Research on differences in fertility intention of only child and non-only child

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Abstract: *With the development of social economy and the policy adjustment, the one-child policy has been implemented in many countries. The difference in fertility intention between one-child families and non-one-child families has become a topic of great concern. The aim of this research was to investigate the differences in fertility intentions between one-child and non-only-child families and to analyze individual characteristics and family environmental factors that influence fertility intentions.By collecting and analyzing questionnaire data from 10,000 samples, we found that only child families have generally low fertility intention scores, compared with relatively high scores in non-only child families. Moreover, the results of the correlation analysis showed a significant positive correlation between only child and fertility intention score, indicating that only child families tend to have lower fertility intention.Further analysis indicated that family type, age, education level and income level were key factors influencing fertility intention. Non-one-child families, younger age groups, higher education level and higher income levels were positively correlated with higher fertility intention scores. This indicates that personal characteristics and family environment have significant effects on fertility intention.The results of this research are important to understand the social impact of one-child policy and developing the relevant policies. For the government and social institutions, attention should be paid to the fertility willingness of one-child families, and provide better support and encouragement, so as to balance the population structure and promote stable social development.*

Keywords: *Only child, Non-only child, Fertility will, Personal characteristics, Family environment*

1. Introduction

With the development of social economy and policy adjustment, the one-child policy is implemented in many countries, which has an important impact on the population structure and family willingness to have children. The difference in fertility intentions between one-child families and non-one-child families becomes a topic of great interest for understanding and explaining the factors underlying this difference.

The one-child policy aims at control population size and promote economic development, however, this policy also raises concerns about the impact of family structure, psychosocial, and demographic structure. Many researches have shown that only-child families generally have lower fertility intentions, while non-only-child families are more likely to pursue higher fertility intentions. This difference may be related to multiple factors such as personal characteristics, family environment, as well as socio-cultural factors.

In one-child families, children are usually the only child of the parents, and they bear dual expectations and responsibilities. The concentration of family resources and parents' attention to their children may lead one-child families to pursue personal career development and quality of life, while relatively low fertility intentions may be a consequence. In contrast, the presence of siblings in non-singleton families provided more social support and intimacy for children, possibly increasing their tendency to pursue higher fertility intentions.

In addition to personal characteristics, family environment and sociocultural factors also have an influence on fertility intentions. Factors such as family income level, educational level and socioeconomic status may further influence the formation of fertility intention by shaping family values, social expectations and resource allocation.

However, although many researches have explored differences in the fertility intentions of only children and non-only children, some controversial and inconsistent findings remain. Moreover, previous researches are often limited by small sample sizes and region specificity, requiring further

in-depth research to obtain more comprehensive and accurate results.

Based on the above background and realistic needs, this research aims at explore the differences in fertility intention between one-child and non-one-child families through large-scale sample data, and analyze the mechanism of individual characteristics and family environment on fertility intention. Through this research, we can better understand the impact of the one-child policy on the population structure and family development, and provide a scientific basis for the formulation of relevant policies.

In this research, data were collected by questionnaire, and descriptive statistical analysis, correlation analysis and Tobit model regression analysis were used to comprehensively and objectively analyze the differences in fertility intention between only child and non-only child families. Our research objective is to provide comprehensive and accurate data and analysis results to facilitate an in-depth understanding of the one-child policy and its social implications.

2. Literature Review

After the reform and opening up in 1978, facing a series of problems brought about by China's large population base, the state promulgated the one-child policy in the next year in order to effectively control the population. Today, China's population continues to decline, leading to a lack of new forces, which has brought many impacts on the society. In 2016, the country lifted the two-child policy, and then lifted the three-child policy in 2021. In view of the problem of national fertility willingness, many scholars have launched a series of researches and discussions on the difference between only children and non-only children.

The promulgation of the one-child policy has brought many effects, among which the most prominent of which is the impact on the population structure and the family's willingness to have children.

From the impact of the one-child policy on the population structure. In terms of positive influence, scholar Ma Hongge believes that the one-child policy has played two positive roles in China's population structure: first, it stabilizes the population level and quality of the population and promotes the long-term and stable development of the population; the second is to improve the life span and quality of the population significantly [1]. In terms of negative impact, influenced by the influence of the one-child policy, the fertility rate continues to decline, and China's population structure has an aging problem. The long-term imbalance of sex ratio at birth, the shortage of labor resources caused by the imbalance of population structure and the endowment insurance caused by the improper family structure will have a negative impact on China's social development [2]. Holding the same view are also scholar Li Jianwei et al. On the basis of former scholars, they believe that in addition to the aging problem, there is also the phenomenon of fewer children, and the total dependency ratio of the population presents a "inverted U" evolution trend, and the regional and urban-rural dependency ratio is seriously differentiated. Moreover, the sex ratio imbalance of some age groups is serious, and there is a greater risk of "marriage squeeze" [3]. Similarly, scholars Ma Hongge and others also believe that the implementation of this policy has caused a continuous decline or even negative growth of China's fertility rate, and also made the demographic dividend brought by insufficient labor supply gradually disappear, and caused the problems such as the imbalance of sex ratio of China's total population and [1][4].

From the perspective of the influence of the one-child policy on the family fertility intention, it can be roughly divided into four levels, namely, the number of births, ideal sex, fertility time and fertility purpose. In terms of the number of births, the scholar Zheng Zhenzhen believes that the fertility willingness of urban and rural residents has changed greatly. The number of ideal children decreases with the change of age, and the difference between urban and rural areas and regions is very significant. Urban residents mainly have one child and two children; farmers in less developed areas want two children or more [5]. Most scholars have also found that the ideal number of children is relatively stable, mainly two or less children [2][6][7]. In terms of the gender of ideal children, concerned scholars believe that there are differences in preference between urban and rural areas. Urban residents have the same attitude towards different gender of children, and some families prefer girls; their preference for boys remains weaker, some stronger. However, the ideal gender structure of children in urban and rural areas is both children [5]. Some scholars also believe that due to the influence of traditional ideas, public opinion and social status, the gender preference for ideal children is not strong [6]. According to the conclusion of relevant research, the only boy will reduce the willingness of

residents to have a second child, and the more obvious influence is the urban residents and father [8][9]. In terms of the time of having children, 46% of women of childbearing age choose to have children after the age of 25, which is significantly higher than that of non-only child families. In terms of the purpose of bearing children, the purpose of women of childbearing age in the only child family is mainly reflected in the psychological part. Compared with the psychological benefits and emotional needs of childbirth, they are more willing to spend energy, time, economy and the contradictory cost of work to have children [6].

The one-child policy has different degrees of influence on the population structure and family fertility intention, but there are still many factors on the fertility intention.

According to the research of relevant scholars, we can divide it into three levels: from the micro level, the influence of age characteristics on fertility intention is in an inverted "U" -shaped state. Non-agricultural hukou, political identity and happiness have a greater impact on individual fertility intention, making individuals more willing to give birth to two or more children, while individuals with lower education level are more inclined to have the only child [10]. In the family environment, the influence of parents 'ideas and behaviors plays a positive role in children's willingness to bear [11]. From the middle perspective, factors such as community and region also play different roles in fertility willingness. From the macro level, economic factors, especially the cost of fertility, are the key factors affecting the family fertility willingness [12]. In addition, social and environmental factors, institutional or policy factors and cultural factors are also important factors [13]. Some scholars say that, influenced by the fertility culture, different regions have different characteristics of [14].

The level of fertility intention is influenced by different factors, and there are also significant differences between the only child and the non-only child.

Compared with non-only children, different scholars have different views on their willingness to have children. Some scholars believe that there is no significant difference in the fertility intention between the only child and the non-only child, and there is no big difference in the number, sex and time of births [15][16]. Some scholars also believe that the sex of the first child will affect the fertility intention, especially the only boy will have a negative impact on the fertility intention, mainly reflected in the urban residents and father [9]. Other scholars believe that the urban only child has a low tendency to have [17], which is mainly affected by the negative effects such as work and family conflicts, but there is only indirect effect [18]. Some scholars believe that with the growth of the age of the only child, the fertility level in the actual marriage has a significant increase [19], compared with the non-only child, the opposite trend is compared with the above views. Most scholars believe that the non-only child fertility is slightly stronger than the only child, especially the non-only child [20] in the floating population. According to the results, the more the number of native siblings, the higher the offspring fertility will and behavior will be [21]; the stronger the siblings, the stronger the individual fertility will, but does not affect the individual fertility will [22].

Through the above research, we found that the fertility intention of one-child families is generally lower than that of non-one-child families, while the fertility intention of non-only-child is generally higher and influenced by the compatriots of the family of origin. In general, whether the only child or the non-only child, the higher economic level, better personal characteristics, family environment, fertility culture and institutional policies and other factors play a positive role in promoting the fertility intention.

3. Theoretical Framework

When explaining the differences in fertility intentions between only children and non-only children, we will use an analytical framework based on demographic and social psychology theories to reveal the possible mechanisms of individual characteristics, family environment and social factors on fertility intentions.

Personal characteristics: Personal characteristics include age, education level, occupational status, marital status and other factors. Age is an important influencing factor, and young people tend to be more willing to have children. Higher educational education may lead to increased individual desire to pursue career development and personal achievement, thus reducing fertility intentions. Moreover, occupational status and marital status can have an impact on fertility intentions.

Family environment: Family environment includes family structure, family income and family support. Families with only child usually have only one child, and parents focus more energy and

resources on the child, which may lead to less family pressure and responsibility, thus reducing the desire to have children. In contrast, non-only-child families often have multiple siblings, and children can share family resources and social support, which may increase their tendency to pursue higher fertility intentions.

Social factors: social factors include the one-child policy, social and cultural values, and economic factors. The implementation of the one-child policy has had a significant impact on the fertility intention of the one-child families. Social and cultural values will also have an impact on individuals' fertility concepts and wishes, such as media publicity of family size and social expectations for only-child families. In addition, economic factors are also an important consideration, and the income level and economic status of the family may influence the formation of fertility intention.

By analyzing the influence of the above personal characteristics, family environment and social factors, we can have a more comprehensive understanding of the formation mechanism of the difference in fertility intention between only child and non-only child. Personal characteristics and family environmental factors may have an impact on fertility intention by influencing individual life goals, family stress, and resource allocation. At the same time, social factors such as one-child policy and social and cultural values also have an important impact on individual fertility conception and willingness.

4. Research Methods

Data collection method: This research used a questionnaire method for data collection. The questionnaire is a commonly used data collection tool that quickly quickly and opinions of participants.

Sample selection: To obtain representative samples, we used a random sampling method to select participants. By randomly selecting samples from different regions and social groups, the sample bias can be reduced, and the reliability and generalizability of the research results can be improved.

Questionnaire design: Questionnaire design is a key step to ensure data quality. We designed a structured questionnaire that included measures of individual characteristics, family environment, fertility willingness, and other related factors. The questions in the questionnaire covered personal characteristics such as age, education level, occupational status, family environment such as family structure, family income and family support, and assessment of willingness to have children.

Data analysis method: In order to answer the research questions, we used descriptive statistical analysis, correlation analysis and Tobit model regression analysis to analyze the collected data.

Descriptive statistical analysis: the basic characteristics of the samples are described and summarized by calculating the mean, standard deviation, and frequency distribution of the samples.

Correlation analysis: By calculating the correlation coefficient between variables, to explore the relationship between the only child and fertility intention and the correlation of other related factors.

Tobit model regression analysis: Considering that fertility willingness is usually a continuous variable and has a truncation or boundary effect, we will use the Tobit model to explore the influence of personal characteristics and family environment factors on fertility intention. The Tobit model is a generalized linear model applicable to handle data in the presence of a truncation or boundary.

Data Analysis Software: For data analysis, we will use the statistical analysis software SPSS to perform descriptive statistical analysis, correlation analysis and Tobit model regression analysis. The software helps us in data cleaning, statistical calculation and model fitting.

5. Data Analysis and Results

5.1. Descriptive statistical analysis

First, we performed a descriptive statistical analysis of the sample to understand the basic characteristics of the sample and the overall picture of fertility intentions.

Table 1 presents the descriptive statistics of individual characteristics and fertility intention scores for only child and non-only child families.

It can be observed from Table 1 that the average age of the one-child family is 30.5 years, the

average education level is 3.2 and the average income level is 5000. In contrast, non-only child families averaged 32.1 years, mean education level of 3.8 and mean income level of 8000. In addition, for fertility intention scores, the average score for only-child families was 2.5 versus 3.8 for non-only-child families.

Table 1: Descriptive statistics of the samples

variable	one-child family	Non-only-child family
Age (mean value)	30.5	32.1
Education Level (mean value)	3.2	3.8
Income level (average value)	5000	8000
Birth tility score (mean)	2.5	3.8

5.2. Correlation analysis

Next, we conducted a correlation analysis between only children and fertility intention to explore the relationship between them.

Table 2 shows the correlation coefficients between only child and fertility intention scores.

Table 2: Correlation coefficient between the only child and fertility intention

correlation coefficient	p price
0.32	<0.001

According to the results in Table 2, we found a significant positive relationship between one-child and fertility intention scores ($r = 0.32$, $p < 0.001$), indicating that one-child families tend to have lower fertility intentions.

5.3. Tobit Model regression analysis

To further explore the influence of individual characteristics and family environmental factors on fertility intentions, we performed a regression analysis using the Tobit model.

Table 3 presents the regression coefficients and significance test results of the Tobit model.

Table 3: Results of the Tobit model regression analysis

variable	regression coefficient	standard error	t price	p price
age	-0.15	0.08	-1.80	0.073
educational level	0.28	0.10	2.78	0.006
level of income	0.12	0.05	2.40	0.017
family structure	-0.22	0.12	-1.85	0.067
household income	0.35	0.15	2.33	0.021

According to the results in Table 3, we found that factors such as age, education level, income level, family structure and family income had significant effects on fertility intention. Positive correlation between education level and income level, indicating that individuals with better educational level and economic status were more likely to have higher fertility intentions. Age and family structure were negatively related, indicating that older age and one-child families were more likely to have lower fertility intentions. Household income also had a significant positive effect on fertility intentions.

5.4. Analysis results

Based on the above data analysis results, the fertility intention of the only-child family is generally low, which may be influenced by personal characteristics (e. g., age, education level), family environment (e. g., family structure, family income) and social factors. Older individuals, higher educational level and better financial status were more likely to have higher fertility intentions. In addition, the family structure and family income also have a certain influence on the fertility intention.

6. Discussion

The aim of this research was to examine the differences in fertility intentions between one-child and non-only child families and analyze the mechanisms of individual characteristics and family environment on fertility intentions. Through the analysis of large-scale sample data, we draw some important findings with important implications for the relevant policy formulation and social development.

First, we found that one-child families had generally have lower fertility intentions, relative to non-one-child families. This is consistent with previous researches showing that the one-child policy somewhat suppresses the fertility desire of one-child families. Families with only child usually have only one child, and parents focusing more energy and resources on this child may result in less family pressure and responsibility, thus reducing their willingness to have children.

Second, our results showed a significant influence of individual characteristics and family environmental factors on fertility intentions. Education level and income level were positively correlated with fertility intention, indicating that individuals with better education level and economic status were more likely to have higher fertility intentions. This may be because people with higher education attach more attention to personal achievement and career development, and those with better economy are more able to afford the cost of raising their children.

In addition, age and family structure also have a certain influence on fertility intentions. Older individuals and one-child families were more likely to have lower fertility intentions. This may be because the older individuals are more concerned about their own personal development and quality of life, and the one-child families pay more attention to the education and growth of their children, thus reducing the desire to have children.

7. Conclusion

Through the research on the difference in fertility intention between only child and non-only child families, the following conclusions:

Only-child families generally have low willingness to bear: compared with non-only-child families, only-child families tend to have lower willingness to bear. This may be because the implementation of the one-child policy makes the family pressure and responsibility of the one-child family low, so they are relatively reluctant to expand the family size.

Personal characteristics have an impact on fertility intention: education level and income level were positively correlated with fertility intention. Individuals with higher educational level and better financial status were more likely to have higher fertility intentions. This may be because people with higher education attach more attention to personal achievement and career development, and those with better economy are more able to afford the cost of raising their children.

Family environment has an impact on fertility intention: age and family structure are negatively correlated with fertility intention. Older individuals and one-child families were more likely to have lower fertility intentions. This may be because the older individuals are more concerned about their own personal development and quality of life, and the one-child families pay more attention to the education and growth of their children, thus reducing the desire to have children.

In conclusion, our results support the existence of differences in fertility intentions between only children and non-only child families and reveal mechanisms underlying the influence of individual characteristics and family environment on fertility intentions. This has important implications for the formulation of relevant policies. In order to promote the balanced development of the population structure and the improvement of the family happiness index, we suggest that the government and social institutions should pay attention to the fertility willingness of the one-child family, and take measures to encourage the one-child family to increase the fertility desire. For example, one-child families can help reduce family pressure and financial burden by providing policy support such as baby leave and educational benefits. At the same time, it is also necessary to strengthen the guidance of social and cultural values, advocate a positive concept of childbearing, and eliminate social prejudice and expectations for families with only child.

It should be pointed out that some limitations exist in this research. First, our research used cross-sectional data and could not capture the changing and developmental process of individual

fertility intentions. Future researches could employ a longitudinal research design to follow changes in fertility intentions in one-and non-one-child families to gain a deeper understanding. Secondly, our research only considered the influence of personal characteristics and family environment factors on fertility willingness, and other possible influencing factors such as social support network and employment opportunities were not included. Further researches could consider more factors in order to obtain a more comprehensive explanation.

In conclusion, this research deeply explored the differences between single child and non-only child families through analyzing large-scale sample data, and revealed the mechanism of individual characteristics and family environment on fertility intentions. This is of great significance for the formulation of the one-child policy and the population development. It is hoped that the results of this research can provide a scientific basis for relevant policies and social development, and promote the balanced development of population structure and the improvement of family happiness index.

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