligns with the broader sustainability agenda promoted by the UN SDGs, particularly Goal 5 (gender equality) and Goal 2 (zero hunger), both of which underscore the empowerment of rural women as pivotal to social and demographic resilience (Chaturvedi et al., 2025; Sanyour and Chaturvedi, 2025). Recognizing the caregiving economy and intergenerational support into rural development policies can promote more inclusive and sustainable fertility pathways. Specifically, flexible retirement systems that expand the availability of older caregivers (Harper and Hamblin, 2014), rural-sensitive family leave policies tailored to mobile and under-resourced households (Riley, 1997), and community-based childcare models that coordinate informal support networks (Knijn and Kremer, 1997). These measures align with broader strategies to reduce gendered care burdens and enhance rural women's reproductive agency.

Although this study identifies statistically robust associations between parental support and fertility intentions, potential endogeneity must be considered. Reverse causality is possible, as adult children with stronger childbearing desires may actively seek more support from parents. Likewise, omitted variables (family culture, personality traits, or past life-course experiences) may simultaneously shape both parental involvement and fertility preferences. While our cross-sectional logistic and mediation models control for a range of sociodemographic covariates, they cannot fully rule out such biases. Therefore, findings should be interpreted as associations rather than causal claims. Future research using longitudinal or quasi-experimental designs

could more rigorously test the directionality and robustness of these relationships.

5 Conclusions

This study highlights the significant role of parental support in shaping adult children's fertility intentions, with a multidimensional focus on emotional, caregiving, and financial aspects. Emotional support was found to influence fertility intentions primarily through psychological pathways by reducing depression symptoms and enhancing subjective wellbeing, with wellbeing serving as a key mediator. These results suggest that non-material resources such as emotional warmth, encouragement, and intergenerational trust are essential for reproductive decision-making, particularly in societies where material needs are already met but psychosocial vulnerabilities remain. Caring support, in contrast, is especially critical in settings with limited access to formal childcare, such as in rural-to-urban migrant families. The analysis further reveals that the impact of parental support is context-dependent: emotional support exerts greater influence in urban families, while caregiving support is more salient in migrant households. These results extend the theory of intergenerational solidarity by underscoring the importance of aligning specific types of support with the unique constraints and priorities of each family configuration.

The findings of this study suggest that delayed retirement policies may unintentionally constrain the caregiving availability of older parents. A shift toward financial transfers alone is inadequate for boosting fertility intentions, as it overlooks the relational and participatory dimensions of intergenerational care. From a policy perspective, promoting fertility in low-fertility societies requires an integrated approach that supports caregiving and emotional engagement. Recommended measures include flexible retirement systems, parental involvement incentives, and community-based childcare tailored to rural and mobile populations. Ultimately, a comprehensive framework that bridges formal services and informal family-based support is essential for sustaining reproductive autonomy and strengthening rural family resilience. From a policy perspective, promoting fertility in low-fertility societies requires an integrated approach that supports caregiving and emotional engagement.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the [patients/participants OR patients/participants legal guardian/next

of kin] was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

RF: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. YT: Formal analysis, Investigation, Resources, Validation, Writing – review & editing. DH: Data curation, Investigation, Supervision, Visualization, Writing – review & editing.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships

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