Perceived Reproductive Age Constraints Increase Women' s Fertility Intentions: Post-Print

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Abstract

In recent years, our country has fallen into the ranks of low-fertility nations, making it imperative to enhance the fertility intentions of women of childbearing age. This study integrates psychological reactance theory and lifespan control theory to investigate how women' s perception of age constraints on childbearing influences their fertility intentions and planned number of children. Study 1 employed a questionnaire methodology, revealing that women' s fertility intentions strengthen as they approach their perceived ideal childbearing age. Studies 2 and 3 utilized experimental methods, priming unmarried women (Study 2) and married women (Study 3) with a sense of temporal constraints regarding female childbearing age. The results demonstrated that temporal constraints on childbearing age can enhance unmarried women' s implicit attitudes toward children and married women's planned number of children. Study 2 further revealed that this enhancement effect was more pronounced for women with higher pre-test fertility intentions, and that setting the optimal childbearing age at 26 yielded greater enhancement than setting it at 32. The findings of this study indicate that a sense of fertility constraints can increase women' s fertility intentions. Creating an environment where women perceive constraints on the appropriate age for childbearing will help enhance the fertility intentions of women of childbearing age. It is not recommended to further relax population fertility quotas (such as completely lifting restrictions on the number of children) as a means to increase fertility rates, as this may instead lead to a further decline in fertility intentions among women of childbearing age.

Full Text

The Effect of Perceived Age Limits on Childbearing on Women' s Fertility Intentions

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Abstract

In recent years, China has fallen into the ranks of low-fertility countries, making it imperative to enhance the fertility intentions of women of childbearing age. This research integrates psychological reactance theory and the life-span theory of control to explore how women' s perception of age limits on childbearing influences their fertility intentions and planned number of children. Study 1, a questionnaire-based investigation, revealed that women who perceived themselves as closer to their ideal childbearing age reported stronger fertility intentions. Studies 2 and 3 employed experimental methods, priming unmarried women (Study 2) and married women (Study 3) with a sense of temporal constraints on female fertility. The results demonstrated that perceived time limits on childbearing can enhance unmarried women' s implicit attitudes toward children and increase married women's planned number of children. Study 2 further found that this enhancement effect was more pronounced among women with higher baseline fertility intentions, and that priming an optimal childbearing age of 26 was more effective than priming an age of 32.

These findings indicate that a sense of childbearing constraints can increase women' s fertility intentions. Creating environments that make women aware of age-related limits on appropriate childbearing may help enhance the fertility intentions of women of childbearing age. The results suggest that further relaxing population control policies (such as completely removing restrictions on the number of children) should not be recommended as a means to increase fertility rates, as this may actually reduce the fertility intentions of women of childbearing age.

Keywords: fertility intentions; deadline effect; psychological reactance; life-span theory of control; women
Classification Code: B849: C91

Introduction

In recent years, China has entered the ranks of low-fertility countries. National Bureau of Statistics data show that from 2010 to 2015, China' s average fertility rate was less than 1.2%, far below the replacement level of 2.1%. Prolonged low fertility rates will exacerbate population aging, lead to insufficient labor supply, hinder economic development, and trigger a series of pension problems. Moreover, the impact of fertility status on the economy and society has a long lag time—changes are not felt in the short term, but by the time they are truly perceived, it may be too late. Therefore, increasing fertility rates has become an urgent priority.

In response, the government has introduced a series of policies to increase fertility rates. The Third Plenary Session of the 18th CPC Central Committee in 2013 decided to implement the "selective two-child" policy. From January 1, 2016, the universal two-child policy was implemented. In November 2017, the report of the 19th CPC National Congress explicitly stated the need to "promote

the coordination of fertility policies with related economic and social policies, strengthen research on population development strategies, and actively respond to population aging." However, contrary to expectations, these liberalization policies have had limited effect. According to National Bureau of Statistics data, in 2016 there were 17.86 million births, with a birth rate of 12.95‰, failing to meet the previous expectation of 18 million. In 2017, there were 17.23 million births, with a birth rate of 12.43%, a decrease of 0.52‰ from the previous year (National Bureau of Statistics, 2016). Furthermore, based on National Bureau of Statistics projections, the number of women aged 24-29 in their peak childbearing years will decline sharply from 2015 to 2025 (National Bureau of Statistics, 2016), meaning that even if fertility rates remain unchanged, the number of births will decline in the coming years.

These phenomena suggest that the recent policies aimed at removing fertility restrictions may not have the straightforward impact on fertility intentions that was imagined. Overall, after the policy liberalization, the public' s willingness to have a second child has not been strong. According to a 2016 survey by the All-China Women' s Federation, 53.3% of respondent families did not want to have a second child, with this proportion exceeding 60% in urban areas. On November 10, 2015, Wang Pei' an, Deputy Director of the National Health and Family Planning Commission, revealed at a press conference of the State Council Information Office that, according to estimates, there are currently 140 million married women of childbearing age who have had one child in China. After the implementation of the universal two-child policy, more than 90 million new people became eligible to have a second child, of whom more than 45 million are aged 40-49 (born between 1966 and 1975), already at the end of their childbearing years. Among these more than 90 million newly eligible people, those with the strongest fertility intentions are precisely concentrated among these 45 million people, especially urban women (Liu & Huan, 2015). These women' s reproductive freedom was restricted by the family planning policies in effect when they entered their childbearing years. After the removal of these restrictions, they now face age constraints, yet their fertility intentions have not been weakened by these limitations; rather, they are significantly higher than those of younger women whose reproductive freedom is almost completely unrestricted. A similar situation occurred at the beginning of family planning implementation. The one-child policy was implemented in September 1979, but the birth rate from 1982 to 1991 did not decrease but instead increased (from 1.97% to 2.24%), all higher than in 1980 (1.8%), before declining later. The 1990 CCTV New Year' s Gala sketch "Super-Birth Guerrilla" humorously and vividly reflected the strong fertility intentions of the people under policy restrictions.

All of the above data suggest the same possibility—perhaps certain fertility restrictions, whether policy-based or age-based, can actually stimulate fertility intentions. In this study, we combine research on the deadline effect in decision-making, psychological reactance (Brehm, 1966), and the life-span theory of control (Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) to explore the impact of fertility restrictions on women' s fertility intentions. As an exploratory

study, this research aims to identify effective and feasible methods to enhance women' s fertility intentions, thereby increasing the fertility rate among women of childbearing age and alleviating potential population problems and other social issues caused by declining birth rates.

Theoretical Background

Women' s Biological Clock The general public widely believes that women' s fertility capacity has age limits. As physiological age increases, women' s perceived remaining time for fertility decreases. As an exploratory study, this research attempts to preliminarily examine how the perceived age limit on fertility capacity affects women' s fertility intentions.

Heckhausen' s life-span theory of control (Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) proposes the concept of developmental deadlines. According to this theory, a developmental deadline is an age-based limitation for achieving a goal (J. Heckhausen, Wrosch, & Fleeson, 2001). On the timeline of human development, a point is marked before which the possibility of goal achievement is relatively high, and after which the possibility of goal achievement is limited or completely impossible (Tomasik & Salmela-Aro, 2012). Therefore, this time point can be viewed as a turning point for whether a goal can be achieved. The life-span theory of control divides developmental deadlines into three types: biological, social, and institutional deadlines; the age limit on female fertility belongs to the biological deadline category. Previous research based on the life-span theory of control has primarily focused on individual changes before and after the turning point (e.g., Heckhausen, 1999; Heckhausen et al., 2001; Light & Isaacowitz, 2006). This study focuses on the impact of the degree of attention to age limits on fertility capacity on women' s fertility intentions before reaching the turning point.

Psychological Reactance The concept of psychological reactance (also called psychological resistance) originated from cognitive dissonance theory. Brehm (1966) argued that individuals always expect to have a certain degree of autonomy when doing something, and when individuals feel that any of their free behaviors are prohibited or threatened, a motivational state is aroused, namely psychological reactance. The theory posits that reactance may have two effects: triggering individuals' resistance to the possibility of losing more freedom and prompting individuals to restore lost or threatened freedom, as well as increasing the perceived attractiveness of the lost or threatened choice (Brehm, 1966). Psychological reactance theory has been widely applied in interpersonal attraction (Linder & Crane, 1970; Madey et al., 1996; Pennebaker et al., 1979) and judgment and decision-making related fields (Brehm & Self, 1989; Clee & Wicklund, 1980; Morimoto & Chang, 2006; Regan & Brehm, 1972; Rummel, Howard, Swinton, & Seymour, 2000; Verbeke, Farris, & Thurik, 1998; Wicklund, 1974). A large body of research supports the view that psychological reactance increases the perceived attractiveness of restricted options (Brehm,

1966), thereby motivating individuals to engage more strongly in behaviors contrary to the restriction.

In summary, previous research on psychological reactance has found that the greater the threat to individual freedom deprivation, the more severe the psychological reactance, and the more attractive the threatened option becomes. This study attempts to explore whether women who feel that their reproductive freedom is constrained by time limits will perceive their reproductive freedom as more attractive, leading to increased fertility intentions. Therefore, the hypothesis of this study is that priming women with a sense of age limits on optimal fertility capacity will lead to increased fertility intentions. This study will explore this issue through three sub-studies. Study 1 is a questionnaire-based investigation that explores the relationship between women' s actual age and the temporal distance to their perceived ideal childbearing age and their fertility intentions through self-report questionnaires. We expect that women who are closer to their perceived ideal childbearing age will have stronger fertility intentions (Hypothesis 1). Study 2 directly manipulates participants' perceptions of women' s optimal childbearing age and examines participants' implicit attitudes toward children through an Implicit Association Test (Greenwald, Nosek, & Banaji, 2003) to further confirm the causal relationship between temporal limits on optimal childbearing age and women' s fertility intentions. Study 2 employs a 3 (optimal childbearing age priming: 26-year group vs. 32-year group vs. control group) × 2 (baseline fertility intention: high vs. low) between-subjects design. The research hypothesis is that there is an interaction between optimal childbearing age priming and baseline fertility intention intensity. The effect of priming optimal childbearing age limits on improving women' s implicit attitudes toward children is greater for women with higher baseline fertility intentions, and priming 26 as the optimal childbearing age is more effective than priming 32. Study 3 selects married women under 40 who are childless or have only one child as participants and further explores the impact of age limits on childbearing on women' s fertility intentions by simulating a new policy on childbearing age restrictions. We expect that when participants anticipate that their reproductive freedom is constrained by age limits resulting from policy, their fertility intentions will increase (Hypothesis 3).

Study 1: The Relationship Between Temporal Distance to Ideal Childbearing Age and Fertility Intentions

Method Participants. All participants were unmarried women. The questionnaire was distributed through the Wenjuanxing platform, and 166 questionnaires were collected. After excluding 5 males, 4 married women, and 4 incomplete responses, 153 valid questionnaires remained (age: $M = 22.26$, $SD = 2.11$ years).

Materials. A self-designed fertility intention questionnaire was used, consisting of 9 items. First were four demographic information questions. After asking participants "What do you think is the optimal childbearing age for women?" ,

participants' age was immediately asked, followed by three questions measuring fertility intention (8-point scale): "Your ideal number of children", "Your degree of liking for children" , and "Your intensity of fertility intention" .

Results and Discussion First, the difference between participants' reported ideal childbearing age and their actual age was calculated to obtain the childbearing age difference value. Then, correlations between this childbearing age difference value and the three fertility intention measures were computed. The results showed that the childbearing age difference value was significantly negatively correlated with fertility intention intensity ($r = -0.24$, $p < 0.01$), significantly negatively correlated with degree of liking for children ($r = -0.17$, $p < 0.05$), and negatively correlated with ideal number of children ($r = -0.30$, $p < 0.01$). These negative correlations remained significant after controlling for relationship status and health status.

The results of Study 1 indicate that when female participants are closer to their perceived ideal childbearing age, their fertility intentions are stronger and they like children more. This result could be caused by two possibilities: one is that being closer to the perceived ideal childbearing age leads to stronger fertility intentions; the other is that women with stronger fertility intentions subjectively perceive the ideal childbearing age for women as being later. However, Study 1 is only a correlational study and cannot determine the causal relationship between the two variables. Study 2 directly manipulates participants' perceptions of women' s ideal childbearing age to investigate whether temporal distance to the ideal childbearing age can cause changes in women' s fertility intentions, further exploring the causal relationship between the two. An innovation of Study 2 is that it measures participants' true attitudes toward children at the subliminal level through an Implicit Association Test, thereby inferring participants' genuine attitudes toward having children that they may be unwilling or unable to report accurately for various reasons.

Study 2: The Causal Effect of Childbearing Age Limits on Implicit Attitudes Toward Children

Method Participants and Design. Participants were 151 childless female university students. A 2 (stimulus: animals vs. children) × 2 (fertility intention: low vs. high) × 3 (priming group: 26-year vs. 32-year vs. control) mixed design was used, with stimulus as a within-subjects variable and fertility intention and priming group as between-subjects variables. A likelihood ratio chi-square test on the grade distribution across the three priming groups showed no significant differences, $^{2}(6) = 7.04$, $p = 0.32$. When recruiting participants, their fertility intention intensity was assessed (8-point scale) as a pretest measure. The formal experiment was conducted more than three days after the pretest fertility intention measurement.

Implicit Association Test for Attitudes Toward Children. The Implicit Association Test (IAT) (Greenwald et al., 2003) was used to measure partici-

pants' attitudes toward children. Based on Light and Isaacowitz (2006), pictures of children and small animals were selected from the Chinese Affective Picture System (CAPS) and the International Affective Picture System (IAPS). IAT attribute words were selected from the "Modern Chinese Common Word List" , with several two-character positive and negative words chosen. Ten university students who did not participate in the formal experiment rated the selected pictures on arousal, valence, dominance, and cuteness, and rated the selected words on valence. Eight pictures of children and eight pictures of small animals with no significant differences on these dimensions were selected for the IAT; eight positive and eight negative words with significant differences in valence but no significant differences in word frequency and stroke count were also selected. Positive words included "pleasant" , "beautiful" , etc., and negative words included "evil" , "horrible" , etc.

Procedure. All experimental materials were presented using E-prime 2.0. Participants first completed demographic information, then were randomly assigned to three groups. Participants in the 26-year and 32-year groups read priming materials about women' s optimal childbearing age being 26 or 32 (both less than 100 words), then reported the time (in years) until the optimal childbearing age and their actual age; the control group did not read priming materials and directly filled in their actual age. Subsequently, participants completed the child-animal Implicit Association Test, with the order of compatible and incompatible tasks counterbalanced across participants.

Results Control Variables. One-way ANOVA on demographic variables and pretest fertility intention scores across the three priming conditions found no significant differences among the three groups in grade ($F(2, 148) = 0.34$, $p = 0.711$), health status ($F(2, 148) = 1.89$, $p = 0.155$), marital status ($F(2, 148) = 1.47$, $p = 0.232$), relationship status ($F(2, 148) = 1.16$, $p = 0.317$), or pretest fertility intention ($F(2, 148) = 0.64$, $p = 0.527$).

IAT Results. First, to verify whether the IAT effectively measured participants' fertility intentions, we conducted a repeated measures ANOVA on two validity items from the self-report scale– "the correlation degree between animals and fertility intention" and "the correlation degree between children and fertility intention" . The results showed that the correlation degree between children and fertility intention was significantly higher than that between animals and fertility intention ($F(1, 148) = 181.12$, $p < 0.001$), and this result was not affected by group ($F(2, 148) = 1.83$, $p = 0.165$) or interaction ($F(2, 148) = 0.002$, $p = 0.998$), indicating that IAT scores could effectively measure participants' fertility intentions across the three priming conditions. Since participants in the two experimental groups answered this question after receiving priming about women' s optimal childbearing age, their responses might have been influenced by the priming. Therefore, we used paired samples t-tests to examine the control group' s responses to these two questions separately. The results showed that control group participants perceived a significantly higher

correlation between children and fertility intention ($M = 5.90$, $SD = 1.93$) than between animals and fertility intention ($M = 3.26$, $SD = 1.95$), $t(49) = 8.02$, $p < 0.001$.

Subsequently, IAT difference scores for children relative to animals were calculated according to the algorithm of Greenwald et al. (2003). Higher IAT difference scores indicate greater liking for children relative to animals. A 3 (priming type) × 2 (fertility intention) ANOVA was conducted with IAT scores as the dependent variable. As shown in Figure 1 [Figure 1: see original paper], the interaction effect was marginally significant, $F(2, 145) = 2.86$, $p = 0.060$, $p^2 = 0.04$. Further simple effects analysis showed no significant differences in IAT scores among the three priming conditions in the low fertility intention group (Mcontrol $= 0.48$, SDcontrol $= 0.39$; $M26 = 0.38$, $SD26 = 0.45$; $M32 = 0.47$, $SD32 = 0.53$; $F(2, 145) = 0.23$, $p = 0.791$). In the high fertility intention group, significant differences existed among the three priming groups (Mcontrol $= 0.07$, SDcontrol $= 1.08$; $M26 = 0.54$, $SD26 = 0.37$; $M32 = 0.40$, $SD32 = 0.52$; $F(2, 145) = 3.73$, $p = 0.026$, $p^2 = 0.05$). Post-hoc multiple comparisons showed that this difference was mainly reflected between the 26-year priming group and the control group, $p = 0.008$. Other simple effects analysis results were not significant.

Discussion Study 2 measured the degree of liking for children—a variable closely related to women' s fertility intentions—through the Implicit Association Test. The results showed that for young women with initially higher fertility intentions, priming a sense of temporal limits on women' s optimal fertility capacity can increase their degree of liking for children at the subliminal level. This effect did not appear in the group with initially lower fertility intentions. Moreover, for women with higher initial fertility intentions, priming 26 as the optimal childbearing age was more effective in enhancing implicit attitudes toward children than priming 32 as the optimal age. This result is consistent with the findings of Study 1, which showed that when women perceive themselves as closer to the optimal childbearing age, their fertility intentions are stronger. Among participants primed with a sense of age limits on childbearing, no differences emerged between those with high and low pretest fertility intentions. In the low pretest fertility intention group, no differences appeared between the two priming groups and the control group. Additionally, in the control group, participants with low pretest fertility intention showed higher subliminal liking for children than those with high pretest fertility intention. Two possible reasons may explain these findings. First, priming women' s optimal childbearing age time limits may not affect fertility intentions differently based on pretest fertility intention levels. Second, self-reported fertility intention may primarily reflect women' s explicit fertility intentions, while the IAT-measured liking for children may more reflect women' s implicit fertility intentions, and differences between the two may lead to inconsistencies between grouping based on explicit fertility intention and implicit fertility intention results. Future research needs to further explore this issue.

To enhance the external validity of this research and further test the results of the first two studies among women who may actually engage in childbearing behavior, Study 3 selected married women under 40 who were childless or had only one child as participants. These women are all legally eligible to have children under China' s current fertility policies and have not exceeded the socially accepted upper age limit for female childbearing. Additionally, Study 3 included two measures of participants' childbearing behavior tendencies: one question asked about participants' "planned number of children" . Previous research has shown that planned number of children (wanted fertility) is an indicator with less deviation from actual childbearing behavior (Bongaarts, 1990) and is more likely to translate into childbearing behavior (Zheng, 2014). In another question, we asked participants to select a gift as compensation for participation, including female hygiene products unrelated to childbearing and those related to childbearing.

Study 3: The Effect of Policy-Based Childbearing Age Limits on Married Women' s Fertility Intentions

Method Study 3 used a single-factor two-level (childbearing restriction: restricted group vs. control group) between-subjects experimental design, with fertility intention as the dependent variable.

Participants. Study 3 was conducted in questionnaire form. Participants were married women under 40 with one or no child. The formal experiment distributed questionnaires through the Wenjuanxing website platform, collecting 182 questionnaires. After deleting questionnaires from participants who did not meet the criteria, 113 valid questionnaires remained, with an effective recovery rate of 62.1%. The average age was 30.56 years ($SD = 4.25$). All participants were randomly assigned to the two groups.

Materials and Procedure. Since participants came from a wide range of sources, to prevent them from being influenced by the fertility intentions of people around them, we first measured participants' surrounding childbearing environment before priming the childbearing deadline. This measurement included three items: "the number of children planned by people around you" , "the degree of liking for children among people around you" , and "the intensity of fertility intentions among people around you" . Except for "the number of children planned by people around you" , which required a direct numerical response, the other items used 8-point scales where 1 represented "very weak" and 8 represented "very strong" .

Subsequently, the two groups of participants received different priming materials. Participants in the childbearing restriction group read priming materials about China's childbearing policy, in which they were told that since age 40 is a turning point for female fertility capacity, the state plans to introduce a new policy requiring women to undergo a mandatory, very strict physical examination at age 40, and those who fail the examination will not be legally allowed to have

children. This imposed a clear temporal limit on participants' childbearing age.

To prevent the physical function turning point and the examination itself from affecting participants' fertility intentions, participants in the control group read another priming material that also included an examination policy due to a physical function turning point but was unrelated to childbearing restrictions.

Next, we asked both groups of participants to rate the policy in the materials and their mood while reading the materials. These questions aimed to ensure that participants carefully read the priming materials and were not included in the data analysis.

Participants' fertility intentions were then measured, including two types: childbearing attitudes and childbearing plans/behavior tendencies. Childbearing attitudes included two items: "degree of liking for children" and "intensity of fertility intention", both using 8-point scales consistent with Study 2. Childbearing plans and behavior tendency measures were two more advanced indicators in Study 3, also including two items. First, participants were asked about their "planned number of children" , then they were asked to select one gift from four options (sanitary pads, 1-pack pregnancy test, 5-pack pregnancy test, 20-pack ovulation test strips) as experimental compensation. Participants with stronger fertility intentions were more likely to choose pregnancy test products. Finally, participants' sociodemographic variables were collected, and they were thanked and compensated.

Results Homogeneity Test of Childbearing Environment. First, correlation analysis was conducted with participants' fertility attitudes, childbearing behavior tendencies, and surrounding childbearing environment as variables. The results showed that participants' fertility intentions, degree of liking for children, and planned number of children were influenced by their surrounding environment ($r = 0.20$ to 0.37, ps < 0.05). Therefore, to ensure the homogeneity of the environment in which the two groups of participants were situated, we conducted an analysis of covariance with group as the independent variable and the surrounding childbearing environment variables of the two groups as the dependent variables, while controlling for participants' demographic variables (age, education level, family annual income, north-south division of residence, city size of residence, whether they already had children). The results found no significant differences between the two groups in the number of children planned by people around them ($F(1, 105) = 2.70$, $p = 0.104$), the degree of liking for children among people around them ($F(1, 105) = 2.86$, $p = 0.092$), or the intensity of fertility intentions among people around them ($F(1, 105) = 0.60$, $p = 0.439$), indicating that the two groups of participants were in homogeneous childbearing environments.

Correlation Matrix Among Variables. To facilitate subsequent statistical tests, participants' residence locations were coded. Provinces in the residence location were divided by the Qinling-Huaihe line into 1 (north) and 2 (south).

Cities in the residence location were coded according to city size, with Beijing, Shanghai, Guangzhou, and Shenzhen coded as 1 and other cities coded as 2.

Table 1 presents the Pearson product-moment correlation matrix for all variables across all participants ($N = 113$). The results show that women who already have children like children more ($r = 0.27$, $p < 0.01$).

Table 1 Pearson Product-Moment Correlation Matrix of All Variables

Variable	1	2	3	4	5	6	7	8	9
1. Age	1								
2. Education level	0.23*	1							
3. Family annual income	-0.14	-0.05	1						
4. North-South	0.38*	-0.24**	-0.40**	1					
5. City size	-0.14	-0.06	-0.05	-0.01	1				
6. Has child(ren)	0.27**	0.41**	-0.14	0.06	0.05	1			
7. Planned number of children	-0.31**	-0.24**	-0.14	0.06	0.05	0.27**	1		
8. Degree of liking for children	-0.143	-0.078	0.388**	0.248**	-0.06	0.05	0.25**	1	
9. Intensity of fertility intention									1

Note: * Significant correlation at the 0.05 level (two-tailed); ** Significant correlation at the 0.01 level (two-tailed).

Effect of Priming Childbearing Time Limits on Fertility Intentions. Subsequently, one-way ANOVA was conducted on the two groups of participants' planned number of children, fertility intention, degree of liking for children, and gift selection type. The results showed that the planned number of children in the childbearing restriction group ($M = 1.55$, $SD = 0.50$) was significantly greater than that in the control group ($M = 1.27$, $SD = 0.53$, $F(1, 111) = 8.34$, $p = 0.005$, $p^2 = 0.07$). No significant differences were found between the two groups in fertility intention ($F(1, 111) = 0.18$, $p = 0.67$), degree of liking for children ($F(1, 111) = 0.15$, $p = 0.702$), or gift selection type ($F(1, 111) = 0.92$, $p = 0.34$). When demographic variables (age, education level, family annual income, north-south division of residence, city size of residence, whether they already had children) were controlled, the results of the analysis

of covariance were consistent with those of the one-way ANOVA. Analyzing the data of the experimental group alone found that older participants in the experimental group planned fewer children ($r = -0.32$, $p = 0.016$).

General Discussion

The Effect of Age Limits on Childbearing on Women' s Fertility Intentions Previous research on women' s fertility intentions has mainly come from the field of sociology, exploring influencing factors of women' s fertility intentions and predicting national fertility trends through large-sample surveys. Based on psychological theories, this study explored the impact of age limits on childbearing on women' s fertility intentions through three studies. Study 1 used questionnaires to explore the relationship between the temporal distance between women' s actual age and their perceived optimal childbearing age and their fertility intentions. The results showed a negative correlation: the closer women' s actual age is to their perceived optimal childbearing age, the stronger their fertility intentions. Study 2 was a laboratory study that primed participants with a sense of temporal limits on different optimal childbearing ages for women and measured participants' implicit and explicit fertility intentions. The results showed that priming women with a sense of temporal limits on optimal childbearing age increased the fertility intentions of women with initially higher fertility intentions. Moreover, when priming 26 as women' s optimal childbearing age, the increase in women' s fertility intentions was greater than when priming 32 as the optimal age. The participants in Studies 1 and 2 were young unmarried women. Study 3 tested this effect among married women under 40 (childless or with one child) to further examine the impact of policy-based age limits on childbearing on women of childbearing age who may actually engage in childbearing behavior. The results showed that policy-based restrictions on childbearing age led to a significant increase in married women's planned number of children, but no significant changes were found in participants' self-reported fertility intention or childbearing behavior tendency (choice of female hygiene products related or unrelated to childbearing).

In Study 3, among women primed with a sense of optimal childbearing age limits (experimental group), age was negatively correlated with fertility intention—that is, women closer to age 40 planned fewer children. This result is inconsistent with the findings of the first two studies. Two possible reasons may explain this inconsistency. First, Study 2 primed participants by reminding them of women' s optimal childbearing age, whereas Study 3 primed participants by reminding them of the turning point in women' s ability to bear children. Participants were told in the priming materials that health problems increase significantly for women having children after age 40. This negative information in the priming materials may have caused women approaching age 40 to reduce their fertility intentions due to health concerns. Another possibility is that the participants in Study 3 differed significantly from those in Studies 1 and 2. Participants in Study 3 were married women, whereas participants in Studies 1 and 2 were

unmarried women, and participants in Study 3 were significantly older (Study 3: $M = 30.56$ years, $SD = 4.25$ years; Study 1: $M = 22.26$ years, $SD = 2.11$ years; Study 2 did not measure age, but participants were university students with ages similar to those in Study 1). It may be that priming women with a sense of temporal limits on childbearing age is more effective for unmarried young women. Future research needs to further explore under what circumstances priming women with a sense of age limits on childbearing is most effective.

Limitations of This Study In this study, we proposed that psychological reactance aroused when participants realize their freedom to reproduce is restricted or threatened leads to enhanced fertility intentions. However, to avoid participants guessing the purpose of the study and thereby affecting their responses about fertility intentions, we did not measure psychological reactance in this study. In a similar study (Wisman & Goldberg, 2005), fertility intentions also increased when participants received mortality reminders, and the researchers also suggested that psychological reactance may have played a role. However, neither that study nor the present one measured participants' psychological reactance. Future research needs to further examine the role of psychological reactance in this effect.

Implications for Predicting Women' s Childbearing Behavior and Policy Recommendations A contribution of this study is the exploration and attempt to identify effective indicators for predicting women' s childbearing behavior. This study tried two methods not used in previous research to measure women' s fertility intentions: first, using the Implicit Association Test to measure women' s subliminal fertility intentions; second, measuring childbearing behavior tendency through participants' choice between female hygiene products related to childbearing (pregnancy test products) and those unrelated to childbearing (sanitary pads). Women' s fertility intentions are an important factor affecting women' s fertility levels and one of the most effective indicators for predicting national fertility trends (Chen & Jin, 2011). Therefore, accurately measuring women's fertility intentions has important academic value for predicting national fertility levels. Meanwhile, as the world' s most populous country, population issues occupy a pivotal position in the overall economic and social development of the nation (Lu, Qiu, & Zheng, 2017), making the exploration of accurate methods to measure women' s fertility intentions of great practical significance.

This study is the first to attempt using the Implicit Association Test to measure women' s subliminal fertility intentions and predict their childbearing behavior. In Study 2, we found that priming women with temporal limits on optimal childbearing age affected their preference for baby pictures (relative to small animal pictures) in the Implicit Association Test. Although the degree of liking for children cannot be completely equated with fertility intention, in all three experiments of this study, women' s degree of liking for children was significantly positively correlated with their fertility intention (Study 1: $r = 0.51$, $p < 0.001$;

Study 2: $r = 0.27$, $p = 0.001$; Study 3: $r = 0.25$, $p = 0.008$), and the degree of liking for children can to some extent reflect women' s fertility intentions. Consistent with this view, previous research has shown that reproductive-aged women' s evaluation of child value can reflect their fertility attitudes (Mao & Luo, 2017). Therefore, the IAT paradigm used in this study could be considered as a method for measuring women' s fertility intentions and predicting women' s childbearing behavior.

As an attempt, Study 3 tried to measure women' s childbearing behavior tendency through their choice between female hygiene products related to childbearing (pregnancy test products) and those unrelated to childbearing (sanitary pads). However, this indicator was not affected by priming restrictions on women' s childbearing age. Most women (77%) chose female hygiene products unrelated to childbearing as gifts. In addition to the pregnancy test products used in this study, the frequency of sexual activity and choice of contraceptive products may also be related to childbearing behavior tendency. However, previous research has shown that the amount of contraceptive product use is positively correlated with the frequency of sexual activity, while the relationship between sexual activity frequency and fertility intention has not been supported by previous research (Veenhoven, 1975). Moreover, reporting sexual activity frequency and preferences for contraceptive products is also affected by social desirability. Therefore, current evidence suggests that contraceptive products, pregnancy test products, and sexual activity frequency are not suitable as effective indicators for measuring women' s childbearing behavior tendency, and further exploration is needed.

As an exploratory study, the most important contribution of this research is using empirical studies to demonstrate that a certain sense of childbearing restriction not only does not reduce fertility intentions but actually enhances them. Changes in India' s family planning policy and population birth situation also provide indirect evidence for the results of this study (Mo, 1986). Between 1941 and 1951, India' s population increased from 319 million to 361 million, an increase of 42 million. When the Indian government formulated its first five-year plan (1951-1956), it clearly stated that family planning work must be carried out, but it only focused on publicity and encouragement without mandatory measures. As a result, India' s population surged from 361 million to 439 million between 1951 and 1961, an increase of 78 million in ten years; by 1971, India' s population had reached 548 million, an increase of 110 million in ten years. In 1976, India announced the "Family Planning Law" , which stipulated restrictions and penalties for those who did not comply with family planning policies, after which the birth rate began to decline. India' s population data show that family planning policies without coercive measures may actually lead to a surge in birth rates.

Based on the results of this study, we speculate that policies that remove childbearing restrictions not only will not enhance fertility intentions but may actually reduce them. Consistent with this line of thinking, the U.S. National

Science Foundation (NSF) reported that after eliminating deadlines for certain programs, application numbers decreased by half. Therefore, based on the results of this study and other related research findings, we propose two policy recommendations for enhancing fertility intentions. First, given that the two-child policy has not been effective in increasing fertility rates, we do not recommend hastily further relaxing population control indicators (such as completely removing restrictions on the number of children) to solve the problem of low fertility intention. Second, environments that create a sense of age-related limits on childbearing for women should be created, such as adding information prompts about remaining time for appropriate childbearing during annual physical examinations for women of childbearing age.

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Note: Figure translations are in progress. See original paper for figures.