

Agglomeration in large metropolitan areas and a progress of fertility decline

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Abstract

As of 2023, the lowest total fertility rate among Japanese prefectures is in Tokyo, while the highest is in Okinawa Prefecture. In general, fertility rates tend to be lower in urban areas with high population density and higher in rural areas with low population density. The purpose of this study is to theoretically elucidate the causes of this phenomenon. We will also theoretically elucidate how the declining fertility rates affects society, particularly how it affects the distribution of population between metropolitan areas and rural areas.

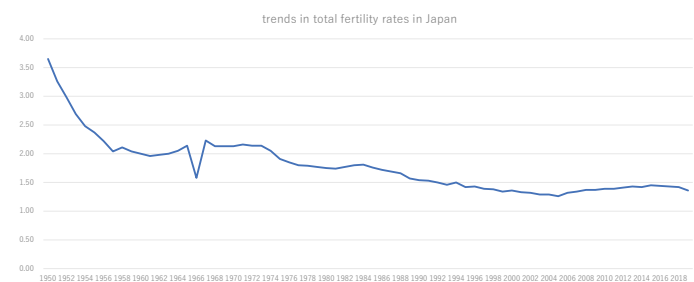
Background & Results

Almost all developed countries are experiencing declining fertility rates, but Japan, in particular, is experiencing a declining fertility rates at a rate unparalleled in the world. The declining fertility rates has various effects on society. The lack of pension funds, a shrinking labor force, and the shrinking market for consumer goods and the consequent withdrawal of many firms from Japan are only a few of the many problems that are expected to arise in the future. In addition, the mechanism by which declining fertility rates occur is very complex. The rising cost of education in developed countries, the increase in the value of time lost in raising children due to rising wages, and the decline in the relative value of marriage due to the diversification of consumer goods are just a few of the causes of the declining fertility rates. This study will examine the causes and effects of the declining fertility rates in metropolitan areas and its impact on the distribution of population between metropolitan and rural areas.

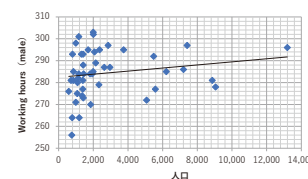
Significance of the research and Future perspective

The Tokyo metropolitan area is one of the largest metropolitan areas in the world, with a population of approximately 35 million. However, while this megacity absorbs population, it does not reproduce it. Since the fertility rate in the rural areas of Japan has been higher than that in the urban areas for a long time, most of the population born in the rural areas moves to Tokyo and other urban areas, producing fewer children than the number that moved there. In other words, Japan's urbanization can be described as the declining fertility rates in the Tokyo metropolitan area. While there are many possible reasons for the declining fertility rates in metropolitan areas, the focus of this study is on the impact of the diversity of consumer goods in metropolitan areas. The presence of a large population in a metropolitan area creates a huge market for consumer goods. A huge market attracts many firms. In areas where many firms gather, a wide variety of consumer goods are available. In Tokyo and Osaka, one can find restaurants offering a variety of cuisines not found in other parts of Japan, as well as many leisure facilities such as yoga, fitness, dance, and other classes. This variety of consumer goods increases the value of income in the region. The same income can be used to obtain a variety of consumer goods, which increases the level of satisfaction derived from the income. People living in large metropolitan areas will try to earn more income. Specifically, they will begin to try to work as many hours as possible. In trying to reduce their working hours, they sacrifice time for housework and childcare. Those

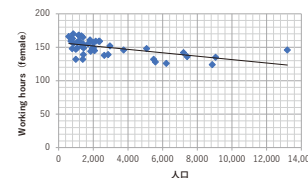
who anticipate that marriage will require more time for housework will try to delay or avoid marriage in order to have more time to work. And those who anticipate that the birth of a child will force them to devote much of their time to child care will try to free up time for work by having fewer children. The result of these actions is that metropolitan areas will have fewer marriages and fewer children. Inevitably, metropolitan areas with large numbers of businesses will have fewer marriages and fewer children.



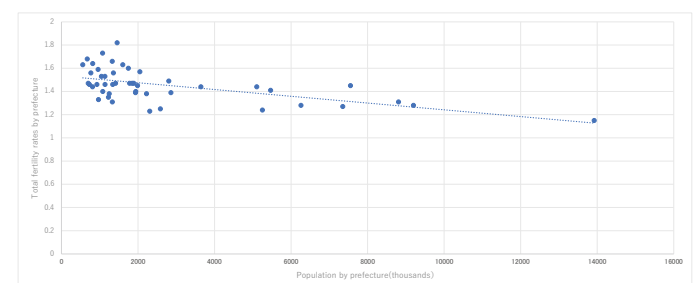
Trends in Japan's Total Fertility Rate



Men tend to work longer hours in populous metropolitan areas, while women work shorter hours in metropolitan areas.
(survey on time use and leisure hours 2011)



Working hours by prefecture



Total fertility rates and population by prefecture

Patent

Sato, Yasuhiro; Yamamoto, Kazuhiro. Population concentration, urbanization, and demographic transition. *Journal of Urban Economics* 2005, 58, 45-61. doi: 10.1016/j.jue.2005.01.004

Treatise

Maruyama, Akiko; Yamamoto, Kazuhiro. Variety expansion and fertility rates. *Journal of Population Economics* 2010, 23, 57-71. doi: 10.1007/s00148-008-0223-6

URL

Morita, Tadashi; Yamamoto, Kazuhiro. Inter-regional fertility differentials and agglomeration. *Japanese Economic Review* 2018, 69, 171-188. doi: 10.1111/jere.12174

Keyword

decrease in fertility rates, agglomeration, diversity in consumer goods