

Provincial Patterns of Contraceptive Use in China

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More attention should be paid to the quality of care in family planning programmes instead of focusing on quantitative aspects

China's economic reforms since 1978 have brought about tremendous changes in many aspects of society. Most importantly, by establishing private enterprises and fostering decentralization, it has changed the fundamental characteristics of socialist China during the period 1949-1976: i.e. public ownership and central planning, which resulted in various adjustments at local levels in the implementation of centrally planned policies according to local socio-economic conditions. One of the most noticeable changes has been in population policy. Since the one-child policy was announced in 1979, it has been maintained, but with frequent shifts in strictness and adjustments of central guidelines of policy implementation over time and by location. Generally speaking, it has changed from strict, centrally enforced policy implementation in the late 1970s and early 1980s to more decentralized policy implementation and local family planning regulations since the mid-1980s. Those changes have affected fertility as well as patterns of contraceptive use in China (Aird, 1985, 1990; Greenhalgh, 1986; Hardee-Cleaveland and Banister, 1988).

Numerous books and articles have documented the pattern of fertility decline, and the relationship between socio-economic development, family planning programme implementation and fertility change in China (Wolf, 1986; Poston and Gu, 1987; Feeney and Yu, 1987; Feeney and others 1989; Greenhalgh, 1989; Peng, 1989). It was found that the family planning programme, with contraceptive use (including induced abortion for contraceptive failure) as the key element, played a very important role in China's fertility decline. The studies of patterns of contraceptive use in China show that the dominant method of contraception is the IUD, and there is also a very high percentage of sterilization (Poston, 1986; Choe and Tsuya, 1991; Kaufman and others, 1992). Some critics of Chinese family planning have suggested that women are pressured to use specific methods, mostly IUDs and sterilization, often without adequate counselling (Hardee-Cleaveland and Banister, 1988; Aird, 1990). Other field studies suggest that in China, when women have no strong method preferences and information services are lacking, provider recommendations are the predominant influence on contraceptive choices (Kaufman and others, 1992).

After a decade of economic reform, China has more divergent regional development and more localized family planning regulations. Under these changed circumstances, it has become important to re-examine patterns of contraceptive use and their relation to socio-economic development. The main purpose of this article therefore is to study the relationship between regional socio-economic development, decentralized family planning programmes and the patterns of contraceptive use in China.

Data and methods

This study uses data from the Two-per-thousand Fertility and Birth Control Survey of China conducted by the State Family Planning Commission of China in 1988. The Survey interviewed 485,235 households and total sample size was 2,152,044, including 467,162 women aged 15 to 57 (State Family Planning Commission, 1990). This study is based on a 10 per cent subsample randomly drawn from the total data set of the Survey.¹

The period studied is from 1979 to 1988 -- 10 years since the one-child family planning policy was announced and economic reform was begun. Because few women use contraception between the time of marriage and the birth of their first child (1.35 per cent in this study), the present study includes only the currently married women since 1979 who had at least one child and were currently using contraception. This included 12,296 women in the study.

There are 29 provinces, municipalities and autonomous regions in China, which are used as the unit of analysis to study provincial contraceptive patterns. The methods of contraceptive use are classified into five categories: sterilization (including vasectomy and tubal ligation), IUD, oral pill, condom and others. In some of the tables, the use of pill and condom are classified as "others" for simplicity of the analysis. Considering the facts of contraceptive method specification by birth order of Chinese family planning programmes, and the local area variations in fertility levels, all calculations of provincial patterns of contraceptive use are standardized by birth order.

Background

Decentralization and the development of private enterprise are two of the most important features of China's economic reform. Reform was initiated with the rural land reform of the late 1970s and gradually extended to various aspects of society (Luo, 1985; Liu, 1987). A decade of reform has not only brought about rapid socio-economic development, but also increased the gap between levels of development in different subregions of China. The gross output value of agriculture, for example, increased from 100 in 1980 (1980 = 100) to 114 in 1985, and to 168 in 1988. The gross output value of industry increased from 100 in 1980 (1980 = 100) to 159 in 1985, and to 280 in 1988. The per capita national income increased from 376 yuan in 1980 to 674 yuan in 1985, and to 1,081 yuan in 1988. The largest difference in per capita income between provinces in 1986 was 3,065 yuan (406 yuan in Guizhou Province and 3,471 yuan in Shanghai), and in 1989 the largest difference was 3,993 yuan: Guizhou, 631 yuan and Shanghai, 4,624 yuan) (State Statistical Bureau of China, 1990).

Recently, there has also been a mass movement of establishing enterprises and companies or joint ventures with foreign investors in China. People involved in the movement extended from farmers and workers to cadres and intellectuals. These changes form the basis of decentralized population policies and family planning regulations. There have been many studies about the development of China's population policies, especially since the one-child family planning policy was announced in 1979. Croll and others (1985) studied some implications of this policy. Greenhalgh (1986) and Hardee-Cleaveland and Banister (1988) analyzed population policy changes during the economic reform. Aird's study (1990), with a critical view of Chinese population policy, documented in detail China's population policy development during the 1980s. These studies showed that the period from 1979 to 1983 represented a centrally enforced one-child family planning policy and programme, and was followed by a short period of adjustments in central policy guidelines induced by the economic reform and decentralization in policy implementation. Although there were some signs of "tightening up" family planning policy towards the late 1980s, China's family planning policy implementation has developed from a stringent to a more flexible and decentralized one since the time economic reform began (Zeng, 1989). The present study is not intended to review the development of China's population policy, but to focus on the development of local family planning regulations since the early 1980s.

From the early 1980s, some provincial family planning regulations appeared in China, since the national regulations seemed premature during the period of rapid socio-economic change. In 1980, Guangdong Province passed "the family planning regulations of Guangdong Province", the first local government family planning regulation in China. In 1986, Ningxia Autonomous Region, and Qinghai and Shaanxi provinces also passed local family planning regulations. Provincial family planning regulations were established by Sichuan Province in 1987 and Jilin, Liaoning, Shandong, Anhui, Hubei, Fujian and Guizhou provinces in 1988. They were followed in 1989 by Tianjing, Hebei, Zhejiang, Guangxi and Hainan. By January 1991, all provinces in China, except Xinjiang and Xizang, had local family planning regulations (Feng and Hao, 1992).

The provincial family planning regulations consist mainly of two parts. The first part consists of regulations limiting the number of children one couple may have. All local regulations maintain the one-child family planning policy but have different criteria under which couples are allowed to have two or more children. The second part refers to policy implementation, which consists of population planning, contraceptive use, rewards and punishments and regulations pertaining to the "floating" population. The most relevant regulations with regard to the study of contraceptive patterns and method choice in China are those involving contraceptive use. All local government regulations make it clear that all couples of childbearing age who have not received birth quotas should practise some kind of effective contraception. The regulations of 14 provinces² require couples to use an IUD after the birth of their first child, and to use sterilization after the second child.

The regulations of Liaoning, Hebei, Henan, Hunan, Shanxi, Gansu, Ningxia, Yunnan and Guizhou provinces state clearly that all pregnant women without a birth quota (jihuwai huaiyun) must end their pregnancies by means of abortion. In the same situation, 14 other provinces, Beijing, Shaanxi, Inner Mongolia, Jilin, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong, Hubei, Guangdong, Hainan and Guangxi, state that the couple should (at a given time or as soon as possible) stop their unplanned pregnancies by means of abortion. Sichuan is the only province which requires the couples with an unplanned pregnancy to pay a certain fine (Feng and Hao, 1992).

It is clear that about half of the provincial family planning regulations (14 provinces) specify the methods of contraception for couples by birth order and that almost all provinces require women with unplanned pregnancies to have an abortion. Although the rest of the provincial regulations do not specify contraceptive methods by birth order, the national guideline of "first child: IUD, and second child: sterilization" in the early 1980s has exerted a major influence on providers in practising family planning (Banister, 1987; Kaufman and others, 1992).

Contraceptive use

One of the defining characteristics of the socialist era of China was the continual use of "mass mobilization campaigns" (qunzhong yundong) to achieve socialist goals. Bennett (1976:18) defined the mass campaign as "a government-sponsored effort to storm and eventually overwhelm strong but vulnerable barriers to the progress of socialism through intensive mass mobilization of active personal commitment". The one-child family planning programme bore the obvious characteristics of a mass mobilization campaign (White, 1990). It is unlikely that the level of socio-economic development in most areas of China in the late 1970s was up to levels which would support such low fertility as one child per family. Increasing pressure on the Government to modernize, especially considering the population growth momentum, alarmed the Government sufficiently for it to take some decisive actions to control population growth. When the level of socio-economic development and the influence of traditional culture were not in favour of government-desired social changes, such as the one-child per family policy, an alternative measure to achieve the change was employed, i.e. a mass mobilization campaign.

One of the most important elements in the one-child family planning programme is the massive use of programme-directed contraception (including induced abortion) to achieve desired family planning goals. It is obvious that effectively controlling population growth requires the use of effective and long-lasting contraceptive methods. The most effective contraceptive method is sterilization, and one of the most long-lasting non-permanent contraceptive methods is the IUD. It is understandable for a Government such as China's to be in favour of those contraceptive methods as the means for achieving the goal of limiting family size.

Table 1 shows the percentage of contraceptive use, by method, of currently married women aged 15 to 49 in selected Asian countries and areas. It is clear that China has very high rates of sterilization and IUD users. About half of the contraceptive users have been sterilized and more than 40 per cent depend on IUDs. The table shows that the Republic of Korea has the highest rate of sterilization (58 per cent), and China has the second highest rate of sterilization and the highest rate of IUD users. In total, about 90 per cent of contraceptive users in China during 1988 depended on those two methods. For use of the pill, condoms and other contraceptive methods, China has the lowest rates among all the selected Asian countries and areas.

It is not unreasonable to expect similar patterns of contraceptive use under similar socio-economic conditions and the influence of traditional culture. For example, in Taiwan Province of China, Hong Kong and Singapore, only about one-third of contraceptive users depend on sterilization, and no less than 40 per cent of contraceptive users choose contraception other than sterilization and the IUD. It is very unlikely that the differences in socio-economic development between Taiwan Province of China, Hong Kong, Singapore and China as a whole would fully account for the differences in contraceptive patterns. The unusually high percentage of sterilization and IUD use, and the relatively low percentage of other contraceptive methods used in China suggest that the family planning programme indeed directed the pattern of contraceptive use.

This point is further supported by birth control operations from 1978 to 1990, as shown in table 2. It is clear that from 1981 to 1988, where the contraceptive figures are available, not less than 85 per cent of the contraceptive users depended on sterilization and IUDs. Table 2 also reflects the influence of government-initiated family planning campaigns on the total number of birth control operations in China. There was a surge in the total number of operations in 1979 after the announcement of the one-child family planning policy. The peak of the government-enforced family planning programme occurred in 1983 when the total number of birth control operations topped 58 million. The total number of sterilizations increased about five times from approximately 5 million in 1982 to approximately 20 million in 1983. A minister of the State Family Planning Commission of China, who was in favour of contraception campaigns and sterilization, was responsible for the dramatic increase in 1983 of birth control operations. The following year, a new minister was assigned to that post.

Since 1984, the total annual number of birth control operations has been about 30 million, with about 10 million IUD insertions, 2 million removals and 10 million induced abortions annually. Considering that an increasing number of people have been reaching marriageable age since the mid-1980s owing to a late 1960s "baby-boom", these figures may in fact indicate a reduced number of total annual birth control operations in China. Decentralization during the period of economic reform and localized family planning regulations may also be responsible for those changes.

Provincial patterns of contraceptive use

On average, the level of use of sterilization and IUDs in China is very high (90 per cent), but there are considerable variations in contraceptive methods between subregions. Table 3 presents the standardized percentage of currently married women since 1979, and the percentage currently using contraception in 1988, by method, in 29 provinces, municipalities and autonomous regions of China. Although the national figures of contraceptive use show a total of 90 per cent sterilization and IUD users in 1988, the provincial figures reveal vast differences in the method choice. The use of sterilization is as low as 11 per cent in Guizhou Province, and as high as 63 per cent in Fujian Province. More than 40 per cent of users in Ningxia and Xinjiang depend on contraceptive methods other than sterilization and IUD, while less than 5 per cent of users in Shaanxi, Henan, Sichuan, Guangdong and Hainan provinces do so. Preliminary analysis reveals that more developed regions, namely Beijing, Tianjin and Shanghai, among others, and less developed regions with a higher proportion of ethnic minority populations, namely Qinghai, Ningxia, Xinjiang, Yunnan, Guangxi and Guizhou, among others, tend to have a higher percentage of use of user-controlled methods and a relatively low percentage of sterilization. This suggests that the more developed and the less developed regions of China may have similar patterns of contraceptive use.

In order to analyze the relationship between socio-economic development and contraceptive patterns, a socio-economic index (SES) developed by Mauldin and Berelson (1978) is constructed for each province of China for 1988. The following seven variables make up the index for each province.³

- Per cent adult literacy
- Primary and secondary school enrolment ratio
- Expectation of life at birth
- Infant survival rate
- Percent of male labour force not in agriculture
- Gross provincial product per capita
- Per cent urban population

Provinces were ranked from high to low on each variable; the ranks were then added and divided by the number of variables, i.e. seven. The scores ranged from a high of 27 for Beijing to a low of 3.9 for Yunnan. The Appendix (pp. 34-35) gives the detailed socio-economic variables for the construction of the provincial socio-economic index (SES). The result of the provincial SES is placed in column 6 of table 3.

Then 28 provinces are divided into three groups according to the SES index, representing high, middle and lower levels of socio-economic development. The highest level of the SES index (the first nine provinces from the highest rank of SES index) consists of Beijing, Tianjin, Shanghai, Liaoning, Jilin, Heilongjiang, Guangdong, Jiangsu and Shanxi provinces. The lowest level SES group includes another nine provinces: Yunnan, Qinghai, Guizhou, Gansu, Sichuan, Ningxia, Jiangxi, Shaanxi and Henan. The other 10 provinces represent the middle level of socio-economic development.

Figure 1 shows the patterns of contraceptive use by SES. It is clear that the most and the least developed provinces in China have similar patterns of contraceptive use, and that provinces with middle levels of socio-economic development tend to have another distinct contraceptive pattern. Despite the fact that seven out of nine less developed provinces specified contraceptive methods by birth order in their family planning regulations, both the more and the less developed provinces of China had a relatively high percentage of couples using the IUD and other user-controlled methods, and a relatively low percentage using sterilization. Provinces with mid-level socio-economic development had the highest percentage of sterilization and lowest proportion of couples using other user-controlled methods. This finding suggests that the influence of national guidelines of contraceptive use by birth order were most effective among these provinces.

Table 4 shows patterns of contraceptive use by birth order and SES regions. The methods of contraception are reclassified into six categories: vasectomy, tubal ligation, IUD, pill, condom and others. On average, few men with only one child had a vasectomy. The most astonishing difference exists between married men in the most developed regions and all other regions in using vasectomy as contraception. Hardly any married men in developed regions had a vasectomy regardless of the number of children they had. On the contrary, the percentage of vasectomies increases dramatically in all other regions as the number of children increases. On average, not less than 10 per cent of married men had a vasectomy in these regions. Female sterilization is highest in SES 2 regions and lowest in SES 3 regions. Although SES 1 and SES 3 regions have a relatively lower percentage of sterilization, there exists a significant difference between vasectomy and tubal ligation. The level of socio-economic development and the guidelines of local family planning regulations both may play a role in determining the sterilization patterns of couples in these regions.

The fact that more than 78 per cent of women who had one child were using IUDs clearly reflects the influence of national guidelines on contraceptive use by birth order. About 48 per cent of women in developed regions and 76 per cent of women in SES 2 had undergone sterilization after the birth of their second child. Despite the fact that seven out of nine less developed provinces specified contraceptive use by birth order (first child: IUD, and second child: sterilization), only 36 per cent of the women had undergone sterilization after the birth of the second child. On the one hand, this may reflect the influence of different family planning programmes applied to minority populations. On the other hand, it may also indicate a stronger desire for more children and hence stronger resistance to sterilization in these regions. About 10 per cent of couples in SES 1 and SES 3 regions used other contraceptive methods, but only 7.5 per cent in SES 2 regions did so. As expected, the percentages using any contraception by birth order were highest in SES 1 regions and lowest in SES 3 regions. Finally, it is interesting to note that there are fewer variations in the proportion of couples who answered that their motivation for using any contraception was to respond to the Government's family planning programme. An overwhelming majority of couples indicated that "responding to the Government's call" was their primary reason for using contraception, reflecting the strong and universal influence of the Chinese family planning programme even during the progress of economic reform.

As indicated in table 3, the less developed provinces have a higher proportion of ethnic minority populations where there are different family planning regulations for the minorities. We next analyze the relationships between SES index, contraceptive patterns and proportion of ethnic minority population among the provinces. Table 5 shows the zero-order correlation coefficients of SES, percentage of ethnicity and contraceptive use, by method, of 28 subregions of China in 1988. As expected, the SES index has no significant correlation with any methods of contraception because of the non-linear relation between the contraceptive methods and the level of socio-economic development. The SES index has a strong negative correlation with percentage of ethnic population in the provinces (-0.46) indicating that the higher are the percentages of ethnic minorities in the population, the lower is the level of socio-economic development. The percentage of ethnic minorities also highly correlates with the contraceptive methods used. The provinces with higher percentages of ethnic population are more likely to be associated with lower levels of sterilization (-0.66) and higher levels of use of other means of contraception (0.66). It is apparent that ethnicity plays an important role in less developed provinces in making their contraceptive patterns similar to those of the more developed provinces. Finally, as expected, the SES index has a very strong negative correlation (-0.72) with the provincial level of fertility. The more developed regions are more likely to have a low level of fertility.

The above analysis reveals distinct patterns of contraceptive use in China in 1988. The SES index shows that the most and the least developed provinces have similar contraceptive patterns. The most distinct feature of SES 1 is probably the relatively low level of sterilization and relatively high level of use of the IUD and "other" contraceptive methods. Most provinces in SES 2 are those of the middle level of socio-economic development; they show a high percentage of sterilization followed by IUD, and a relatively low percentage of "other" methods.

The similar pattern of contraceptive use in both the more and the less developed provinces of China suggests different

underlying factors in the determinants of contraceptive use. Couples in the more developed provinces tend to have higher levels of education, higher social status, better knowledge of different contraceptive methods and, perhaps, access to more efficient distribution and services systems for the family planning programmes. They may thus be in a better position to choose their preferred contraceptive methods and less constrained by the guidelines of family planning programmes. But under the strong influence of the family planning programme, it seems that a majority of them managed to avoid sterilization and to choose the IUD or other methods instead. If the family planning programme continues to become more institutionalized, women may become more knowledgeable about method options and proper use, and may choose different contraceptive methods based on their own personal choices (Kaufman and others, 1989). In other words, the development of Chinese individualism will have a stronger effect on contraceptive method choice for couples in the more developed provinces, since those provinces are more likely to be in a leading position of economic reform.

As mentioned previously, ethnicity is an important factor in determining the patterns of contraceptive use in less developed provinces. Considering the higher level of fertility in those provinces, the low percentage of sterilization and high level of use of the IUD and other methods may reflect a stronger desire for more children among couples in less developed provinces. In spite of the family planning programme regulations in most less developed regions, which specify the contraceptive methods by birth orders, couples are avoiding sterilization. Unlike the more developed provinces, the demand for more children may be the primary underlying factor in explaining the similar patterns of contraceptive use between those two extreme developmental regions.

Discussion and conclusion

Economic reform has brought about rapid and more divergent regional development in China. Decentralization in policy implementation and the establishment of private enterprises are two of the most important features of economic reform. As a consequence of reform, the behaviour patterns of the Chinese people have been changing: from passively receiving central authority and sacrificing their own interests to those of the collective and/or the State, to a more aggressive manner of expressing personal interests and emphasizing personal values. In implementation of the family planning programme, although the central guidelines have remained influential during economic reform, decentralized local family planning regulations increasingly deviate from central guidelines.

In examining patterns of contraceptive use, we have found that the most and the least developed provinces of China have similar contraceptive patterns, characterized by a high proportion of IUD and other user-controlled methods and a relatively low percentage of sterilization. Most provinces of the middle level of socio-economic development have similar patterns of contraceptive use, characterized by a high proportion of sterilization and followed by IUDs and a relatively low percentage of other methods. For the more developed provinces, on the one hand, the better distribution and service systems of family planning programmes may contribute to the observed pattern of contraception. On other hand, people in those regions are more likely to choose contraception based on their personal choice instead of following the provider's recommendations. For the less developed provinces with a higher proportion of ethnic minorities in their population, a stronger desire for more children as well as the influence of minority cultures may help to explain the relatively high percentage of respondents using more flexible methods, and the lower percentage of sterilization.

Comparison of patterns of contraceptive use in China with those in some selected Asian countries and areas suggests that the current contraceptive pattern in China (about 90 per cent of users depending on IUDs and sterilization) is in a transition period. With the progress of economic reform, one would expect that the family planning programme would continue to become more institutionalized. Consequently, couples will choose a greater variety of contraceptive methods, instead of following the family planning programme-directed methods, especially under the influence of progressively developing individualism. If this is the case, the Chinese family planning programme in the near future should pay more attention to the quality of care in family planning programmes instead of focusing on the number of contraceptive users or birth control operations. It should focus on providing more method choices, giving more information to clients, strengthening the technical competence of service providers, improving interpersonal relations and appropriating constellation services, as suggested in Bruce's (1990) study of the quality of family planning programmes.

Footnotes

1. The 10 per cent subsample of the Two-per-thousand Fertility and Birth Control Survey of China 1988 was prepared by the Program on Population, East-West Center, Honolulu, Hawaii.

2. These were Shaanxi, Inner Mongolia, Heilongjiang, Shandong, Henan, Hubei, Hunan, Guangdong, Guangxi, Sichuan, Quizhou, Yunan, Shanxi and Mingxia provinces.

3. Mauldin and Berelson's socio-economic index is constructed for different countries and areas (Mauldin and Berelson, 1978; Mauldin and Ross, 1991). The index used in the present study is applied to provinces in China, so some variables have been modified, e.g. variable 6, gross national product per capita in Mauldin and Berelson, has been changed to gross provincial product per capita in China in 1988.

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