Academic Journal of Management and Social Sciences
ISSN: 2958-4396 | Vol. 7, No. 2, 2024

Level of Urbanization, Social Security Satisfaction and Fertility Intentions

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Abstract: Using the data from the China Social Situation Survey (CSS2021), we investigated the effect of social security satisfaction on fertility intention of people of childbearing age. Using OLS model and ordered probit model for regression, it is found that there is an inverted U-shaped curve relationship between social security satisfaction and fertility intention of people of childbearing age, which is "increasing first and then decreasing", and when social security satisfaction has not crossed the inflection point, it is in the stage of facilitating the influence on fertility intention; after interacting social security satisfaction with urbanization level, it has a certain inhibiting effect on fertility intention; after interacting social security satisfaction with urbanization level, it has a certain inhibiting effect on fertility intention. When social security satisfaction has not crossed the inflection point, it is in the promotion stage; after interacting social security satisfaction with urbanization level, it has a certain inhibiting effect on fertility intentions; after analyzing the heterogeneity, it is found that social security satisfaction has different degrees of influence on the fertility intentions of people of different ages and different regions, and the influence on the fertility intentions of the young group and rural residents is the greatest. Based on this, the government should prevent the spillover of the benefits of childbearing, reduce the cost of childbearing for the residents, build a birth-friendly society, and promote the synergistic and high-quality development of population and social security in China.

Keywords: Fertility Intentions; Social Security Satisfaction; Urbanization Level; Inverted U-shaped Relationship.

1. Introduction

Population resources, as a fundamental resource, are crucial to the realization of sustainable economic development. With the changes in China's social structure and the acceleration of urbanization, the phenomenon of population aging and childlessness is becoming more and more serious, and the data of the National Bureau of Statistics show that China's birth rate has been declining year after year since 2017, and in 2022 China's annual birth rate of 9.56 million people will be 1.06 million fewer than in 2021. The continued low birth rate has become a fact, gradually attracting social attention[1] Social security is closely related to China's economic and social development. Social security is closely related to China's economic and social development, and with the increasing aging of China's population and the transformation of family concepts, the impact of social security on fertility intentions has received great attention. On this basis, it is of great significance to further explore the mechanism of social security satisfaction on the fertility intention of people of childbearing age, in order to improve the fertility intention of the whole population and to promote the convergence of the fertility policy and the economic and social system.

2. Literature Review

Fertility intention is an important area of fertility research, which refers to a kind of subjective expectation and willingness of people about their own fertility behavior and fertility outcomes. Research on fertility intentions can be divided into four categories (Wu Fan, 2020)[2] : the first is to explore the trend of fertility intentions; the second is to examine the difference between fertility intentions and the actual behavior of childbearing; the third is to conduct empirical research on the influencing factors of fertility intentions; and the fourth is to explore the impact of fertility policies on fertility intentions. The article belongs to the third category.

In exploring fertility behavior, foreign scholars have found that individual characteristics and socio-demographic factors are the main factors influencing fertility decisions (Olusegun, Biney et al., 2020)[3] , place of residence, geographic location, and level of economic development are also closely related to an individual's fertility intentions (Akram, Sarker et al., 2020)[4]. The analysis of factors influencing fertility intentions by domestic academics mainly follows the following two paths: one is to analyze micro-individuals and explore the role of individual and family factors on fertility intentions; the other is to study the influence of socio-economic and other factors on fertility intentions from a macro perspective. At the micro level, scholars found that individual health status (Chen et al., 2021)[5] , female education level (He Xiuling et al., 2021)[6], housing (Li Baoli et al., 2022)[7] , marriage (Yang Xue et al., 2021)[8] , family economic conditions and parenting costs (Hong Xiumin, 2022)[9] and family culture (Lu Zhiyu, 2022)[10] and other factors have an impact on the fertility intentions of people of childbearing age. In terms of the macro environment, scholars have focused on the adjustment of the fertility policy (Feng Xiaotian, 2022)[11] and social security system (Yu Yong, 2022)[12]. Different fertility policies will have differentiated impacts on the fertility behavior of women of childbearing age. However, given that fertility intention affects actual fertility behavior to a greater extent than fertility policy, China's fertility rate rose briefly after the relaxation of fertility policy, but then declined again (Yan Yueping, 2022)[13] On the one hand, social old-age security has impacted the traditional concepts of "raising children for old age" and "succession", and on the other hand, it has alleviated the worries of urban residents about "financial dependence on

others" and reduced their fertility intentions. on the other hand, it reduces urban residents' worries about "financial dependence on others" and lowers the group's willingness to have children (Ruan Rongping et al., 2021)[14]. However, there are also studies that show that the subsidized births have been a major contributor to the decline in fertility. However, some studies have also shown that subsidized health insurance helps to increase fertility intentions, while the high burden of health insurance premiums acts as a disincentive, and the government's "targeted" adjustment of social security to alleviate the cost of parenthood can achieve the goal of improving the effects of fertility policy (Huang Xiunv, 2019)[15]. Other scholars use the 2017 micro-data of the China General Social Survey (CGSS) to empirically analyze that urbanization of household registration inhibits urban residents' willingness to have multiple births (Zhou Hui, 2022)[16].

Cardozo, an American scholar, firstly proposed the concept of "satisfaction" and conducted a lot of researches on the basis of it. In the 1980s, the concept of "satisfaction" gradually became the mainstream of western economic development. Many factors affect customer satisfaction, such as individual expectations, experiences and cognitive biases (Yang, 2010)[17]etc. Customer satisfaction is the subjective experience of buyers after making a purchase decision, and its core concept is expectation. Currently, in China, public satisfaction assessment based on expectation theory has been widely used in many public service areas such as employment service, education and social security, especially in assessing the social service supply process. If people's perception of social services is not high enough, their satisfaction level will also decrease, and on the contrary, it will increase (Yao, 2023)[18] . Social security satisfaction is significantly affected by income, education and occupation (Wen Tailin et al., 2020)[19] ; social security participation status, social status and sense of social fairness, on the other hand, are the main factors of social security satisfaction of urban residents (Sun Lili et al., 2019)[20] . Regarding the domestic academic community, scholars' studies on social security satisfaction on fertility intentions have mostly focused on the public service perspective (Liang Chengcheng et al. 2019; Kong Zeyu et al. 2020; Wu Xiaoyong et al. 2022)[21][22][23].The studies have all proved that improving the satisfaction of public services can effectively increase the fertility intention of the reproductive age population.

In summary, fertility intentions are affected by a number of factors, which have been explained in the literature from a variety of perspectives. However, the current research tends to focus on a smaller group of women and lacks an analysis of the fertility intentions of all members of society, and few studies on the impact of social security on fertility intentions have considered the possible non-linear relationship between social security satisfaction and fertility intentions. Therefore, on the basis of examining the relationship between social security satisfaction and fertility intentions, the study further confirms whether there is an inverted "U" effect of social security satisfaction on fertility intentions; explores the moderating effect of the urbanization level on the relationship between social security satisfaction and fertility intentions through the test of the interaction mechanism; and analyzes the effect of social security satisfaction on fertility intentions from the perspectives of age and hukou heterogeneity. It also analyzes the differences in the effects of social security satisfaction on fertility intentions from the perspectives of age and hukou heterogeneity, so as to provide policy ideas for better balancing the social security system and fertility incentives and realizing the sustainable development of population and society.

3. Research Hypotheses

The impact of social security satisfaction on fertility intentions is rooted in the development of social support theory. In the field of psychiatry, Cobbs introduced the concept of Social Support, which is defined as information received by an individual that assures him or her that he or she is cared for and respected by others.[24] The concept of social support was later recognized by academics. Since then, the concept has been widely discussed and improved, and gradually formed a more complete theoretical system. The central idea of this theory is that when an individual feels care, respect, understanding, response and help from others in a social group, he or she will be able to experience happiness and warmth in a deeper way, which will greatly enhance the individual's psychological satisfaction and play a positive role in his or her behavioral choices. The improvement and implementation of the social security system will increase the subjective satisfaction of the individual and enhance the individual's motivation and confidence in childbearing, and thus the individual will be more willing to bear children. While the demographic economist Havey-Leibens Havey (1957) has proposed the theory of marginal child choice, which argues that the key to a childbearing person's decision whether to have children, and how many children to have, lies in the ratio between the cost spent on childbearing and the future benefits[25].The marginal child choice theory is based on the ratio between the cost of having children and the future benefits. When the social security system is not well developed, people will tend to have more children to ensure adequate support and care in old age. However, when the social security system is established and perfected to a certain extent, the family's need for children as future old age security will be reduced, and people can rely on social welfare rather than children to secure their old age life, resulting in people choosing to have fewer or no children. It can be seen that social security satisfaction and fertility intentions may not have a single linear relationship, according to which it is proposed:

Hypothesis 1: Social security satisfaction has a non-linear effect on fertility intentions among people of childbearing age.

In the process of urbanization that transforms a large number of rural population into urban population, population agglomeration brings huge scale effect, drives local economic development, and effectively enhances the efficiency of social security service provision. Considering that there is a correlation between the level of urbanization and social security satisfaction affecting fertility intentions, the hypothesis is proposed:

Hypothesis 2: The level of urbanization has a moderating role in the process by which social security satisfaction affects fertility intentions.

At the same time, different groups of childbearing age have different perceptions of social security services, and their fertility intentions may show greater differences. In terms of the age of the childbearing age groups, the younger groups face greater employment and housing pressures than the middle-aged groups, and are also more concerned about their future development and quality of life, and have a higher demand for social security; therefore, for the younger groups,

an increase in social security satisfaction may enhance their fertility intentions. Influenced by the urban-rural dual structure, rural residents may be more concerned about childbirth. Accordingly, the following hypotheses are formulated.

Hypothesis 3: The higher the level of social security satisfaction, the stronger the effect on fertility intentions in the young reproductive age group.

Hypothesis 4: The higher the level of satisfaction with social security, the higher the fertility intentions of the rural reproductive age group.

4. Empirical Analysis

4.1. Data Sources

The article uses data from the China General Social Survey (CGSS), a national probability sample household survey initiated by the Institute of Sociology of the Chinese Academy of Social Sciences (CASS) since 2005 and conducted once every two years. The latest public data of the survey in 2021 was selected, and 10,136 qualified questionnaires were collected. According to the characteristics of the research object, since the United Nations World Health Organization (WHO) defines 15-49 years old as the age of the reproductive stage, and the target respondents of the CGSS questionnaires for the year of 2021 are the citizens who have reached the age of 18 years old or above, the urban and rural residents of the age of 18-49 years old were selected as the research object, and after the processing 5197 samples were obtained.

4.2. Definition of Variables and Descriptive Statistics

The explanatory variable is the number of children desired. Based on the CSS2021 questionnaire responses to the question "How many children do you think is ideal for a family in general?" The higher the value, the stronger the willingness to have children. Respondents' answers ranged from 0 to 11. In view of the relatively small number of samples that actually gave birth to six children and the number of samples that responded with more than six children, the data processing was optimized by shrinking the tails.

The explanatory variable is satisfaction with social security. According to the questionnaire of CSS2021, which asks respondents, "How satisfied are you with the basic housing security such as old age security/medical security/ employment security/urban and rural minimum living security (low-income security)/government-provided affordable housing, public rental housing, low-cost housing, etc.?", the respondents will rate the five types of social security according to their personal subjective feelings. social security will be rated according to their personal subjective feelings. In this assessment system, a score of 1 indicates extreme dissatisfaction and a score of 10 indicates extreme satisfaction. In view of the subjective bias of residents in assessing the status of social security, the level of satisfaction with the five different types of social security will be summed up and then evenly distributed to each sample on the basis of eliminating the influence of subjective factors.

The moderating variable is the level of urbanization. The proportion of regional urban population to the total population is selected as a proxy indicator, and it is also entered into the model regression as a social factor variable. In addition, fertility intentions are affected by individual attributes, family characteristics and social factors. Based on the existing literature and the original questionnaire of CSS2021, the study selects individual attribute variables affecting fertility intentions of people of childbearing age: age, gender, ethnicity, religious belief, socioeconomic status, and education level. Family characteristics variables: type of household registration, marital status, and number of siblings. The social factor variables were added to include whether or not one has health insurance or public health care.

The descriptive statistics of the variables involved in the study are shown in Table 1.

Table 1. Descriptive statistics of the main variables

Variable name	Variable definition	Obs	Mean	Std..Dev.	Min	Max
Fertility	Number of children desired	5174	1.973	0.629	0.00	6.00
Social security satisfaction	Mean value of respondents' satisfaction with the five types of social security added together	3768	6.890	2.230	1.00	10.00
Age	18-49 years	5197	34.710	9.288	18.00	49.00
Sex	Male = 1; Female = 0	5197	0.419	0.493	0.00	1.00
Ethnic group	Han Chinese = 1; Other = 0	5191	0.914	0.281	0.00	1.00
Religious belief	Yes = 1; No = 0	5196	0.139	0.346	0.00	1.00
Educational attainment	Elementary and below = 1; Middle school = 2; High school and specialized = 3; College and above = 4	5193	2.735	1.080	1.00	4.00
Marital status	Married = 1; unmarried or divorced = 0	5195	0.701	0.458	0.00	1.00
Socio-ecoomic status	Lower = 1; Lower middle = 2; Middle = 3; Upper middle = 4; Upper = 5	5141	2.334	0.894	1.00	5.00
Number of households and total population	Agricultural households = 1; non-agricultural households = 0	5165	0.622	0.485	0.00	1.00
Number of siblings	Continuous variable	5196	1.702	1.536	0.00	11.00
Availability of health insurance or publicly funded medical care	Yes = 1; No = 0	5052	0.644	0.479	0.00	1.00
Urbanization level	Continuous variable	5197	64.446	8.589	36.61	89.30

4.3. Research Methodology

4.3.1. OLS Model

The OLS regression model is used to determine the level of social security status based on the social security satisfaction scores of people of childbearing age, and the OLS regression model is used to investigate how social security satisfaction affects the fertility intentions of people of childbearing age. The specific model settings are as follows:

$$Fertility=\alpha 0+\alpha 1satisfy+\alpha 2X+\varkappa \quad (1)$$

$$Fertility=\beta 0+\alpha\beta 1satisfy+\beta 2city+\beta 3satisfy\bullet city+\beta 4X+\varkappa \quad (2)$$

4.3.2. Ordered Probit Model

Since the expectation and variance of the explanatory variable fertility do not meet both the assumption of equal dispersion and the assumption of over-dispersion with a variance significantly larger than the expectation, which makes the Poisson model and negative binomial regression model unsuitable in this context, the regression analyses were conducted using the ordered Probit model, aiming at verifying the robustness of the OLS regression model. Assuming that a0, a1, a2, a3, a4, and a5 are the six segmentation points to be estimated, and that $a0 < a1 < a2 < a3 < a4 < a5$, the definitions are as follows: fertility=0 if fertility* < a0; fertility=1 if a0 < fertility* < a1; fertility=2 if a1 < fertility* < a2; fertility=2 if a1 < fertility < a2 If a1 < fertility* < a2, then fertility = 2; if a2 < fertility* < a3, then fertility = 3; if a3 < fertility* < a4, then fertility = 4; if a4 < fertility* < a5, then fertility = 5; and if fertility ≥ a5, then fertility = 6. fertility = 6. Assuming that $\varepsilon \sim N(0,1)$ and $\Phi(-)$ are cumulative distribution functions, then:

$$P(fertility=0|X)=\Phi(a_0-X\beta)$$
$$P(fertility=1|X)=\Phi(a_1-X\beta)-\Phi(a_0-X\beta)$$
$$P(fertility=2|X)=\Phi(a_2-X\beta)-\Phi(a_1-X\beta)$$
$$P(fertility=3|X)=\Phi(a_3-X\beta)-\Phi(a_2-X\beta)$$
$$P(fertility=4|X)=\Phi(a_4-X\beta)-\Phi(a_3-X\beta)$$
$$P(fertility=5|X)=\Phi(a_5-X\beta)-\Phi(a_4-X\beta)$$
$$P(fertility=6|X)=1-\Phi(a_0-X\beta)$$

This gives the sample likelihood function, which is used to solve for the most likely parameter values using the method of great likelihood estimation (MLE), which is different for each parameter.

Benchmark regression

4.3.3. Benchmark Regression

Table 2. Regression results of social security satisfaction on fertility intentions

Variable	OLS Model			Ordered Probit Model		
	(1)	(2)	(3)	(4)	(5)	(6)
Social security satisfaction	0.0562*** (2.6545)	0.0502** (2.3868)	0.0538** (2.5342)	0.3202*** (3.2578)	0.3208*** (3.2327)	0.3351*** (3.3291)
Social security satisfaction squared	-0.0033** (-2.0035)	-0.0027* (-1.6868)	-0.0030* (-1.8347)	-0.0206** (-2.5703)	-0.0205** (-2.5471)	-0.0216*** (-2.6511)
Age	-0.0025* (-1.7648)	-0.0045*** (-3.0996)	-0.0045*** (-3.0024)	-0.0141* (-1.8272)	-0.0131 (-1.5987)	-0.0136 (-1.6252)
Sex	0.0682*** (3.3819)	0.0784*** (3.9166)	0.0816*** (4.0190)	0.1055 (0.9409)	0.1169 (1.0372)	0.1655 (1.4298)
Ethnic group	-0.2528*** (-7.2850)	-0.2252*** (-6.5387)	-0.1906*** (-5.3597)	-0.6984* (-1.8012)	-0.6965* (-1.7683)	-0.6945* (-1.6858)
Religious belief	0.1450*** (5.0085)	0.1272*** (4.4361)	0.1286*** (4.4190)	0.1922 (0.9759)	0.1838 (0.9338)	0.1819 (0.9200)
Junior high school	-0.1442*** (-4.1412)	-0.0817** (-2.3306)	-0.0645* (-1.8037)	-0.0851 (-0.3390)	-0.0457 (-0.1801)	-0.0293 (-0.1147)
High School and Specialized	-0.2358*** (-6.2038)	-0.1515*** (-3.9127)	-0.1380*** (-3.4959)	-0.2362 (-0.9131)	-0.1455 (-0.5435)	-0.1571 (-0.5830)
University and above	-0.3180*** (-8.6665)	-0.2043*** (-5.2920)	-0.1722*** (-4.3110)	-0.6641*** (-2.7196)	-0.5503** (-2.1366)	-0.5037* (-1.9142)
Marital status	0.1499***(5.5945)	0.1344*** (5.0704)	0.1419** *(5.2682)	0.5719*** (4.0988)	0.5506*** (3.9356)	0.5663*** (4.0044)
Socio-economic status	0.0425*** (3.7697)	0.0457*** (4.0989)	0.0440*** (3.8938)	0.2079*** (3.2076)	0.2134*** (3.2779)	0.2157*** (3.2387)
Number of households and total population		0.0736*** (3.4369)	0.0616*** (2.8298)		0.1352 (1.1154)	0.0834 (0.6692)
Number of siblings		0.0643*** (8.3941)	0.0635*** (8.2161)		0.0360 (0.7079)	0.0412 (0.7996)
Availability of health insurance or publicly funded medical care			-0.0106 (-0.5129)			0.0479 (0.4023)
Urbanization level			-0.0059*** (-4.9650)			-0.0102* (-1.6575)
N	3730	3709	3603	3730	3709	3603
R-squared	0.075	0.096	0.101	0.1195	0.1229	0.1283

t statistics in parentheses. * p < 0.1,** p < 0.05,*** p < 0.01

The effect of social security satisfaction on fertility intentions was examined by gradually adding control variables. Table 2 presents the results of the baseline regression based on the OLS model. Column (1) shows the model with the addition of individual attribute variables. Column (2) is the regression result with the addition of family characteristics variables to column (1). Column (3) shows the regression results with the further addition of social factor variables. The results show that social security satisfaction positively affects fertility intentions at the 1% level of significance. When all control variables are added to column (3), the effect of social security satisfaction on fertility intentions remains significantly positive. The results show that the higher the satisfaction with social security among people of childbearing age, the stronger the fertility intention. Meanwhile, in order to explore whether there is a nonlinear relationship between social security satisfaction and fertility intentions, the square term of social security satisfaction is added to the benchmark regression model. The results show that both the primary and secondary terms of social security satisfaction have a significant effect on fertility intention, and the primary term is positive and the secondary term is negative, indicating that social security satisfaction has an inverted "U" effect on fertility intention, when the social security satisfaction of people of childbearing age is low, the increase in satisfaction promotes the increase in fertility intention; however, when the satisfaction of people of childbearing age reaches a certain level, the satisfaction of people of childbearing age increases, the fertility intention of people of childbearing age increases. However, when the satisfaction level of people of childbearing age reaches a certain level, its positive effect on fertility intention will decline. Hypothesis 1 is verified. According to the model estimation, the inflection point is 8.99. Combined with the results of descriptive statistics, the mean value of social security satisfaction is 6.89, which is located on the right side of the inflection point, indicating that when social security satisfaction reaches the inflection point, it will inhibit the rise of fertility intentions. At the same time, in order to determine the accuracy of the inverted "U" relationship between social security satisfaction and fertility intentions, the test was carried out using the Utest command, and the test results showed that (t=2.65, P=0.0040733<0.1) the original hypothesis of monotonicity of the function was rejected, and the Slope was negative at the upper bound and positive at the lower bound, and the extreme point was 8.99, and the mean value was 6.89, which was on the right side of the inflection point. The extreme point is 8.99, which proves the robustness of the inverted "U" relationship.

4.3.4. Robustness Test

In order to test the robustness of the constructed benchmark model, the ordered probit model is chosen for calculation by reference to the existing research, and all variables are included in the model for regression analysis, and the results are compared with the regression results of the OLS model to verify the robustness of the benchmark model. As shown in Table 2, the regression results of the ordered probit are consistent with those of the OLS model, and it is still verified that social security satisfaction has a significant inverted "U" shape effect on fertility intentions, thus testing the robustness of the benchmark regression model.

4.3.5. Analysis of Moderating Effects

In order to further study the relationship between urbanization, social security satisfaction and fertility intentions, the study takes the level of urbanization as a moderating variable and conducts regression tests on formula (2), and the results of the analysis are shown in Table 3, the regression coefficients of the cross-multiplication terms of social security satisfaction and urbanization are negative, with the opposite sign of the coefficients of social security satisfaction, i.e., in the process of social security satisfaction affecting the fertility intentions in a positive way, urbanization plays an The reason is that as urbanization advances, urbanization plays an inhibitory role. The reason is that with the advancement of urbanization, especially in economically developed cities, house prices, education, medical care and other expenditures continue to climb, and the cost of childbearing for people of childbearing age gradually increases; urbanization brings not only economic changes, but also changes in lifestyles and values, with a faster tempo of life and more individualized pursuits, and many young people are more inclined to personal development than to the traditional meaning of having more children and having more happiness. The level of urbanization may have a negative moderating effect on the relationship between social security satisfaction and fertility intentions through economic pressures, upbringing costs, personal development, and changes in values. Thus, even if social security satisfaction increases, these challenges and changes brought about by urbanization may still dampen the fertility intentions of the reproductive age group.

Table 3. Analysis of moderating effects

Variable	(1)	(2)
Social security satisfaction	0.0158*** (3.3981)	0.0724** (2.1932)
Urbanization level	-0.0058*** (-4.9314)	0.0003 (0.0837)
Social security satisfaction × level of urbanization		-0.0009* (-1.7320)
Control variable	Containment	Containment
_Cons	2.2922*** (21.7124)	1.8992*** (7.5880)
N	3603	3603
R-squared	0.100	0.101

t statistics in parentheses. * p < 0.1,** p < 0.05,*** p < 0.01

4.3.6. Heterogeneity Analysis

The full sample was regressed into groups according to different ages and household types to explore the heterogeneous effects of social security satisfaction affecting the reproductive age group. And the sample of people of childbearing age is divided into two groups of 18-35 years old and 36-49 years old, which are set as low age group and high age group respectively. The full sample was divided into agricultural and non-agricultural household groups according to the type of household registration. Table 3 presents the results of the heterogeneity analysis.

In view of the fact that the factors influencing fertility intentions vary among different age groups, the respondents were divided into two groups according to their age. One is the low age group between 18-35 years old and the other is the high age group between 36-49 years old. The results in Table 3 show that social security satisfaction positively affects fertility intentions at 1% level of significance in the lower age group and the inverted "U" shape of social security

satisfaction on fertility intentions remains significant, while the effect of social security satisfaction on fertility intentions in the upper age group is not significant. The possible reason is that the lower age groups usually do not accumulate enough financial assets and face greater economic risks and uncertainties, and social security policies are important for their financial security and income stability, which in turn affects their fertility behavior. Therefore, hypothesis 3 is valid.

Table 4. Heterogeneity analysis

Variable	Age grouping		Household grouping	
	Lower age group	Higher age groups	Agricultural port	Non-agricultural account
Social security satisfaction	0.1073*** (3.5854)	0.0094 (0.3040)	0.1282*** (3.2267)	0.0185 (0.7287)
Social security satisfaction squared	-0.0060*** (-2.6982)	-0.0005 (-0.2238)	-0.0087*** (-2.9617)	-0.0001 (-0.0566)
Control variable	Containment	Containment	Containment	Containment
_Cons	2.2990*** (13.4615)	1.7711*** (11.4723)	1.6216*** (7.6032)	2.4899*** (17.2207)
N	2060	1543	1447	2156
R-squared	0.115	0.083	0.076	0.098

t statistics in parentheses.* $p < 0.1$,** $p < 0.05$,*** $p < 0.01$

At the same time, the impact of social security satisfaction on the fertility intentions of people of childbearing age in different hukou households, as we can observe from the study, social security satisfaction has a positive impact only on residents of agricultural hukou, and passes the significance test of 1%, and there still exists an inverted "U"-shaped relationship. This suggests that the long-term existence of the urban-rural dual structure has led to a differentiation in the level of social security, which affects fertility intentions and leads to certain urban-rural differences. The traditional concept of "raising children for old age" still influences rural residents, who believe that raising children is an important resource for old age; however, the social security system in rural areas is relatively backward, and farmers do not have as much protection as urban residents in terms of living, medical care, housing, and so on.[25] . Rural residents generally face problems such as unstable economic income, limited employment opportunities, and lack of social welfare, and their costs of childbearing and upbringing are greater, and the impact of social security on farmers' fertility intentions is more significant. Hypothesis 4 is verified.

5. Conclusion and Policy Recommendations

Based on survey data from the China Social Survey (CSS2021), the study explores whether social security satisfaction can influence fertility intentions of people of childbearing age at the micro level, analyzes the pathways and mechanisms through which social security satisfaction influences fertility intentions, and analyzes the heterogeneity of such influences under different conditions. The conclusions show that.

First, there is a significant positive correlation between the social security satisfaction of people of childbearing age and fertility intentions, but the relationship between the two is not a single linear relationship, but an inverted U-shaped curve of "first increasing, then decreasing". That is, the improvement of the social security system can provide people with a greater sense of security in life, with the continuous improvement of social security satisfaction, reducing the economic pressure and uncertainty of the future brought about by childbearing groups, the willingness to give birth will be gradually increased; but when social security satisfaction reaches a certain level, people will think that the existing social security is already sufficient, and further increase cannot bring more security and practical benefits, and too perfect social security is not enough to bring about more security and practical benefits. However, when social security satisfaction reaches a certain level, people will think that the existing social security is already enough, and further increase will not bring more security and practical benefits, and an overly perfect social security system will also reduce people's worries about their old age, and produce a substitution effect on the traditional thought of relying on their children's old age, so fertility intention will no longer be increased. The higher the level of urbanization, the smaller the promotion effect of social security satisfaction on fertility intentions; third, after further group regression, it is found that the increase in social security satisfaction has a more pronounced effect on the fertility intentions of the lower age groups and rural residents. Based on the conclusions of the study, the following recommendations are made.

First, in promoting the process of urbanization, it is necessary to guard against the spillover of the benefits of childbearing and to comprehensively consider and balance social policies in all areas. Focusing the prevention and control of declining fertility levels on rural areas and areas with low levels of urbanization, we should improve the social security systems and public service systems in these economically underdeveloped areas, such as childbirth-related labour and employment, health care and housing security, so as to reduce the burden of childbearing and increase the willingness to give birth. Second, optimizing the quality of social security services to meet the urgent needs of residents, safeguarding basic welfare, and vigorously developing service systems including maternity health, universal childcare for 0-3 year olds, and economic support for childcare, so as to alleviate the pressure on people of childbearing age to give birth and take care of their children. Third, optimize childbirth-related policies and enhance cultural propaganda. Relevant government departments should strengthen the publicity and interpretation of the three-child maternity policy, change the concepts of childbearing and family among childbearing groups, and actively lead the culture of childbearing to be compatible with socialism with Chinese characteristics in the new era, so as to ensure sustainable development of the population policy and the long-term stability of the social welfare system.

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