

## ORIGINAL RESEARCH ARTICLE

# The influence of cultural beliefs on family planning adoption: Evidence from a field survey in China

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Qiaojuan Shan<sup>1</sup> and Yongqing Wei<sup>2\*</sup>

School of Multimedia Technology and Communication, Universiti Utara Malaysia<sup>1</sup>; Arts College of WuYi University, WuYi University, No. 358, Baihua Road, Fujian Province, Wuyishan City, 354300, China<sup>2</sup>

\*For Correspondence: Email: [Weiyongqing2025@hotmail.com](mailto:Weiyongqing2025@hotmail.com)

## Abstract

Cultural beliefs continue to play a critical role in shaping reproductive behavior in China, even as the country undergoes rapid social and economic transformation. This study examines the influence of key cultural norms—such as son preference, traditional gender roles, filial piety, and attitudes toward contraception—on the adoption of modern family planning methods. Drawing on data from a cross-sectional field survey of married individuals aged 18–49 across selected provinces, the study employs a quantitative research design using structured questionnaires and multi-stage sampling. Composite indices of cultural beliefs were constructed using Likert-scale items, and logistic regression models were used to assess their predictive power on contraceptive use, while controlling for socio-demographic characteristics. The results indicate that stronger adherence to traditional cultural beliefs significantly reduces the likelihood of adopting modern contraceptive methods, with notable variation across education levels and urban–rural settings. These findings highlight the need for culturally sensitive family planning strategies that address underlying social norms in addition to improving service availability. The study contributes to policy debates on demographic change in China by emphasizing the intersection of culture, gender, and reproductive health behavior. (*Afr J Reprod Health* 2025; 29 [12s]: 104-114).

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**Keywords:** Family planning adoption, Gender norms, Filial piety, Reproductive behavior, China

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## Résumé

Les croyances culturelles continuent de jouer un rôle essentiel dans la formation des comportements reproductifs en Chine, et ce malgré la transformation sociale et économique rapide que connaît le pays. Cette étude examine l'influence de normes culturelles clés — telles que la préférence pour les fils, les rôles de genre traditionnels, la piété filiale et les attitudes envers la contraception — sur l'adoption de méthodes modernes de planification familiale. S'appuyant sur les données d'une enquête de terrain transversale menée auprès de personnes mariées âgées de 18 à 49 ans dans plusieurs provinces sélectionnées, l'étude utilise un plan de recherche quantitatif avec des questionnaires structurés et un échantillonnage à plusieurs degrés. Des indices composites des croyances culturelles ont été construits à l'aide d'items d'échelle de Likert, et des modèles de régression logistique ont été utilisés pour évaluer leur pouvoir prédictif sur l'utilisation de la contraception, tout en contrôlant les caractéristiques sociodémographiques. Les résultats indiquent qu'une adhésion plus forte aux croyances culturelles traditionnelles réduit significativement la probabilité d'adopter des méthodes contraceptives modernes, avec des variations notables selon les niveaux d'éducation et les contextes urbains-ruraux. Ces résultats soulignent la nécessité de stratégies de planification familiale culturellement adaptées qui prennent en compte les normes sociales sous-jacentes, en plus d'améliorer la disponibilité des services. L'étude contribue aux débats politiques sur les changements démographiques en Chine en mettant en lumière l'intersection entre la culture, le genre et les comportements en matière de santé reproductive. (*Afr J Reprod Health* 2025; 29 [12s]: 104-114).

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**Mots-clés:** Doption de la planification familiale, Normes de genre, Piété filiale, Comportement reproductif, China

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## Introduction

China's demographic landscape has undergone a profound transformation over the past four decades. The shift from the one-child policy in 1979 to the subsequent two-child (2016) and three-child (2021) reforms marks a strategic pivot from strict fertility

control toward policies aimed at countering population ageing and declining fertility<sup>1</sup>. Despite these policy transitions and the expansion of reproductive health services, the adoption of modern family planning methods remains uneven across regions and social groups. While modern contraceptive prevalence is high on paper, the types

of methods used, levels of consistency, and decision-making autonomy vary significantly by socio-economic, cultural, and geographic context<sup>2</sup>

This uneven adoption suggests that structural availability alone cannot fully explain contraceptive behaviour. Scholars increasingly argue that deep-seated cultural beliefs—such as son preference, patriarchal gender norms, expectations of filial piety, and community narratives surrounding contraception—continue to shape reproductive decisions even within rapidly modernizing societies<sup>3</sup>. These norms influence fertility ideals, perceptions of contraceptive safety, and intra-household power dynamics that determine a woman's ability to negotiate contraceptive use<sup>4</sup>. In China, where Confucian traditions remain deeply rooted, such cultural factors are likely to influence not only reproductive intentions but also the willingness to adopt modern contraceptive methods.

However, existing demographic research in China has extensively examined economic, policy-driven, and structural determinants of fertility behaviour, while the independent effect of cultural beliefs remains insufficiently understood. Much of the literature relies on qualitative interviews or regional case studies, which, while insightful, often lack the quantitative rigour necessary to isolate the statistical contribution of cultural norms<sup>5</sup>. Furthermore, China's vast regional and cultural diversity raises critical questions about how these beliefs operate differently across various socio-economic and geographic contexts. These limitations hinder the development of policies that effectively address deeper sociocultural barriers to contraceptive use.

Although China has recently expanded digital reproductive healthcare through mobile health applications and telemedicine systems that improve access in rural areas<sup>28</sup>, evidence from broader South Asian contexts shows that technological progress alone does not overcome cultural or gendered constraints on reproductive decision-making<sup>29</sup>. Together, these findings underscore that structural improvements must be combined with culturally sensitive interventions to effectively enhance family planning adoption. Several specific research gaps persist. First, most studies rely heavily on qualitative methods or descriptive statistics, offering limited ability to

isolate the causal impact of cultural beliefs, with few employing systematic quantitative indices to measure them<sup>6</sup>. Second, much of the available research focuses on single provinces or specific demographic groups, limiting the generalizability of findings across China's diverse landscape. Third, there has been limited attention given to moderating factors—such as education or urban–rural residence—that may shape how cultural beliefs influence contraceptive behaviour.

To address these gaps, this study is guided by the following research questions:

1. To what extent do cultural beliefs influence the adoption of modern family planning methods among married individuals in China?
2. Which specific cultural norms—such as son preference, gender role attitudes, filial piety, or attitudes toward contraception—most strongly predict contraceptive behaviour?
3. How do socio-demographic characteristics (education, income, urban–rural residence) moderate the relationship between cultural beliefs and family planning adoption?

This research holds significant academic and policy relevance. Academically, it advances the literature by providing robust quantitative evidence on how cultural beliefs shape contraceptive behaviour in a non-Western context. While prior studies emphasize the importance of culture, few have quantified its effects using rigorous, multidimensional indices<sup>7</sup>.

This study addresses this shortcoming by integrating culturally specific constructs into statistical models that control for socio-economic factors. For policy, as China's fertility rates remain below replacement level, policymakers require a nuanced understanding of non-economic barriers to reproductive decision-making. The findings can inform the design of culturally attuned family planning programs, particularly in rural and conservative regions where resistance persists. Moreover, the study highlights how traditional gender norms and filial obligations shape reproductive autonomy—an insight crucial for developing equitable reproductive health services. Methodologically, the research demonstrates an approach for operationalizing cultural beliefs quantitatively, offering a template for similar studies in other contexts.

## Literature review

### Theoretical perspectives

The relationship between cultural beliefs and reproductive behavior is informed by several theoretical frameworks. The economic theory of fertility views fertility decisions as outcomes of rational calculations where families weigh the costs and benefits of childbearing<sup>8</sup>. However, scholars note that cultural norms modify the perceived value of children, particularly in societies where lineage continuity or son preference shapes reproductive preferences<sup>9</sup>. Thus, culture reshapes the decision-making calculus assumed in classical economic models.

Sociocultural and ideational change theories, notably those associated with the Second Demographic Transition, emphasize the role of values, norms, and attitudes in fertility behavior<sup>10</sup>. These theories argue that even during rapid modernization, cultural beliefs evolve more slowly than structural conditions and continue to influence reproductive choices<sup>11</sup>. Intergenerational transmission of norms and symbolic meanings attached to fertility remain powerful determinants of reproductive behavior.

The gender and power framework offers another important lens for understanding family planning dynamics. Scholars such as Nazrul<sup>12</sup> and Khan<sup>13</sup> argue that in patriarchal societies, reproductive choices reflect gendered power relations within households. Women in male-dominated settings often have limited autonomy in contraceptive decision-making, and cultural norms may discourage women's agency or normalize male control over reproductive decisions.

The diffusion of innovation theory also provides insights into how modern contraceptive methods spread through communities<sup>14</sup>. Adoption depends on compatibility with existing norms, the perceived legitimacy of early adopters, and community-level social networks. When contraceptive technologies conflict with cultural beliefs about fertility, purity, or gender roles, their diffusion is significantly hindered<sup>15</sup>. Together, these theoretical perspectives highlight culture as a central—rather than peripheral—determinant of family planning adoption in contexts such as China.

### Global evidence

Global research consistently shows that cultural beliefs significantly shape patterns of family planning adoption. In South Asia, strong evidence links son preference to fertility and contraceptive choices. Studies from India, Bangladesh, and Nepal show that couples continue childbearing until achieving a desired number of sons, thereby delaying or avoiding modern contraceptive adoption<sup>16</sup>. These patterns persist across socio-economic strata, illustrating the resilience of cultural norms despite modernization.

In Sub-Saharan Africa, patriarchal norms, religious beliefs, and community expectations strongly influence contraceptive use. Research in Nigeria, Ethiopia, and Kenya indicates that women living in highly patriarchal communities are significantly less likely to use modern contraceptives due to limited decision-making autonomy and fear of social disapproval<sup>17</sup>. Cultural narratives framing children as blessings or as sources of social security further reduce uptake<sup>18</sup>. Additionally, fatalistic beliefs regarding predetermined fertility outcomes reduce perceived need for contraception.

In the Middle East, studies highlight the role of religious interpretation and gender norms in shaping contraceptive choices. Research from Egypt and Jordan demonstrates that conservative interpretations of religious values and expectations surrounding women's roles correlate with lower rates of modern method adoption<sup>19</sup>.

Latin American evidence also supports the significance of cultural beliefs. Indigenous communities in Bolivia and Guatemala often prefer natural methods due to cultural norms surrounding bodily integrity and gendered expectations of sexual behavior<sup>20</sup>. Even where contraceptive prevalence is high, cultural norms continue to shape method choice.

Taken together, global evidence shows that cultural beliefs—whether centered on gender norms, religion, kinship, or morality—play a decisive role in determining levels and patterns of family planning adoption. This underscores the importance of studying how cultural factors influence contraceptive behavior in China.

### **China-specific evidence**

China presents a unique intersection of long-standing cultural traditions and decades of state-directed fertility regulation. Extensive research documents the persistence of *son preference*, rooted in Confucian ideals of patrilineal inheritance and elder support<sup>21</sup>. Studies in provinces such as Anhui, Gansu, and Henan show that families without sons are significantly less likely to adopt long-term contraceptive methods, preferring to continue childbearing until a male child is born<sup>22</sup>.

*Cultural expectations surrounding filial piety* also play a significant role. Research demonstrates that parental pressure—particularly from mothers-in-law—substantially influences reproductive decisions. Couples often feel obligated to produce offspring, especially sons, to fulfill familial duties, which can reduce contraceptive uptake.

Gender role attitudes are another influential factor. Studies indicate that traditional beliefs emphasizing male authority and women's domestic responsibilities reduce women's autonomy in reproductive decision-making and lower modern contraceptive use<sup>23</sup>. This effect is more pronounced in rural or less-developed regions where patriarchal norms remain strong.

Cultural perceptions of contraception itself also matter. Misconceptions about health risks, moral implications, or interference with natural bodily processes discourage the use of modern contraceptives, particularly among older women and in rural communities. These perceptions often stem from intergenerational narratives or limited access to accurate information.

Although China's family planning system historically relied on administrative enforcement, compliance was mediated by cultural norms. Households with strong son preference were more likely to resist contraceptive requirements or engage in sex-selective practices. In the current era of declining fertility, cultural beliefs continue to shape reproductive intentions, with many couples citing cultural expectations, economic pressure, and gender dynamics as key considerations.

Overall, China-specific evidence shows that cultural beliefs remain highly influential and must be examined using rigorous quantitative methods to clarify their impact on family planning adoption.

### **Conceptualizing cultural beliefs**

Cultural beliefs are defined as shared understandings, values, and expectations that shape individuals' perceptions and decisions regarding fertility and family planning. They are socially transmitted and embedded within community norms, family structures, and intergenerational interactions. Conceptually, cultural beliefs operate at both individual and collective levels, influencing personal attitudes and shaping broader community expectations.

For this study, cultural beliefs are categorized into four dimensions. The first is *son preference*, which reflects long-standing patriarchal values emphasizing the superior social, economic, and symbolic value of sons<sup>24</sup>. This belief significantly influences reproductive goals, creating pressure for continued childbearing.

The second dimension is *gender role attitudes*. Traditional gender norms—such as the belief that men should control major household decisions or that women's primary duty is motherhood—limit women's autonomy in contraceptive choices<sup>25</sup>. The third dimension involves *filial piety and lineage continuation*. Confucian norms emphasizing respect for elders and the obligation to produce offspring, particularly sons, have been shown to influence reproductive behavior in China.

The fourth dimension concerns *attitudes toward contraception*, including beliefs about the morality, safety, or naturalness of modern methods. Misconceptions or moral concerns may discourage contraceptive use despite the availability of services. By conceptualizing cultural beliefs across these dimensions, the study constructs composite indices that quantitatively capture the multidimensional nature of cultural influences on family planning adoption.

### **Methods**

This study was conducted under the academic oversight of the Arts College of WuYi University, WuYi University, which served as the institutional base for the research. A cross-sectional quantitative survey design was employed to investigate how cultural beliefs influence the adoption of modern

family planning methods among married or cohabiting individuals aged 18–49 years. To ensure representation across China's diverse socio-economic and cultural landscape, a multi-stage stratified sampling strategy was used. First, three provinces from the eastern, central, and western regions were purposively selected to capture regional cultural diversity. Within each selected province, two counties were randomly chosen, followed by a random selection of villages in rural areas and neighborhood committees in urban areas. A complete household listing was then compiled with assistance from local administrative units, and systematic random sampling was used to select eligible households. In cases where more than one eligible respondent resided in the same household, the Kish grid method was applied to randomly select one participant.

Sample size was determined using the standard formula for cross-sectional studies, with a 95% confidence level, an assumed prevalence of 50% for modern contraceptive use (to ensure maximum sample size), and a margin of error of 5%, yielding a minimum requirement of 384 respondents. To enhance representativeness and improve statistical power for subgroup analysis, the final sample was expanded to 1,027 completed interviews. Data were collected through face-to-face interviews conducted by trained enumerators over a four-week period. Interviews were carried out in private settings to promote confidentiality and reduce social desirability bias. The structured questionnaire included items measuring cultural beliefs—specifically son preference, gender role attitudes, filial piety and lineage expectations, and attitudes toward modern contraception—along with socio-demographic characteristics and reproductive behavior.

Cultural beliefs were measured using multiple five-point Likert-scale items ranging from strong disagreement to strong agreement. For each cultural dimension, composite indices were created by averaging the responses to items belonging to that construct. Reliability tests using Cronbach's alpha confirmed internal consistency for all indices, each exceeding the recommended threshold of 0.70. Construct validity was further confirmed through exploratory factor analysis, which demonstrated that items loaded appropriately onto their intended cultural dimensions. Modern contraceptive use was measured as a binary variable indicating whether

respondents were currently using any modern method at the time of the survey.

All participants were informed about the purpose of the study, participation was voluntary, and verbal informed consent was obtained prior to the interview. Respondents were assured of confidentiality and were informed of their right to withdraw at any time without consequences. Data analysis was conducted using STATA 16. Descriptive statistics were used to summarize demographic variables and cultural belief indices. Bivariate relationships between cultural beliefs and contraceptive use were examined using chi-square tests. To assess the independent effect of cultural beliefs on modern method adoption, binary logistic regression models were estimated in three stages: a baseline model with socio-demographic controls, a second model incorporating cultural belief indices, and a final model testing interaction effects such as education, cultural beliefs and urban residence, gender norms. Model diagnostics—including checks for multicollinearity, goodness-of-fit tests, and pseudo-R<sup>2</sup> values—were performed to ensure robustness of the findings.

### ***Ethical consideration***

Ethical approval for the study was obtained through an official institutional approval letter issued by WuYi University, as the research involved minimal risk and did not include sensitive or invasive procedures.

## **Results**

### ***Descriptive statistics***

A total of 1,027 respondents participated in the survey, consisting of 524 women (51.0%) and 503 men (49.0%). The mean age was 34.7 years (SD = 7.4), with 61% of respondents between 25 and 39 years. In terms of education, 18% had primary education or less, 42% completed secondary education, and 40% had tertiary education, reflecting China's rising education levels. Approximately 58% of respondents resided in rural areas, consistent with the sampling strategy intended to capture variation in cultural norms and family planning behavior. The average number of children per respondent was 1.42, with 38% having one child, 44% having two children, and 18% having three or more.

Regarding family planning behavior, 68% of respondents reported currently using a modern contraceptive method, while 32% used traditional methods or none. Among modern method users, condoms (36%), intrauterine devices (IUDs) (27%), and oral contraceptives (12%) were the most commonly used. Rural residents had lower modern contraceptive prevalence (61%) compared to urban residents (76%).

Composite indices of cultural beliefs showed meaningful variation across respondents. The Son Preference Index had a mean of 3.12 (SD = 0.79), with rural respondents scoring significantly higher (mean = 3.38) than urban respondents (mean = 2.81;  $p < .001$ ). The Gender Norms Index averaged 3.41 (SD = 0.84), indicating moderate endorsement of traditional gender roles. The Filial Piety/Lineage Index averaged 3.67 (SD = 0.72), reflecting persistent adherence to traditional familial obligations. Finally, the Contraceptive Attitude Index averaged 2.94 (SD = 0.88), suggesting mixed perceptions of modern contraceptives, with rural respondents generally holding more negative views. These descriptive findings provide a foundation for exploring how cultural beliefs influence contraceptive adoption across socio-demographic groups.

### ***Bivariate findings***

Bivariate analyses revealed significant associations between cultural beliefs and modern family planning adoption. Respondents were categorized into “low,” “medium,” and “high” groups based on tertiles of belief index scores. Chi-square tests indicated that modern contraceptive use was significantly lower among those with high son preference compared to those with low son preference (57% vs. 74%,  $\chi^2 = 29.4$ ,  $p < .001$ ). This supports prior research suggesting that couples who strongly prefer sons may delay adopting modern methods to continue childbearing.

Traditional gender norms were also strongly associated with contraceptive adoption. Among respondents with high gender norm scores, only 59% reported using modern contraceptives, compared to 78% among those with low gender norm adherence ( $\chi^2 = 34.7$ ,  $p < .001$ ). A similar pattern emerged for filial piety and lineage beliefs: individuals with strong filial expectations showed lower modern contraceptive use (62%) compared to those with

weaker filial expectations (75%;  $\chi^2 = 21.3$ ,  $p < .001$ ). These findings align with prior qualitative evidence that obligations to elders shape reproductive decisions.

Attitudes toward contraception showed some of the strongest bivariate associations. Respondents with negative attitudes toward modern methods were significantly less likely to use them (52%) than those with positive attitudes (80%;  $\chi^2 = 57.8$ ,  $p < .001$ ).

Bivariate analysis also revealed demographic disparities. Urban residents had significantly higher modern method adoption than rural residents (76% vs. 61%,  $p < .001$ ), and tertiary-educated respondents reported higher adoption (82%) compared to those with primary education (54%,  $p < .001$ ). Collectively, these patterns suggest strong relationships between cultural beliefs, socio-demographic factors, and contraceptive behavior, warranting multivariate investigation. Table 1

### ***Regression results***

To examine the independent influence of cultural beliefs on modern contraceptive use, binary logistic regression models were estimated. Model 1 included only socio-demographic controls; Model 2 added the four cultural belief indices; and Model 3 included interaction terms.

#### ***Model 1: Socio-demographic controls***

In the baseline model, education, urban residence, and number of living children emerged as significant predictors. Higher education was associated with increased odds of using modern contraception (OR = 1.58,  $p < .001$ ). Urban residents had 1.74 times higher odds of adoption than rural residents ( $p < .001$ ). Having two or more children also increased the likelihood of modern method use (OR = 1.48,  $p < .01$ ), consistent with research showing that individuals who have achieved desired family size are more likely to adopt stable contraceptive practices.

#### ***Model 2: Adding cultural beliefs***

When cultural belief indices were added, all four emerged as significant predictors:

**Son Preference Index:** Higher son preference significantly reduced the odds of adopting modern methods (OR = 0.73,  $p < .01$ ).

**Table 1:** Prevalence of modern contraceptive use by residence and education

Factor	Group	Modern method uses (%)	$\chi^2$ (df)	p-value
Place of residence	Urban	76.0	—	<0.001
	Rural	61.0		
Education level	Tertiary education	82.0	—	<0.001
	Primary education	54.0		

- **Gender norms index:** Traditional gender norms had a strong negative association (OR = 0.69,  $p < .001$ ).
- **Filial piety/lineage index:** Stronger filial expectations decreased the likelihood of modern method use (OR = 0.81,  $p < .05$ ).
- **Contraceptive attitude index:** Negative attitudes toward contraception had the strongest effect (OR = 0.62,  $p < .001$ ).

The inclusion of cultural variables substantially improved model fit ( $\Delta$ pseudo- $R^2 = .08$ ), indicating that cultural beliefs account for meaningful variance in contraceptive behavior.

**Model 3: Interaction effects**

Interaction terms revealed moderating roles for education and urban–rural residence. The interaction between education  $\times$  son preference was significant (OR = 1.21,  $p < .05$ ), suggesting that higher education attenuates the negative effect of son preference on contraceptive adoption. Similarly, urban  $\times$  gender norms showed a positive interaction (OR = 1.27,  $p < .05$ ), indicating that urban contexts weaken the influence of patriarchal norms on decision-making.

In contrast, the interaction between education  $\times$  contraceptive attitudes were not significant, implying that negative perceptions of modern methods persist even among educated individuals. Overall, regression results confirm that cultural beliefs significantly shape contraceptive behavior, independent of socio-demographic factors. Table 2

**Interaction effects and subgroup analyses**

To explore differential effects across demographic groups, additional subgroup analyses were conducted for rural vs. urban residents and men vs. women.

**Urban–rural differences**

Cultural beliefs had stronger effects in rural settings. Among rural residents, high traditional gender

**Table 2:** Logistic regression predicting modern contraceptive use (Models 1–2)

Predictor	OR	p-value
<b>Model 1: socio-demographic controls</b>		
Higher education (vs lower)	1.58	<0.001
Urban residence (vs rural)	1.74	<0.001
Two or more children (vs fewer)	1.48	<0.01
<b>Model 2: adding cultural beliefs</b>		
Son Preference Index	0.73	<0.01
Gender Norms Index	0.69	<0.001
Filial Piety / Lineage Index	0.81	<0.05
Contraceptive Attitude Index	0.62	<0.001

Note: Model 2 improves model fit by  $\Delta$ pseudo- $R^2 = 0.08$  compared with Model 1.

norms reduced the odds of modern contraceptive adoption by nearly half (OR = 0.52,  $p < .001$ ), compared to a smaller reduction among urban residents (OR = 0.81,  $p < .05$ ). Similarly, son preference had a more pronounced influence in rural areas (OR = 0.68,  $p < .01$ ) compared to urban areas (OR = 0.86,  $p = .09$ ). These findings suggest that cultural norms are more deeply internalized and rigidly enforced in rural communities, consistent with previous research.

**Gender differences**

Analyses revealed significant gender disparities in how cultural beliefs influence contraceptive behavior. For women, traditional gender norms strongly reduced modern method adoption (OR = 0.61,  $p < .001$ ), reflecting women’s limited autonomy in male-dominated households. For men, however, gender norms had a weaker effect (OR = 0.89,  $p = .12$ ). Filial piety also had a stronger negative effect for women (OR = 0.74,  $p < .05$ ), whereas men’s contraceptive decisions appeared less constrained by filial expectations.

**Regional differences**

Respondents in western provinces showed the strongest effects of cultural beliefs on contraceptive

behavior, particularly regarding son preference and filial piety. The weaker effects in eastern provinces suggest that modernization and economic development may dilute the influence of traditional norms.

These subgroup results highlight the importance of contextualizing family planning policies according to local cultural conditions.

### **Robustness checks**

Several robustness checks were conducted to ensure the stability of results. First, alternative codings of the dependent variable—such as distinguishing long-term methods (IUDs, implants) from short-term methods (condoms, pills)—yielded consistent findings, with cultural beliefs exerting similar directional effects. Second, excluding respondents with three or more children (who may have atypical fertility motivations) did not significantly alter coefficient estimates. Third, re-estimating models using probit regression produced nearly identical marginal effects, confirming that the results are not model-dependent. Fourth, multicollinearity diagnostics showed all VIF values below 2.5, indicating no problematic overlap among predictors. Lastly, factor structures of the cultural belief indices remained stable across rural and urban sub-samples, supporting the construct validity of key measures. These checks confirm that the main findings are robust, reliable, and not driven by model specification or sample composition.

### **Discussion**

This study demonstrates that cultural beliefs continue to exert a strong influence on modern family planning adoption in China, even within a rapidly modernizing socio-economic environment. The findings corroborate global evidence that cultural values—particularly son preference and patriarchal norms—remain deeply embedded and shape reproductive decisions. By developing and applying multidimensional cultural indices, this study provides quantitative confirmation of mechanisms that previous qualitative research identified but did not systematically measure.

The strong influence of gender norms highlights the importance of intra-household bargaining dynamics and the constraints placed on women's agency in contraceptive decisions.

Filial obligations and lineage expectations reflect enduring Confucian norms that continue to influence family size ideals. Negative attitudes toward contraception—often rooted in misconceptions or intergenerational narratives—represent a critical barrier even in settings where contraceptive services are widely available.

The moderating effects of education and urban residence illustrate how modernization can weaken but not eliminate cultural constraints. This underscores the need for culturally tailored interventions that address not only informational gaps but also the social norms that shape reproductive autonomy.

### **Comparison with literature**

The study's findings are broadly consistent with global research demonstrating that cultural beliefs shape reproductive behavior across diverse settings. The strong negative effect of son preference on contraceptive adoption aligns with studies from South Asia, which show that couples with strong preferences for male offspring tend to postpone contraceptive use until achieving a desired number of sons<sup>26,27</sup>. Similar to evidence from India and Bangladesh, this study finds that son preference remains persistent despite growing economic development, suggesting that cultural norms evolve more slowly than structural conditions.

The results concerning gender norms also echo findings from Sub-Saharan Africa and Middle Eastern contexts, where patriarchal attitudes have been shown to restrict women's autonomy in contraceptive decision-making. In line with gender and power framework, this study demonstrates that Chinese women who endorse traditional gender norms—or live in households dominated by such norms—are less likely to use modern contraceptives. This reinforces the idea that household power dynamics are crucial in shaping reproductive behaviors.

China-specific literature similarly supports the study's conclusions. Prior research on Confucian values has documented the influence of filial piety, lineage obligations, and parental expectations on fertility decisions. This study extends that work by quantitatively demonstrating that filial piety reduces modern method use even when socio-economic factors are controlled. Additionally, findings on contraceptive attitudes mirror earlier studies

reporting persistent misconceptions about modern methods, especially among older or rural populations.

Overall, this research confirms and extends previous studies by providing multivariate, index-based evidence on how different cultural constructs collectively and independently shape contraceptive adoption in China.

### ***Interpretation and mechanisms***

Several mechanisms may explain why cultural beliefs exert such strong effects on contraceptive adoption. First, cultural norms shape fertility preferences. Individuals with strong son preference or lineage expectations may perceive the need to continue childbearing until fulfilling these cultural obligations, thereby reducing the likelihood of adopting modern contraception. Even when households have achieved their desired number of children, cultural norms may discourage permanent or long-term methods such as IUDs.

Second, gendered power dynamics within households play a central role. Traditional gender norms reinforce male authority in family decisions, including those related to reproduction. Women with restricted decision-making autonomy may be unable to negotiate contraceptive use or may defer to husbands' preferences. In such environments, modern contraceptives—especially those requiring negotiation such as condom use—become less accessible.

Third, social transmission of beliefs through families and communities reinforces cultural norms. Filial piety and family obligation norms are often communicated across generations, shaping expectations about ideal fertility and appropriate reproductive behavior. These intergenerational pressures may lead individuals to conform to traditional expectations, even when they personally recognize the practical benefits of contraception.

Fourth, misconceptions and moral concerns about contraception influence perceived risks. Negative attitudes—such as beliefs that contraception harms fertility or violates cultural values—create psychological barriers that diminish adoption. These beliefs are often resistant to change and can persist even among educated populations. Together, these mechanisms highlight how culture operates through cognitive, relational, and social channels to influence family planning behavior.

### ***Policy implications***

The findings have several important policy implications. First, family planning programs must move beyond improving physical access to contraceptives and address the cultural and social barriers that limit adoption. Interventions should incorporate culturally sensitive messaging that directly addresses misconceptions about contraceptive safety and aligns reproductive health information with local cultural values.

Second, gender-transformative interventions are needed. Programs that promote joint decision-making, challenge patriarchal norms, and enhance women's autonomy can strengthen contraceptive adoption. Community-based education targeting men may be particularly effective, given the gendered dynamics revealed in this study.

Third, strategies should be tailored to rural areas, where cultural norms remain stronger and contraceptive adoption is lower. Rural-focused campaigns may include community dialogues, engagement with local leaders, and integration of family planning counseling into rural health services.

Finally, interventions should incorporate intergenerational perspectives, recognizing that parental and elder influence shapes reproductive decisions. Programs that encourage respectful discussion between generations about family size and contraception may reduce pressure rooted in filial expectations.

By addressing cultural barriers alongside structural and informational gaps, policymakers can design more effective and equitable family planning programs.

### ***Limitations***

Several limitations should be acknowledged. First, the study's cross-sectional design limits its ability to establish causality; cultural beliefs and contraceptive behavior may influence each other bidirectionally. Longitudinal data would offer stronger causal inference. Second, cultural beliefs were self-reported and may be subject to social desirability bias, despite efforts to ensure confidentiality. Third, the sampling approach, although diverse, may not fully capture all ethnic or regional variations across China's vast cultural landscape. Fourth, the study

relies on composite indices that, while robust, may simplify complex cultural constructs. Finally, the focus on married individuals excludes unmarried sexually active populations, whose contraceptive behavior may follow different patterns.

### ***Future research directions***

Future research can build on this study in several ways. Longitudinal studies would help clarify causal pathways between cultural beliefs and contraceptive behavior, especially how beliefs evolve with life transitions such as marriage or childbirth. Qualitative research could complement these quantitative findings by exploring how individuals interpret cultural norms in everyday decision-making. Additionally, expanding research to include unmarried individuals, adolescents, and ethnic minority groups would provide a more comprehensive view of China's reproductive landscape. Future studies should also examine how rapid modernization, migration, and digital information exposure influence cultural beliefs related to family planning. Finally, testing culturally tailored interventions—such as community dialogues or targeted education programs—would help identify effective strategies for addressing the cultural barriers identified in this study.

### **Conclusion**

This study demonstrates that cultural beliefs—specifically son preference, traditional gender norms, filial piety, and negative attitudes toward contraception—significantly reduce the likelihood of adopting modern family planning methods in China. By constructing quantitative cultural indices and applying multivariate analysis, the research confirms that cultural norms remain powerful determinants of reproductive behavior, independent of socio-demographic factors. These findings indicate that China's family planning strategies must incorporate culturally informed approaches that address social norms alongside service provision, particularly for rural residents and women whose autonomy is most constrained. Overall, the study successfully meets its objectives by quantitatively demonstrating the pathways through which cultural beliefs shape contraceptive adoption across diverse Chinese contexts.

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