

# The Current Situation of Fertility Intention among Women of Reproductive Age in Hebei Province in the Information Age and the Research on Promotion Strategies

Jinming Bao, Jiawei Fan, Wei Qiao, Junjie Wang, Zijian Xu\*

Chengde Medical University, Chengde 067000, China

\*Corresponding author: Zijian Xu, xxxuzijian1995@163.com

**Copyright:** © 2024 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

**Abstract:** The development of the information age has had a certain degree of impact on the fertility intention of women of childbearing age. There is relatively little current research on the fertility intention of women of childbearing age from the perspective of information technology. This study objectively describes the fertility intention of women of childbearing age in Hebei Province and combines past literature to explore the underlying reasons. Research has found that the current willingness to have multiple children in both urban and rural areas in this region is relatively low, with more women of childbearing age in rural areas than in cities. Compared to the beginning of this century, there may have been a degree of increase in the willingness to have multiple children due to the policy loosening. Based on the above results and combined with previous studies, this study explored how to promote the fertility willingness of women of childbearing age in Hebei Province from the perspective of informatization such as the Internet, new media, and digital economy.

**Keywords:** Informatization; Three-child policy; Women of childbearing age; Fertility intention

**Online publication:** July 26, 2024

## 1. Introduction

With the development of the Internet and digital technology, the information age with the Internet, new media, and the digital economy is profoundly changing people's production and lifestyle. In the field of population fertility intention, researchers have studied the fertility intention of women of childbearing age from a specific perspective of media use and information acquisition<sup>[1-2]</sup>. Some researchers have also explored the relationship between the digital economy and fertility intention in the context of the information age based on family tracking surveys. This provides a certain theoretical basis for proposing suggestions for improving fertility status from the perspective of informatization in this study.

To actively respond to the aging population, China has further optimized its birth policy, implemented the

three-child policy and supporting measures, from “having only one child” to “having two children”, and then to “having three children” comprehensively. Fertility intention is an important field of fertility research and a topic of demographic sociology. However, according to the data released by the National Bureau of Statistics, there is no sign that the decline in the birth rate has been contained, and it is even intensifying, resulting in less-than-ideal policy effects.

Looking at the research results on fertility intention in China since the 1980s, it can be found that the breadth of content and the diversity of perspectives run through the entire process of fertility intention research. From the perspective of research content, some researchers have studied the fertility desire of people of childbearing age from the perspectives of quantity, gender, and time, while others have proposed that the main reasons for inhibiting the fertility desire of married people who comply with policies include various factors such as economic and psychological pressure and physiological and psychological problems<sup>[3-4]</sup>. From the perspective of research scope, some researchers have analyzed the changes in China’s population’s fertility intention from 1980 to 2011 based on national big data, while others have established and improved a second child incentive and guarantee mechanism mainly based on family development support policies based on survey recommendations on the fertility intention of women of childbearing age in Ningbo urban area<sup>[5-6]</sup>. From the perspective of research objects, some researchers have compared and analyzed the effect of the two-child policy on the fertility intention of urban and rural residents in Chongqing, and there is a significant urban-rural divide in the impact of subjective class identity on fertility intention from the perspective of urban-rural differences<sup>[7-8]</sup>. Additionally, researchers have selected representatives of several ethnic minorities to summarize the development characteristics of ethnic minority fertility levels and the impact of occupational categories on the fertility intention of women of childbearing age<sup>[9]</sup>. For example, some researchers have used a certain district in Chengdu as an example to study the fertility intention and policy incentives of female civil servants under the background of the three-child policy<sup>[10]</sup>.

Based on the above analysis of previous research, the study of fertility intention involves multiple perspectives such as economy, social environment, ideology, and occupational categories. Taking Hebei Province as an example, this study investigates the current situation of fertility willingness of women of childbearing age in Hebei Province under the current fertility policy, and provides constructive suggestions for improving the fertility status from the perspective of the Internet, new media, digital economy, and other informatization, to better implement China’s three-child policy, improve China’s population structure and maintain China’s human resource endowment advantages.

## 2. Method

### 2.1. Participants

This study used a holistic sampling method to select 300 female participants of childbearing age (aged between 20 and 49 years and residing in Hebei) from major prefecture-level cities in Hebei Province. The self-designed survey questionnaire is uploaded into the Questionnaire Star platform and distributed one-on-one to the participants. The participants can fill it out online through their mobile phones, and each IP can only fill out the form once. A total of 300 questionnaires were distributed, and 270 valid questionnaires were collected, with a response rate of 90%. The obtained data underwent preprocessing, eliminating invalid data, and retaining accurate and effective data. The obtained data was organized and analyzed using SPSS 21.0 statistical software. The distribution of participants is shown in **Table 1**.

**Table 1.** Basic information of participants ( $N = 270$ )

Variable	Category	<i>N</i>	Percentage
Location	City	136	50.4
	Countryside	134	49.6
Common monthly income	Below 2000	21	7.8
	2000-5000	87	32.2
	Over 5000	162	60.0
Educational background	Junior high school and below	61	22.6
	High school and vocational school	56	20.7
	Bachelor's degree or above	153	56.7

## 2.2. Materials

The use of a child value assessment questionnaire to reflect the expectations of women of childbearing age towards the value of their children greatly affects their willingness to have children. This study utilized a self-designed survey questionnaire that combines the child value assessment questionnaire with demographic variables such as location, occupation, category, age, income, and education of the subject and spouse that may affect the dependent variable and includes contradictory questions to test the subject's conscientiousness in answering. The child value assessment questionnaire was developed by Bu Ankang, consisting of 52 questions<sup>[11]</sup>. This questionnaire consists of 8 dimensions, namely, psychological and emotional satisfaction, acquisition and expression of a sense of responsibility, economic value, ways and prestige of competition, hope and realization of familial relationships, happiness in marriage and family integrity, acquisition of information and expansion of relationships, and inheritance and continuation of families. The scale is scored using the Likert self-assessment 5-point scale method: "1" represents "not important at all" to "5" represents "very important", with a higher total score indicating a higher willingness to have children. This questionnaire has good reliability and validity. In this study, Cronbach's alpha of the questionnaire was 0.98.

## 3. Results

### 3.1. Current situation of fertility willingness among women of childbearing age in the region

Among the 270 participants surveyed, 9.6% had a desire to have multiple children, while 90.4% had no desire to have multiple children, as shown in **Table 2**.

**Table 2.** Current status of women of reproductive age's willingness to have multiple children

Project	Number of examples	Proportion
Do you have a willingness to have multiple children	270	
Yes	26	9.6
No	244	90.4

### 3.2. Descriptive statistics on the scores of participants in various dimensions of the child value assessment questionnaire

Descriptive statistical analysis was conducted on the scores of the participants in the child value assessment

questionnaire, and the results are shown in **Table 3**. The dimension with the highest average score is psychological and emotional satisfaction; The dimension with the lowest average score is the continuation and inheritance of the family; The dimensions with higher average scores include the acquisition and manifestation of a sense of responsibility, the acquisition of competitive channels and prestige, economic value, and the hope and realization of familial relationships.

**Table 3.** Descriptive statistics of scores for each dimension of participants on the questionnaire

Variable	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M ± SD</i>
Psychological and emotional satisfaction	270	10	50	42.86 ± 8.00
The acquisition and manifestation of a sense of responsibility	270	7	35	25.94 ± 7.08
Economic value	270	7	35	23.47 ± 7.55
The ways to compete and gain prestige	270	8	40	24.79 ± 9.45
The hope and implementation of familial relationships	270	6	30	21.37 ± 6.22
The perfection of marriage and the integrity of family	270	5	25	18.71 ± 4.74
The acquisition of information and the expansion of relationships	270	5	25	18.63 ± 4.52
The inheritance and continuation of a family	270	4	20	13.80 ± 4.38
Total score of children's value evaluation	270	52	260	189.58 ± 43.12

### 3.3. Differences in demographic variables of multiple child fertility intention among participants

The difference test analysis was conducted on the demographic variables of the multi-child fertility willingness of the subjects, and the results are shown in **Table 4**. There is a significant difference in the multi-child fertility willingness of the subjects in their location (urban or rural) ( $\chi^2 = 4.42, P < 0.05$ ), and the participants in rural areas had a higher willingness to have multiple children than those in urban areas. There was no significant difference in the willingness to have multiple children among the participants in terms of common income ( $\chi^2 = 2.78, P > 0.05$ ). There was no significant difference in educational background among the participants in terms of their willingness to have multiple children ( $\chi^2 = 0.76, P > 0.05$ ).

**Table 4.** Differences in the willingness of participants to have multiple children in their respective regions (*N* = 270)

Willingness to have multiple children		
Location	$\chi^2$	4.42
	<i>df</i>	1
	<i>P</i>	0.04*
Common monthly income	$\chi^2$	2.78
	<i>df</i>	2
	<i>P</i>	0.25
Educational background	$\chi^2$	0.76
	<i>df</i>	2
	<i>P</i>	0.68

Note: \* The chi-square statistics are significant at the .05 level

## **4. Discussion**

### **4.1. Strengthening the guidance of women's reproductive concepts in the information age**

According to this study, the total willingness of female participants of reproductive age in the region to have more children is low, about 10%, which is consistent with previous research <sup>[12]</sup>. A study has revealed that surfing the internet can increase personal fertility anxiety and change one's attitudes towards childbirth, leading to an overall decrease in people's willingness to have children <sup>[13]</sup>. Information technology enables the rapid dissemination of a large amount of information, which may amplify negative fertility information or one-sided views, such as emphasizing the difficulty, pressure, and cost of childbirth, making women of childbearing age have more concerns and fears about having more children. Meanwhile, the widespread dissemination of diverse lifestyles and values on the internet may make some women more inclined to pursue personal development and freedom, reducing their willingness to have more children. The information age makes it easy for people to fall into an information cocoon, making it difficult to comprehensively and objectively understand the benefits and significance of multiple births. In addition, under the informatization era, people may pay more attention to immediate satisfaction and enjoyment and lack attention to long-term investment in fertility. It is necessary to re-examine the value of fertility through conceptual guidance. Given this situation, it is of great significance to strengthen the guidance of women's fertility concepts and build an information environment for positive fertility concepts on the Internet. At the same time, this will also to some extent increase the probability of women of childbearing age obtaining information on positive fertility concepts, reduce personal fertility anxiety within a certain range, establish correct fertility concepts, and thereby enhance personal fertility intentions.

### **4.2. Building a fertility support network platform system through the Internet**

Based on the results of this study, there is a significant difference in the willingness to have multiple children among the participants in the current local area, with rural areas being higher than urban areas. This is inconsistent with Zheng Zhenzhen's research at the beginning of this century <sup>[14]</sup>. The reason for the inconsistency may be that with the promotion and further development of fertility policies, the willingness of rural women of childbearing age in the eastern region to have multiple children has been somewhat due to the relaxed policy. Combined with the background of the information age, the reason for the low willingness to have multiple children in urban areas may be that negative information has a more significant impact on urban women of childbearing age with larger daily information loads. The popularization and use of the Internet will, to a certain extent, affect people's fertility intention, among which the negative information has a significant negative effect on people's fertility intention <sup>[15]</sup>. Under the birth support network platform system built through the Internet, its powerful communication power can quickly and widely spread positive information and policies at the information dissemination level, helping women of childbearing age to achieve full awareness. From the perspective of social interaction, it can promote communication and interaction, achieve sharing encouragement, and reduce loneliness and anxiety. By constructing a fertility support network platform system, it is aimed to increase the willingness of women of childbearing age to have multiple children.

### **4.3. Utilize the power of new media to reduce women's fertility anxiety**

According to this study, there is no significant difference in educational background among the participants in the local area regarding their willingness to have multiple children. The possible reason for this may be that in the era of information technology, fertility anxiety is increasing across cognition and income. According to the research of scholars such as Chen Weimin, the popularization of the internet in the information age has increased the fertility anxiety of women of childbearing age, which has become a barrier to the increase of fertility willingness of women of childbearing age <sup>[13]</sup>. To reduce fertility anxiety of women of childbearing

age, in addition to macro measures established by the social positive fertility concept environment, it should also be combined with the development of new media platforms in the information age. New media has significant information dissemination efficiency, which can achieve efficient and widespread dissemination of reproductive knowledge and successful examples, thereby assisting women of childbearing age in building a correct cognitive system and alleviating their anxiety. From the perspective of public opinion guidance, it can create a positive environment for fertility public opinion, improve one-sided understanding of multiple births, and reduce the anxiety caused by policy uncertainty through in-depth interpretation and dissemination. New media can play its unique role at multiple levels, promoting the rationalization of reproductive-age women's "rethinking" and thus promoting their willingness to conceive.

#### **4.4. Optimize specific policies to offset the negative effects of the digital economy**

According to this study, the willingness of participants in this region to have multiple children is not significant in terms of income, and women of childbearing age at all income levels generally have a lower willingness to have multiple children. Based on the research of Chen Huashuai and Ma Xiaomin, the reason why the current fertility willingness of women of childbearing age is lower than policy expectations may be due to the development of the digital economy increasing the cost of education, which objectively suppresses the subjective psychological desire of women of childbearing age to have children from an economic perspective [16]. The digital economy leads to increased work pressure and irregular time patterns. Through policies, women of childbearing age can be provided with room for time and energy allocation, which can reduce their concerns about the impact of childbirth on career development. At the same time, it can alleviate living costs and parenting pressure, create a positive reproductive environment, and ensure the enthusiasm and feasibility of childbirth. Improving policies can increase support for postpartum couples to resume work and increase the quantity and quality of employment for childbearing age groups in a targeted manner. Policy optimization can offset the negative impact of the development of the digital economy on the fertility willingness of various income groups.

Based on the current national population fertility policy and the background of the information age, this study proposes corresponding countermeasures from the specific perspectives of the Internet, new media, and the digital economy. At present, there is relatively little research on the field of population fertility intention in the era of informatization in China. Subsequent research can deeply integrate the research on population fertility intention in informatization with social psychology, to achieve new theoretical results.

### **Funding**

This article is the research result of the 2022 National University Students' Innovation and Entrepreneurship Training Program project of Chengde Medical University (Project number: 2022008).

### **Disclosure statement**

The authors declare no conflict of interest.

### **References**

- [1] Deng LJ, Liu HL, Zhao WY, et al., 2023, The Impact of Media Use on the Fertility Intention of Young Women: The Mediating Role of Gender Role Attitudes. *New Media Research*, 2023(15): 32–36.



- [2] Jiang QL, Wang HK, Chen ZH, 2023, The Impact of Social Media Information Acquisition on the Fertility Intention of Women of Childbearing Age: A Comparative Study Based on Active Information Seeking and Accidental Contact with Information. *China Population Science*, 2023(1): 39–55.
- [3] Yin Q, Wen Y, Zong ZH, et al., 2006, Fertility Willingness and Influencing Factors among the Reproductive Age Population in Changzhou. *Journal of Nanjing Population Management Cadre College*, 2006(02): 40–43.
- [4] Jia YF, 2014, Analysis of the Potential Impact of the “Two-Child Policy” on the Fertility Intention of Women of Childbearing Age in Kunshan City. *Chinese Journal of Family Planning*, 22(08): 514–518.
- [5] Hou JW, Huang SL, Xin ZQ, 2014, Changes in China’s Population Fertility Intention: 1980–2011. *Chinese Social Sciences*, 2014(04): 78–97.
- [6] Yuan SB, Hu BY, Luo GC, 2020, Investigation and Analysis of Fertility Intention and Influencing Factors of Women of Childbearing Age in Ningbo City under the Background of Comprehensive Two-Child Policy. *China Maternal and Child Health*, 35(02): 314–318.
- [7] Ding Y, 2016, A Comparative Study on the Fertility Willingness and Influencing Factors of Urban and Rural Populations of Childbearing Age, thesis, Chongqing University of Technology.
- [8] Lin HM, Gan MT, 2022, A Study on Subjective Class Identity, Perception of Class Mobility, and Fertility Intention of Urban and Rural Residents: Based on CGSS2017 Data. *Journal of Fujian Provincial Party School of the Communist Party of China (Fujian Administrative College)*, 2022(01): 148–157.
- [9] Li JX, Qiu LY, 2022, Analysis of Fertility and Its Influencing Factors of Minority Population in China: Taking Zhuang, Hui, Manchu, Uyghur, Tibetan, and Mongolian as Examples. *Northwest Ethnic Studies*, 2022(1): 139–155.
- [10] Deng YL, 2023, A Study on the Fertility Intention and Policy Incentives of Female Civil Servants under the Background of the Three-child Policy, thesis, Chongqing University of Commerce.
- [11] Bu AK, 2008, Development and Measurement of the Children’s Value Evaluation Questionnaire (Youth Edition), thesis, Tianjin Normal University.
- [12] Pei DY, 2022, A Study on the Fertility Willingness and Behavior of Women of Childbearing Age under the “Three-Child” Policy, thesis, Hebei Normal University.
- [13] Chen WM, Wan JL, Li CW, 2022, Why Does the Internet Affect an Individual’s Willingness to Have Children? *Population Research*, 46(3): 16–29.
- [14] Zheng ZZ, 2004, A Study on the Fertility Willingness of Chinese Women of Childbearing Age. *Chinese Population Science*, 2004(5): 6.
- [15] Qiu LJ, Feng YQ, Shi YP, et al., 2022, Will Internet Use Affect Residents’ Fertility Intentions? *Population Research*, 46(3): 3–15.
- [16] Chen HS, Ma XM, 2023, Digital Economy and Fertility Intention. *Southern Population*, 38(4): 1–14.

**Publisher’s note**

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.