Female Birth Cost: The Relationship between Education Level, Occupation and Second Child Birth Decision——An Empirical Analysis Based on 2014 Population Dynamic Monitoring Data

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Abstract. Modern women pursue independence and self-development, while women take care of their children in the family to assume heavier responsibilities, which makes women conflict between occupation and birth. Based on the female birth cost, this paper uses the linear probability and logit model of the 2014 national floating population dynamic monitoring survey data. It is found that the higher the female education level, the lower the childbearing willingness of the second child; the more stable the female occupation or the more Good development prospects, the lower the willingness of the two children to have a child. Modern women are paying more and more attention to the development of their own professions, and they are more focused on the former between work and childbearing.

Introduction

It proposed to liberalize the policy of two children in 2013. The two-child policy has been fully implemented since January 1, 2016, but the promotion of fertility is still not significant enough. Liu Hongyan et al.(2015)[1] found that based on the data of the“Two-child policy”for one year, there was no obvious birth accumulation in the country and in all provinces. Since the implementation of the“Comprehensive Second Child”policy, the number of couples who filed for the birth of two children has fallen by less than half of the expectations. In the case of the“Comprehensive Second-Child Policy”, there are mainly reasons for rising maternity costs and unattended (Fu Wen, 2018)[2].

At present, research on fertility will focus on the induction of influencing factors. Tan Jiangrong (2018)[3] used the 2016 national mobile population dynamic monitoring data to find that gender, age, education level and age of one child affected the two children's willingness to live in Chongqing. On the other hand, it explores the impact of economic factors on fertility willingness, such as social security, family income levels, and housing prices. From previous studies, it was found that there is a significant gender difference in fertility willingness. Female employment is the embodiment of social civilization progress, and it is also the guarantee for women's economic independence and self-development. “Childbearing” is an important part of family decision-making. Because of women's own physiological characteristics, women are required to seek a balance between their professional development and their families. Therefore, this paper mainly studies the career choices of women and the impact of income on the fertility willingness of the two children, based on the perspective of female birth costs.

This paper uses the 2014 population dynamics monitoring data to study the relationship between women's self-development and fertility. The general framework of this paper is as follows: the second part reviews the relevant research literature; the third part is the data source, the variable setting and the setting of the measurement model; the fourth part is the empirical result and analysis; the fifth part is the research conclusion.

Literature Review

From the perspective of neoclassical economics, the theoretical framework of fertility relies mainly on Becker (1960), and for the first time, under the framework of utility maximization, discusses

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family decision-making behaviors closely related to fertility behaviors such as birth weight, quality, and human capital investment. The theory of consumer behavior is applied to family fertility decision-making, and the utility of fertility and other items is maximized by constructing a cost-benefit function. When the family income level is certain, the number of children is determined by the price. When the family income changes, the parent's concept of childbearing also changes.

The existing literature has an impact on the fertility willingness based on female income. Butz and Wald (1979)[4] found that the fertility rate of residents in Europe, America and Japan showed a long-term decline with the continuous increase in per capita income. The main explanation is that the employment level and wages of young women have increased, causing a long-term decline in fertility. Some studies have also found that income has a positive relationship with fertility willingness (Zhou Yun, 2016)[5]. The main reason is that women with less income want fewer children, they will adjust the number of births according to their own economic situation, and women with higher incomes want more children. Xiong Yonglian[6] and others used panel data from 31 provinces and regions in China from 2001 to 2013. It was found that the increase in income levels, the improvement of women's education level and the development of urbanization have significantly reduced China's fertility rate (2016). Some of the literature focuses on the impact of female labor participation on fertility, and found that female employment is negatively correlated with fertility. Hakim[7] found that the female labor participation rate in the United States had a negative impact on fertility. Some studies using data from Hong Kong, China, found that female labor participation rate rose by 1%, and fertility rate fell by 0.51% (Yi Junjian, Yi Xingjian, 2008)[8]. Wang Wei et al.[9] conducted an empirical analysis by constructing a model of household utility function and found that female labor participation rate and education level have a negative impact on fertility rate (2016).

There is also some literature based on the perspective of women's work-child conflict. For women in different working stages, having two children means that the work is interrupted or even difficult to find employment again. Therefore, women may give up the opportunity to have two children in order to maintain their professional status and pursue career development (Yang Fang et al., 2017)[10]. Female employment is not only the need to achieve individual development, but also the need of reality. Although in a family, the economic cost of raising a child is shared by both parents, in real life, the mother's care for the child is more comprehensive, which requires women to pay higher opportunity costs in the pursuit of personal career development and leisure. And compared to a child, this opportunity cost is more explicit (Kang Rui et al., 2016)[11]. Modern society pays more and more attention to the education of children. When there is a dominant conflict between women's occupation and childbearing, that is, women are put into work so that they have less energy to invest in family care, so they will choose not to have a second child to avoid. Low quality parenting. Using the 2014 China Labor Dynamics Survey data, Zhu Yimeng found that the two-children's willingness to work for married women of childbearing age was 8.43% lower than that of non-working married women of reproductive age (2015)[12].

Model Construction and Data Processing

Data sources. The data is derived from the National Population Health Monitoring Survey Data (A) of the National Health and Family Planning Commission in 2014. The data mainly relates to the basic situation of migrants, employment and expenditure, basic public health and medical services, marriage and childbirth and family planning services. And so on. The data survey targets: male and female migrants who lived in the local area for one month or more, and who are not registered in the district (county, city) (aged 15 to 59 years old in May 2014), this article limits the study to 20~49 The current floating population, because the number of people aged 15-19 is married and has a small number of children, and the population over 50 years old rarely has actual birth behavior, so it is excluded. After data processing, the invalid values and missing values of the relevant variables are eliminated, and the detailed information of 32644 visitors is included. Table 1 shows the descriptive statistical characteristics of gender-discriminating variables. From the table, it can be intuitively found that there is a significant difference in the fertility willingness between male and

female children. Therefore, this paper focuses on the relationship between female occupation and childbearing.

Table 1 Descriptive statistics of major variables

	female		male	
Variable	Mean	Std. Dev.	Mean	Std. Dev.
two_child	0.1221	0.3274	0.1315	0.3380
education	10.0569	2.8140	10.3131	2.7289
job1	0.0530	0.2240	0.0845	0.2781
job2	0.2904	0.4540	0.3466	0.4759
age	33.5730	6.9378	34.7859	6.8631
health	0.9154	0.2784	0.9869	0.1136
long_living	0.6217	0.4850	0.6136	0.4869
flotime	4.5229	4.3318	4.7582	4.6307
one_child_gender	0.6114	0.4875	0.6085	0.4881
child_age	9.0045	6.9563	8.6259	6.7944
house1	0.2212	0.4151	0.2080	0.4059
lnincmpc	7.6381	0.5443	7.6890	0.5821
Family size	2.7164	0.7220	2.6498	0.8313

Model Construction

Dependent variable.The explanatory variable of interest in this paper is the fertility willingness of the floating population. Therefore, the sample we selected is the individual who has given birth to one child, and according to the question in the questionnaire, "Is it willing to regenerate a child?" Willingness as a binary variable.

Independent variable.The core explanatory variables in this paper are divided into two aspects. On the one hand, previous studies have shown that education level is positively correlated with income level. Therefore, we use female education level as a proxy variable of income level to study the influence of female education level on the childbearing willingness of the two children. On the other hand, we divide the employment nature into three categories: the first category is government institutions, state-owned and State-owned holding companies, the second category is private, collective, foreign capital, Sino-foreign joint ventures, etc. The third category is self-employed or no formal work unit. On the basis of this classification, the effect of female occupational nature on the fertility willingness of the two children was studied.

Control variable.The control variables are mainly divided into two categories, the first is the individual characteristic variables, which mainly include the age of the floating population, personal health status, long-term residence willingness, current flow time, etc.; then the family characteristic variables, including the age of one child, the gender of a child, The household per capita income log and the size of the local family.

Based on the above variable settings, the following assumptions are made:

Hypothesis 1: The higher the level of education of women, the lower the willingness of the two children to have a child. Based on Hypothesis 1, we set the measurement model as follows:

Linear probability model: $P(\text{ferwill}_{\text{ci}}=1|\,\text{education}_{ci},x_{ci})=\beta\text{education}_{\text{ci}}+x'_{ci}\gamma+\mu_c$

Logit model: $P(\text{ferwill}_{\text{ci}}=1|\,\text{education}_{ci},x_{ci})=G(\text{education}_{\text{ci}}+x'_{ci}\gamma+\mu_c)$

Hypothesis 2: The more stable the nature of women's work, and the better prospects for employment development, the lower the willingness of the two children to have a child. According to Hypothesis 2, we set the measurement model as follows:

Linear probability model: $P(\text{ferwill}_{\text{ci}}=1|\,\text{job}_{ci},x_{ci})=\beta\text{job}_{\text{ci}}+x'_{ci}\gamma+\mu_c$

Logit model: $P(\text{ferwill}_{\text{ci}}=1|\ \text{job}_{ci}, x_{ci})=G(\text{job}_{\text{ci}}+x'_{ci}\gamma+\mu_c)$

Empirical Analysis

For the first hypothesis, the results are shown in the first three columns of Figure 1, where the first two columns represent the results of linear probability model estimation for uncontrolled and controlled urban fixed effects, and the third column represents the logit model estimation results for controlling urban fixed effects. The results of the regression show that the higher the education level of women, the lower the willingness to give birth to their two children, that is, the increase in the fertility willingness of the two children is 4.76% for each additional year of education. The reason can be explained as the higher the level of education on the one hand. It means that women will accept a more diversified concept of childbearing. The traditional concept of "nurturing children and preventing old age" is no longer a key factor for women to choose a second child. On the other hand, Xu Qiuyan and Zhang Qiuzhen (2018) believe that family members are educated. The higher the income, the better. This article takes women's education level as a proxy variable of income level. The higher the education level of women, the higher the income level, which means that the higher the childbearing cost of choosing two children, the more professional women who pursue independence are more willing to give birth. Children pay higher birth costs.

For the second hypothesis, the results are shown in the last three columns of Figure 1. The results show that the reasons for the birth of two children working in institutions, institutions, state-owned and state-controlled enterprises or private, collective, foreign-funded, and Sino-foreign joint ventures are lower than those without formal work units. The reasons are explained as follows: In terms of professional attributes, there is no formal working unit. Institutions, institutions, state-owned and state-owned holding companies have high social status, good welfare, and stable work. They work in private, collective, foreign, and Sino-foreign joint ventures. Stable, and have better prospects for development. For women in different work stages, giving birth to two children means a situation in which work is interrupted or even employment is difficult. Therefore, women may give up giving birth in order to maintain their professional status and pursue career development. The opportunity of two children (Yang Fang et al., 2017). Female employment is not only the need to achieve individual development, but also the need of reality. Although in a family, the economic cost of raising a child is shared by both parents, in real life, the mother's care for the child is more comprehensive, which requires women to pay higher opportunity costs in the pursuit of personal career development and leisure. And compared to a child, this opportunity cost is more explicit (Kang Rui et al., 2016).

Table 2

VARIABLES	LPM1 two_child	LPM2 two_child	Logit two_child	LPM1 two_child	LPM2 two_child	Logit two_child
educa	-0.0046***	-0.0046***	-0.0476***	-	-	-
job1	-	-	-	-0.0215***	-0.0098	-0.143
job2	-	-	-	-0.0125***	-0.0153***	-0.1332***
Control variable	Yes	Yes	Yes	Yes	Yes	Yes
Urban Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes

Conclusion

After empirical research, it shows that the higher the education level of women, the more stable the occupation and the better the development of work prospects, the lower the willingness of their two children to have children. On the one hand, women with higher education level are considered to be more diversified, and modern women pay more attention to self-development and pursuit, and are

reluctant to give birth to two children to lower their quality of life. On the other hand, the higher the level of education means higher income levels, the second child has higher opportunity cost, and the burden of women in the process of caring for children is heavier, there is a conflict between work and childbirth, once selected Birth two children may face employment discrimination, promotion bottlenecks or employment discrimination in re-employment. In order to ensure the effect of the policy of "full liberalization of the two children", on the one hand, it should provide better social security, public services, and a better economic and employment environment; on the other hand, it should fundamentally weaken the conflict between women's work and childbirth. Sex discrimination in employment provides a flexible working environment for women, and converts the opportunity cost of female birth into social cost, thus better promoting the implementation of the two-child policy.

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