

# Study on the relationship between Counter-urbanization and fertility rate in China

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**ABSTRACT.** *In recent years, China's fertility rate has continued to decline is a reality that we have to face, too low fertility rate will have a negative impact on the sustainable development of society. For example, it affects the supply of labor force, weakens the ability of social innovation, reduces the consumption capacity, increases the pressure of pension, and affects social stability. In fact, not only our country, but also the major countries in the world are facing the problem of low fertility. Unlike our family planning policy, most countries have adopted policies to encourage fertility, but the effect of improving fertility is still very little. Therefore, in the face of the severe situation, many experts and scholars have expounded their views and studied whether there are reasonable measures to improve China's fertility rate.*

**KEYWORDS:** *Urbanization, fertility*

## 1. Introduction

According to the Information Office of the State Council, the birth population of China in 2018 was 15.23 million, a decrease of 2 million over the previous year, and the birth rate was only 1.094%. This is also the first time that China's birth population has declined since the full liberalization of second births in October 2015.

## 2. Fertility Development in Nordic Countries

Some researchers have found that the fertility curves of Nordic countries are quite different from those of other developed countries. Nordic countries did not experience a large-scale baby boom after World War II. The cold climate and geopolitics at the center of the Cold War made the fertility willingness of the four Nordic countries generally low. By the 1970s, the Nordic average total fertility rate had fallen below 1.5, while the European average was still 2.5. However, incredibly,

since the 1980s, the birth rate in Nordic countries has rebounded dramatically, while the fertility rate in Europe has been declining over the same period. By the mid-1990s, the Nordic total fertility rate was over 1.8, while the European average had fallen below 1.7 over the same period. Nordic countries did not liberalize immigration policies on a large scale, and did not achieve the expected effect of welfare subsidies to encourage fertility. So what causes the fertility rate to rise?

There are many factors contributing to this phenomenon. One of the key factors is that the middle class in Nordic left the city center after the development of society and bought a house in the suburbs. The living area and population density of Nordic countries have a significant impact on fertility. The thinner the population, the higher the fertility. In fact, it is not difficult to understand that only people living in a more natural environment can stimulate their original reproductive desire, and industrialization, urbanization itself is the best way to inhibit human instinct. Nordic anti-urbanization movement began in the mid-20th century and lasted for a long time. Nowadays, the capital of Nordic countries accounts for a small proportion of the population, and more than half of the residents live in the suburbs. On the contrary, China is still in the accelerated period of urbanization, and the population is constantly concentrated in the central cities. So whether Nordic successful experience can achieve results in China is still unknown.

Another well-known mouse experiment introduced by scholars shows that fertility is difficult to improve. The so-called rat experiment was conducted in the 1960s by John B. Callhoun, an American ecologist. Mice and humans are both mammals and social animals, and have obvious hierarchical structure. Therefore, the deduction of the social structure of mice can bring great inspiration to humans.

### **3. Investigation of experimental data**

At the beginning of the experiment, four mice were placed in enclosed spaces, and the mice reproduced as fast as people expected. The population doubled every 55 days on average. After 315 days, the mice were divided into 14 populations, totaling 620. At this time, with the increasingly crowded living space, the social contradiction of rats is also deteriorating. At the same time, the fertility rate is gradually flat from rising, but the whole population is still growing slowly. Until 560 days, the population of mice reached a peak of 2200, which left the upper limit of 3840 estimated by the experimenters. Strange things happened. The whole population stopped breeding, the male rats stopped fighting and courting, the female rats stopped reproductive behavior, and the population gradually went to extinction. After 1588 days of the experiment, only 27 mice were left, and they were unable to reproduce.

It is believed that rats have their own social structure. If the social density is too high and the competition is too fierce, many rats will lose the significance of social behavior and eventually lead to the collapse of the whole social structure. In contrast, with the continuous development of industrialization, social competition is becoming increasingly fierce. If the pressure of life remains high, the negative idea

of avoiding the world will gradually spread, eventually affecting the daily behavior of human beings, especially the behavior of reproductive offspring, leading to the declining fertility of society.

Both Nordic experience and rat experiments seem to explain the same thing. Urbanization is the primary cause of fertility decline. The fertility rate in rural areas is relatively higher than that in urban areas, which is also due to the livable and spacious living environment which brings about the improvement of fertility desire. According to the statistical results of 2018, the urbanization rate of our country is 59.58%. There are 15 percentage points left the average level of developed countries. The current situation is that our country is in the period of accelerated urbanization and is developing from single-node cities to urban agglomerations. It is expected that by the middle of the 21st century, China will form three core urban agglomerations: the Yangtze River Delta, the Pearl River Delta, Beijing, Tianjin and Hebei, and so on. Several small urban agglomerations. From the experience of developed countries, Counter-urbanization is not the process after urbanization, but always accompanied by the synchronous development of urbanization, especially when the urbanization rate reaches 75%, it gradually spreads from the center of urban agglomeration to the surrounding areas.

Then, which region of our country is most likely to take the lead in realizing the anti-urbanization. I think that there are several necessary conditions for realizing the overall anti-urbanization of the region: first, the region needs enough undeveloped regions; secondly, the per capita GDP and per capita income of the whole region are at a close level; thirdly, the region has developed public transport; fourthly, the region needs a sufficient number of undeveloped regions. They have similar cultural and political systems.

According to this criterion, I think that in the Yangtze River Delta region, it is most likely to take the lead in realizing counter-urbanization. The Yangtze River Delta is the most developed economy in China. The three regions of the Yangtze River include the core areas of Shanghai, Jiangsu and Zhejiang Province. They are composed of 15 prefecture-level cities, covering an area of 217,000 square kilometers, with a population of more than 150 million. In 2018, the total GDP of the Yangtze River Delta has reached 15 trillion RMB, accounting for one sixth of the country's total. At the same time, the Yangtze River Delta region, as one of the most serious areas of aging and younger children in China, has begun to be affected by the lack of demographic dividend. Therefore, if we can achieve Counter-urbanization in the Yangtze River Delta region, thereby improving the fertility of the region, it will play a good role in promoting the economic development of the region, and also play a good role in demonstrating for the whole country.

Let's take a look at the total fertility level of some cities in the Yangtze River Delta. According to the data of the sixth census in 2010, the average number of children born by women everywhere is 0.74 in Shanghai, 0.99 in Suzhou, 1.00 in Wuxi and 1.25 in Jiaying. Thus, although the fertility rate in the Yangtze River Delta region is very low, the surrounding second and third-tier cities are still higher

than the first-tier cities. Therefore, if the population of the central city can be dispersed to the surrounding cities, it may promote the overall fertility of the region.

However, it will be very difficult to Counter-urbanization if the population is only dispersed and the corresponding supporting facilities, policy guarantees and job opportunities are not provided. First-tier cities have unparalleled development opportunities, top-level resources and facilities, while second-tier and third-tier cities have beautiful environment and low housing prices. Only by combining the two perfectly, can we realize the key of anti-urbanization. In my opinion, there are two key factors to achieve this: first, the series connection of developed means of transport, and second, the breaking of administrative barriers between regions.

The space of human activities is expanding with the continuous development of transportation. In the whole 20th century, the main means of travel for Shanghai democracy is buses. The scope of activities is only 10 kilometers radius centered on the People's Square. After the popularization of rail transit in the early 21st century, the scope of activities has expanded to the whole administrative region of Shanghai. Now the high-speed rail network has been completed in the whole Yangtze River Delta. At present, with Shanghai as the center, the metropolitan area with a radius of 100 kilometers is also on the verge of emergence. Looking forward to a more distant future, a series of new vehicles such as maglev trains and flying cars are also being developed, and the whole Yangtze River Delta will gradually become a city.

Professor Lu Ming of Shanghai Jiaotong University believes that the first-tier cities in China are not too big, but too small. After the world enters the era of metropolitan circle, we can only expand the influence of the first-tier cities and expand the industry of the first-tier cities to the surrounding cities, so that the whole region can develop in a balanced way. This is a development process that does not transfer people's will. Some scholars regard it as a new stage of urbanization. In my opinion, it is a typical process of counter-urbanization.

With the progress of transportation and the development of Internet, people will no longer gather in crowded first-tier cities and gradually move away from cement forest office buildings to cross-city life and distributed office life. The beautiful countryside plan and the characteristic town plan we are advocating now are actually a process of anti-urbanization. Of course, this kind of Counter-urbanization must be accompanied by the liberalization of corresponding policies in order to achieve good results. The ultimate goal of anti-urbanization is to let the residents living around the metropolis and the residents living in the city centre enjoy the same educational system, medical conditions, business support and entertainment facilities.

Imagine this kind of life. In the morning, a ray of sunshine wakes you up from your villa near Taihu Lake. After breakfast, you take an inter-city train and arrive at Shanghai Hongqiao Center in an hour to attend the Nth Inbound Expo. In the afternoon, you return home with full harvest. With the help of VR/Internet of Things/AI, you begin to work with the team that distributes the world. You finish the day's work in only four hours, then watch the sunset by Taihu Lake with your lover, enjoy a delicious dinner and spend time with the children. Not only that, your child lives in a different place, but enjoys the same level of education and

examination policy as Shanghai. As long as your spouse raises the child, he or she can receive the corresponding income subsidies and social insurance, and the whole family can enjoy high standards of medical technology. Is such a life far away from us? Science and technology will develop at a much faster pace than we imagine, and a return to idyllic life is just around the corner. And will such a good life arouse your initial yearning for life, so as to choose how many more children to have? I have always believed that human nature still yearns for fertility and reproduction. After the pressure of life is reduced and the quality of life is improved, the fertility rate will also be improved.

Of course, anti-urbanization also has a price, that is, the collapse of the traditional urban system, especially the mega-cities, can they experience the pain of such transformation? This is indeed a problem that can not be ignored. At present, because of the unbalanced development of local areas and China's habit of using GDP as the main means of economic consideration, local protectionist policies have been adopted in order to pursue short-term economic benefits. For example, Shanghai's industrial policies over the past few years have generally left high-end industries in the city, while exporting low-end industries. In the long run, this will only widen the gap between regions. However, recently, after the establishment of the development plan of Shanghai Metropolitan Area, we are pleased to see the changes in industrial policy in Shanghai. Some R&D centers of high-tech enterprises have begun to put into production around Shanghai. The current policy of regional coordinated development advocated by Shanghai Municipal Government will also accelerate the development of such inter-city industrial linkage. Therefore, the possibility of future employees leaving the center of Shanghai to work and live in other places is increasing.

#### **4. Conclusion**

Whether at the national level or at the individual level, we all hope to see that our fertility rate can rise. All this may seem difficult, but it is possible to achieve it in a reasonable way. Personally, I am very optimistic that Counter-urbanization will play an essential role in promoting fertility, and we are on the right road to continue to move forward. We sincerely hope that we can achieve substantial results in improving fertility in our country and set a successful example for other countries in the world.

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