

The Impacts of a Family Planning Program on Contraceptive/Fertility Behavior in Taiwan*

台灣家庭計畫之推行對避孕及生育行為之影響*

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Abstract

Some scholars argue that the significant decrease in fertility is due to social and economic development, and has nothing to do with promotion of family planning. However, Taiwan's experience shows that, although social and economic development has contributed to the decline of fertility after the Second World War, the promotion of a family planning program has expedited the process. The social norm in Taiwan has changed from "The more children you have the happier you are" to "Two children are just right", due largely to intensive family planning education carried out in the program. Moreover, the universal provision of effective and low-cost contraceptives to eligible couples has helped the contraceptive practice rate to rise very quickly. These actions have enabled couples to control their fertility to the declining

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level of the ideal number of children. Thus, Taiwan has been able to complete its “Demographic Transition” in 70 years. This paper discusses briefly the process of Taiwan’s family planning program development, the theory and methods of promotion, and evaluation of its effectiveness. It also points out the future direction of the program, providing a review and discussion of a national policy.

Key Words: a scheme for family planning promotion, operation system, contraceptive services, evaluation of the program, demographic transition

摘 要

有些學者指出，出生率之下降，主要是社會經濟發展的結果，和家庭計畫無關。惟，台灣的經驗顯示，社會經濟的發展，固然對生育率的下降有貢獻，但家庭計畫之推行，卻有加速生育率下降的功能。台灣的社會觀念，由「多子多孫多福氣」轉為「兩個孩子恰恰好」的想法，家庭計畫教育所扮演的角色不可忽視，而在計畫中普遍提供有效而廉價的避孕方法，迅速提高全民的避孕實行率，讓民眾能隨心控制其生育，以實現其逐年下降的理想子女數，使台灣於短短七十年間就完成人口增加型態的過程，實值得其他發展中國家參考。本文簡要檢討台灣家庭計畫發展的過程、推行的理倫基礎與方法、以及效果的評價，並提示將來發展的方向，是一種政策的回顧與檢討。

關鍵字：家庭計畫之推行架構、推行體系、避孕服務、計畫效果評價、人口增加型態之轉變

The purpose of this paper is to review how the family planning program was carried out in Taiwan, and whether it was effective in increasing the use of contraceptives, and hence prompting a reduction in fertility over and above the effect of social development. There have been many arguments that fertility in developing countries decreases even without family planning programs if the society continues to modernize. I agree that social development will surely have an impact on contraceptive use and fertility decline, but the degree should differ from country to country. As Mauldin and Ross (1991) pointed out that, "Thus, once again both social setting and program effort play major roles in fertility decline. the chief point is that neither effect can be discounted, and that a program effect exists that adds significantly to what the social setting would do alone."

Bongaarts (1993) also stated that "The average unweighted net effect (of family planning program) is 0.6 birth per woman, which amount to about 30 percent of the observed fertility decline (in the developing countries in late 1980's)." He made an observation in the same study that "No significant effect of program effort on potential demand (of children) could be demonstrated." However, it should be noted that, in comparing the program's net and gross effect, he found that in some instances, the net exceeds the gross effect. He also indicated that "The most likely cause of this phenomenon is the so-called catalytic effect of family planning programs, which refers to contraceptive demand that is generated by the program's information, education, and communication (IEC) as well as other activities that encourage and legitimize the practice of family planning. The catalytic effect results in a higher degree of implementation of reproductive preferences, independent of the greater accessibility of methods resulting from program activities."

I fully agree with the viewpoint above, and believe that Taiwan is one of the few cases that has had significant effects on the potential demand for contraception through intensive IEC programs. Unfortunately, Taiwan was not included in Bongaarts' (1993) analysis. As shown by Hermalin (1971) in his areal analysis, Taiwan's family planning program has experienced effects over and above the effects of socio-economic development.

A detailed description of the program is as follows.

I . Historical Development of Taiwan's Family Planning Program

After the Second World War, Taiwan's crude birth rate (CBR) started to increase rapidly due to the "post-war baby boom", rising from 38.3% in 1947 to 50% in 1951, at a natural increase rate of 3.84%. This aroused great concern in some scholars and administrators, especially Dr. Meng-Lin Chiang, the Chairman of the Sino-American Joint Commission on Rural Reconstruction (JCRR). They were worried that this rapid population growth would lead Taiwan to fall into the so-called "Malthusian Trap", because at that time its economic development could not catch up with its rapidly increasing population. Dr. Chiang emphasized that Taiwan would add a population the size of Kaohsiung City (the second largest city in Taiwan) every year, and the island would have to construct a "Hsi-men Dam" (the largest dam in Taiwan) every year in order to feed this population. He then stated that Taiwan would need to control its population growth. However, his recommendations were not accepted, because:

- (1) The social norm at that time was in favor of large families (the more children there are, the more happiness there is);

- (2) It was in contradiction to the Nation's Founding Father's (Dr. Sun Yet-Sen) teaching of increasing the Chinese population so as to avoid invasion from foreign countries:
- (3) It was also against the national policy of counter-attacking Communist mainland China, for which the R.O.C. needed more people to serve in its army.

Dr. Chiang and JCRR were not in the least bit discouraged. They continued to advocate the seriousness of population problems, and even published a booklet "Happy Family" to promote family planning, which was ridiculed by many people. They then, with the assistance of Dr. George W. Barclay, carried out a survey in a rural area and found that high fertility leads to high maternal and child mortality and a high proportion of children that are given up for adoption. These findings became the strong basis for their argument, and also aroused a hot debate among different groups of people, including legislators, administrators, scholars, and the general public. The mass media even took this issue as a hot topic and accelerated the discussion.

A group of pioneers, with the financial assistance of JCRR, next organized a non-governmental organization "China Family Planning Association" in 1954 to promote family planning in military dependents' villages under the name of "first aid". This action turned a political problem into a health problem, which is more acceptable. It was argued that children who will serve in the army for the next 20 years have already been born, and thus family planning will not affect the source of new recruits. This view, combined with the argument that, by that time, the social and economic problem will greatly affect the strength of the nation, finally gained the support of public opinion and the recognition of government leaders and military leaders as well. In 1959 the Governor of Taiwan Provincial

Government finally changed his attitude toward family planning from “leave it to the public” to “educate and let people have right choice”. Therefore, the Health Department of Taiwan Provincial Government decided to incorporate family planning as a part of the Maternal and Child Health Program and called it the “Pre-Pregnancy Health” (PPH) program in December 1959. This program was carried out until 1964, when the First Five-year Family Planning Program was started.

With the financial assistance of the Population Council, New York, the Taiwan Population Studies Center was established in 1961, and carried out the famous “Taichung Experimental Study” in cooperation with the University of Michigan from 1962 to 1964. This study (Freedman and Takeshita, 1969) found that:

An organized family planning program could work well in Taiwan;

Home-visiting is a good method of promotion, but it is not necessary to visit both husband and wife, and word-of-mouth communication is the main method of spreading news;

IUDs (Inter-Uterine Devices) are acceptable to women in Taichung, especially the Loop;

Small group meetings are very useful in promoting IUDs.

With these encouraging findings, the Provincial Government formulated the first five-year plan, which was incorporated into the fourth National Four-year Economic Development Plan, as a public health measure. In 1966, Dr. Sun Ko, son of Dr. Sun Yet-Sen, pointed out in an opening address at the National Manpower Resource Symposium that: “Taiwan is one of the most densely-populated areas in the world and is experiencing a very rapid population growth. This might lead to social chaos and economic recession.”

He also spoke out that "Dr. Sun Yet-Sen's assertion of a population increase in China has historical background. In 50 years, the world has changed so much that it is no longer necessary to increase the population to resist invasion or the threat of imperialism. On the contrary, over-population might destroy the country."

This symposium recommended the government to establish a population policy and expand the promotion of family planning. As a result, the Population Policy Study Committee of the Ministry of Interior was reorganized into the Population Policy Committee and drafted "the Population Policy Outline of the Republic of China," "Population Adjustment Plan in Taiwan Area," and "the Regulations Governing the Implementation of Family Planning Programs in Taiwan Area." The cabinet meeting passed the last one on April 30, 1968, just before the opening of the First Conference on Population Programs in Asia, which was held in Taipei. This became the legal base for promotion of family planning in Taiwan, however, the Outline of Population Policy was not promulgated until April 1969, and this "Outline" was further amended in January 1983 to suit social changes. The Executive Yuan (Cabinet) also promulgated the "Plans for Intensive Program Promotion of the Population Policy" in January 1983, which contained specific measures to regulate population growth and to improve the quality and distribution of population. The "Eugenic Protection Law," which legalized induced abortion and sterilization, was promulgated on July 9, 1984 and become implemented starting from January 1, 1985. This Law replaced the "Regulations" stated above. With full legal support, Taiwan's family planning program had finally entered into its full bloom.

II. Mechanism of Family Planning Promotion

1. A scheme for family planning promotion

One of the most important objectives of Taiwan's family planning promotion was to reduce the population growth rate to an acceptable level, which was set in the national population policy. The most important means to achieve this goal is to naturally reduce the fertility rate.

A person's fertility behavior is affected by many complex factors, and many theories have been developed to explain this process. Freedman (1975) developed a sociological scheme for the analysis of factors affecting a fertility level. In this scheme, social norms about family size and about intermediate variables exert their effect on fertility through eleven intermediate variables, which in turn are affected by social and economic structure, including population policy and family planning programs. Mortality affects fertility through social and economic structure, social norms, and intermediate variables, while the natural environment and social environment directly influence the social and economic structure and mortality. Sun (1968) applied this scheme to explain the difference in fertility and its process, using the Taichung Study data, and found that it worked quite well.

Economists hold different views on the proximate determinants of fertility and its process. Leibenstein (1957) proposed a cost-utility analysis model to explain how a couple decides whether to have a child of specific order or not. However, he pointed out in a later paper (Leibenstein, 1981) that a high proportion of the fertility rate is determined by "non-decision decisions", i.e., passive or inertial decision-making. On the other hand, Becker (1960) and Willis (1973) emphasized that under a certain "taste",

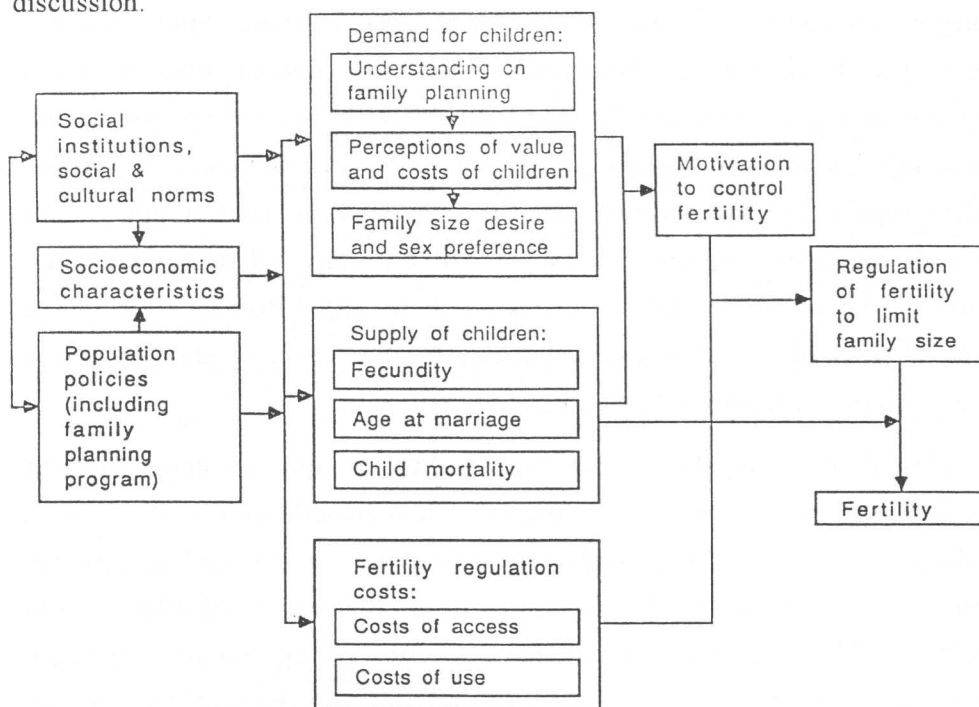
changes in income, price, and quality of children are the main factors that introduce fertility differentials. The "price" includes cost of children and opportunity cost of a mother's time. Freedman (1976) stressed the influence of social status on fertility, because it represents different forms of consumption, including childbirth.

Easterlin (1982) put emphasis on endogenous taste changes. He argued that all of the determinants of fertility work through one or more of the three categories of factors. (1) The demand for children, or desired family size; (2) the supply of children, i.e., the number of surviving children obtainable when not attempting to limit family size; and (3) costs of fertility regulation, including subjective disadvantages of regulation and the costs of control. When supply exceeds demand, and the motivation to control family size exceeds the regulation costs, a couple will be motivated to regulate their fertility. He suggested that development policies might have an effect on the demand of children; public health policies on the supply of children; and a family planning program on the cost of fertility regulation.

Social psychologists try to explain fertility behavior through a model of children's value and cost to their parents. It is hypothesized that the value and cost of children is influenced by social-cultural and personal background, and also by the availability of recognized alternatives/substitutions for children. This in turn affects parents' desire for having children and hence their fertility through use of fertility control methods (Fawcett and Arnold, 1973; Sun, 1982). Here, fertility is interpreted as the net result of the balance between satisfaction and costs of children, after taken into account the available alternatives/substitutions for children.

Family planning programs in Taiwan have been influenced by the theories that are stated above. Among these factors that affect fertility, some could be

manipulated through policy and program measures, while some could not. Although the latter could not be included in a family planning program, they need to be studied so as to understand their influence on manageable factors. In practice, work plans are formulated for those manageable factors in order to lower the fertility level. The complex relationships among these manageable factors may be simplified, following Easterlin (1982) and Bulatao and Lee (1983), as the following conceptual scheme (Fig. 1) for the convenience of discussion.



Source: Based on Bulatao & Lee (eds.), Determinants of Fertility in Developing Countries, Vol.1, P10, 1983, with some modifications.

Figure 1: A Conceptual Framework of The Influence of A family Planning Program on Fertility Level

As the scheme indicates, population policy (including a family planning program) is the most important manageable source of fertility change; it affects not only the demand and supply of children and fertility regulation costs, but also the two source variables, i.e. social norm and socio-economic characteristics. Therefore, it is very important for a program director to not only promote a family planning program, but also to participate in the policy formation in order to create a favorable atmosphere for fertility reduction. In fact, ever since the amendment of "Population Policy Outline" and the promulgation of "Plans for Intensive Promotion of Population Policies" by the Executive Yuan (cabinet) in 1983, the family planning program has gained strong support and increased cooperation from other government organizations.

The program has had a great impact on fertility decline, with the change being introduced by an intensive review (by Taiwan Provincial Institute of Family Planning) of the population policies and plans in Taiwan, sponsored by the Commission for Research, Development and Evaluation of the Executive Yuan in 1979. The study's results and recommendations were presented to the Executive Yuan, which decided to make the following changes. (1) To raise the level of the Population Policy Committee and have it be chaired by the Minister of Internal Affairs; (2) To create a manpower department within the Council for Economic Planning and Development; and (3) To complete the legal procedures for a Eugenic Protection Law. Other recommendations were either incorporated into the "Specific Measures to Strengthen Population Policies" or the first "Family Planning Four-year Program". All of these worked to facilitate a decline in fertility.

Taking into account all the manageable factors in the scheme, the main function of a family planning program should include two most important

tasks: (1) creation of a motivation to control fertility, and (2) reduction of fertility regulation costs. To people of most developing countries, especially Chinese, family planning is a relatively new concept in conflict with their traditional social norm of having a large family. Therefore, it was recognized that the first thing to do in a program is to let people understand the real meaning of family planning. If people really understand the benefit of family planning to themselves and to the family, then they will recognize that they physically can have more children than they want or realize that they may not really want that many children. Therefore, they will be motivated to regulate their fertility. On the other hand, the program should make every effort to make safe and effective contraceptive methods readily available at a low cost to satisfy those who are motivated to regulate their fertility. Family planning programs in Taiwan were designed on the base of this concept. Therefore, it is expected that the effects of a family planning program should be more than just providing contraceptives to satisfy those who are motivated by a cheap and easy way to prevent fertility, because the program can also have the function of creating demand, over and above that of social development. In other words, it can expedite the process of fertility decline through education and motivation by the public to take action.

2. Institutional development

(1) Government organizations

As mentioned in the historical development section of this paper, the first government organization related to family planning was the Taiwan Population Studies Center, which was established in 1961 to carry out related research. In 1964 a Committee on Family Health was set up within the Department of Health (of Taiwan Provincial Government) to implement the first Five-year

Program. The name of this Committee was changed to "Committee on Family Planning Promotion" in 1966, and at the same time the Taiwan Population Studies Center was incorporated into the Department of Health so as to take the responsibility of program evaluation and research. In 1969, following the announcement of population and family planning policies, these two organizations merged together to formulate the Taiwan Provincial Institute of Family Planning (but did not gain an official status until July 1975). This Institute has been responsible for the promotion and evaluation of family planning program in the Taiwan Province (including Taipei City before 1968, and Kaohsiung City before 1979).

Taipei City and Kaohsiung City set up their own family planning promotion centers following the elevation of these cities to national cities in 1968 and 1979, respectively. Starting in July 1971, responsibility for family planning at the national level was transferred from the Ministry of Interior to the newly-established Department of Health, Executive Yuan. Its roles are to plan, coordinate, and supervise the family planning program of the nation and also provide financial assistance to local program operations.

The JCRR (which changed its name to the Council for Agricultural Development in 1980) assisted the program in accounting services, visitor orientation, customs-free entry of foreign commodities, and program consultation. The Council for International Economic Cooperation and Development (later changed to the Council for Economic Planning and Development of the Executive Yuan) provided financial and technical assistance to the program until 1981. The Ministry of Defense helped the program through a two-hour family planning education of new recruits and twenty minutes of education for training reservists.

(2) Non-government organizations

As mentioned above, Taiwan's family planning program was started by a private organization, China Family Planning Association, in 1954 and it provided services for: (1) birth control guidance; (2) marriage guidance; and (3) education on family life and health, in military dependents' villages. However, it has become inactive ever since 1959 when the Department of Health started to promote the PPH program.

In 1964 Health Commissioner Dr. T.C. Hsu and his friends organized the Planned Parenthood Association of China (PPAC) to assist the government on promotion of family planning. The sensitive family planning programs, which were inconvenient to be carried out by the government, were implemented under the name of PPAC. It also supplied contraceptives and free contraceptive side-effect drugs to health stations and private physicians who had contracts with the County/City Health Bureaus. The fees collected from the acceptors were used to provide incentives to the fieldworkers and programs of their own. This organization has contributed greatly to the promotion of family planning in Taiwan.

Other private organizations, such as the Provincial Farmer's Association, helped train its members on family planning at the township level. The Taiwan Chapter of the Chinese Red Cross helped with the education of factory workers and students. The Taiwan Area MCH Center assisted with the provision of family planning services, while the Taiwan Christian Services Association helped provide services in the mountain areas.

The foreign organizations that gave assistance were: (1) The Population Council of New York (financial and technical assistance until 1975). (2) The Pathfinder Fund (donated contraceptives). (3) The Asia Foundation. (4)

The Japanese Organization for International Cooperation in Family Planning (assisted on integrated family planning program and transportation instruments). (5) The University of Michigan Population Studies Center (cooperated on research and evaluation programs). The Chinese Center for International Training in Family Planning was established in 1969, with the assistance of the Population Council, to handle the increasing number of international visitors who came to observe Taiwan's program or to receive a short-term training.

3. Operation system

The basic units for family planning's field operation are health bureaus at the county/city level, health stations and health rooms at the township level, and also contracted doctors, including public hospitals and private clinics. Family planning promotion work at the county level is mainly the responsibility of the nursing division of the health bureau. At the local health station level, in addition to the fieldworkers employed by the Taiwan Provincial Institute of Family Planning (TPIFT) and the promotion centers in Taipei and Kaohsiung Cities, health station staff are also recruited to participate in the program, especially doctors, nurses and midwives. On the average, one fieldworker is responsible for about 20,000 of the population or 5,000 couples of childbearing age. The number of contracted clinics steadily increased and reached about 1,200 in 1984. All of the Provincial and City Hospitals have been requested to establish a family planning special clinic ever since August 1969. They provide not only contraceptive services, but also family planning education and treatment of side effects of contraceptive use.

The operation of Taiwan's family planning program can be explained as follows, using an example taken from the operation in Taiwan Province (Fig. 2). The fieldworkers of the Institute of Family Planning, who are stationed at the local township health stations, go out to visit eligible couples at home. They issue coupons to potential acceptors. The acceptor takes the coupon to a local contracted doctor or public clinic for a loop insertion or sterilization operation, or takes it to a health station or a public clinic for prescription of contraceptive pills or a supply of condoms. The contracted doctor receives NT\$30 (US\$.76) per loop insertion from the woman and sends the coupon to the Institute of Family Planning through the local health bureau. Upon receipt of the coupon, the Institute pays NT\$30 to the doctor through the health bureaus and keeps the coupon for evaluation of the performance of the program. The supervisors bridge the field and headquarters.

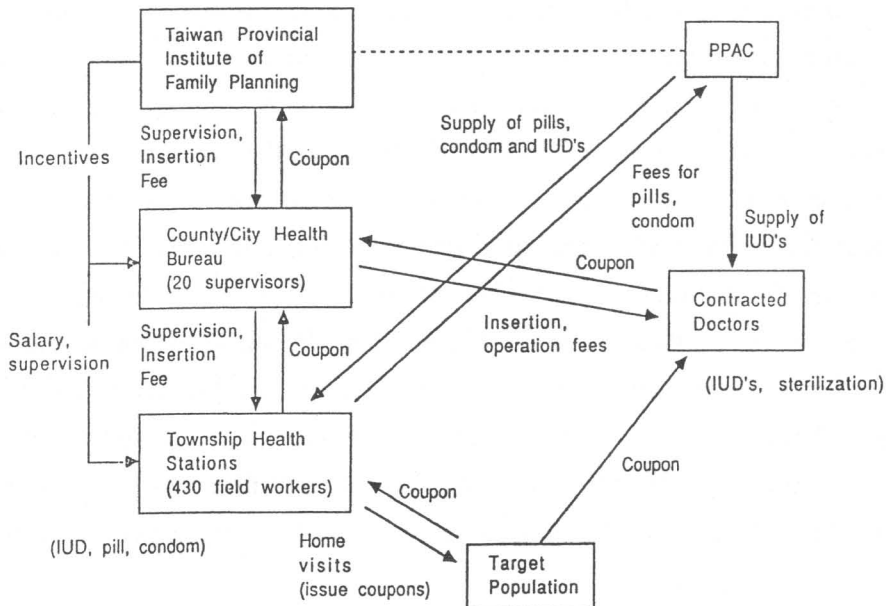


Figure 2. Schematic Illustration of Operation System in Taiwan Province

4. Program control and supervision

Supervision is very important in the family planning program, because it bridges the policy-making unit and the field, and also plays an important role in controlling the quality of fieldwork. Furthermore, supervisors convey the work targets and program direction accurately to field workers and also see to it that the work plan is carried out in the field accordingly. The supervisors also observe and correct the techniques used in the field and also bring back any problems, which could not be solved in the field. Staff meetings are conducted monthly, at the headquarters, to discuss the problems encountered in the field and to find solutions.

There are currently about 15 supervisors in the province and national level cities, and 20 supervisors at the county level. The county level supervisors are stationed at the health bureau and are responsible for supervision of fieldwork at the township level. The provincial level supervisors are responsible for the control of county/city level activities and also for spot-checking of fieldworkers and county level supervisors. In some counties, other nursing supervisors also oversee family planning activities in the county.

The responsibilities of the provincial level supervisors are:

- (1) Go to the county/city once every two months to supervise county level activities;
- (2) Spot-checking of fieldworkers;
- (3) Supervise family planning activities in public hospitals (twice a year);
- (4) Field observation of the educational skills of fieldworkers, and provision of guidance as needed;

- (5) Conduct provincial level review sessions of family planning work;
- (6) Participate in the monthly staff meeting at the Institute to discuss field problems;
- (7) Study operational measures to improve fieldwork; and
- (8) Maintain the linkage between headquarters and the field.

The responsibilities of the county level supervisors are:

- (1) Supervision of fieldwork at the township level;
- (2) Intensive supervision of townships that fail to achieve their targets;
- (3) Intensive supervision of new fieldworkers;
- (4) Conduct county level supervision session of family planning work;
Conduct field observation activities for fieldworkers in the county, and in-service training of workers; and
- (6) Coordination of family planning and other public health activities at the county level.

The main work of the township level fieldworkers includes:

- (1) To achieve the home-visit target of married women in the township;
- (2) To conduct various group education sessions in the township;
- (3) To achieve the contraceptive acceptance target, provide follow-up to users, and offer advice; and
- (4) Coordination of family planning and other public health activities at the township level.

The supervision system is something like “grease” for a machine; without it, the machine cannot operate smoothly, and therefore is very important for the family planning operation.

5. I.E. & C. activities

The education-motivation approach is one of the two important components of the program, i.e., creation of the need. It includes the following major activities:

(1) Face-to-face motivation:

The program employs about 500 full-time female family planning fieldworkers to motivate couples, and to teach them how to use contraceptives in each township. They spend about 20 days per month visiting homes of eligible couples, whose names are obtained from the household registration office, to educate and motivate them in the practice of family planning. This was the most basic and effective approach in the past, and is still effective, especially in rural areas. About 60 percent of users were recruited through this approach. At the beginning of the program, the target couples were those with three or more children with at least one son. This has now been shifted to younger couples and even unmarried adolescents. Because of its emphasis in the rural area, the program has been effective in correcting so-called "reversed selection". Each worker is given a monthly target, derived from the total target, and is evaluated accordingly.

(2) Mailing and telephone line:

A congratulation letter with a free coupon for loop insertion and education material are sent to about 90 percent of postpartum women. About 4 percent of them usually accept the free offer as the cost is quite low. Newlywed booklets are also distributed to new couples who come to register their marriage at the household registration office, reaching about 75 percent of newlywed couples. With the increase of telephone services, 15 family

planning hotlines have been set up in 15 large cities to answer questions and to call couples at home. Family planning service desks are also set up at the household registration offices in large cities to provide services to those who come to register births, marriage, or in-migration. These services cover a large part of the population missed in the home visiting.

(3) Group education:

This includes family planning education in factories (reaching about 200,000 workers per year, and done by 25 factory education workers who are nursing college graduates, and sponsored by the Red Cross); recruits and reservists training sessions; and other group meetings, such as mother's club, parents-in-law's meetings, women's association meetings, 4-H club meetings, etc. The meetings of bringing along successful contraceptive users were especially effective in convincing couples to take action.

(4) Mass media:

The program started to extensively use the mass media to educate, inform, and motivate couples in the practice of family planning in 1969, after the announcement of the policy. Radio used to be the most important medium, but it has shifted to TV and newspaper, as they have become more popular. A large number of pamphlets, leaflets, and posters, and also movies and videotapes have been produced for group education.

(5) Shift in education theme:

Reproductive physiology, contraceptive knowledge, recognition of the real meaning of family planning, the definition of a happy family, disadvantages of having too many children, and population problems have been the main theme of education since the beginning of the program. Other themes, such as how to prepare for a happy marriage, how to maintain a happy

marriage, maternal care and childcare, and premarital sex behavior were added based on the need of the target population. The appeal for practicing contraception also changed over time. Before the announcement of the policy, the emphasis was on the health of the mother and her children. A slogan of "five 3" was created in 1967, indicating "to have the first child 3 years after marriage, have a baby every 3 years, and stop at 3 children before age 33". (The ideal family size was 4 at that time.) In 1969, the slogan was "Fewer children bring more happiness". The slogan introduced in 1971 was "3321", indicating "to have the first child 3 years after marriage, have the second one 3 years later, stop at 2, boys and girls are the same (one)". The slogan "Two children are just right" became very popular among people, even among school children. Today, the emphasis is on the social responsibility of an individual for solving population problems. It is also emphasizes that one should get married at a proper age and have two children so that the society can continue, while avoiding a rapid aging of the population.

(6) Population education in schools:

In 1969 the program started to produce population education booklets, such as "Population problems and Family Planning", "Paste your umbrella before the rain", etc., for the education of secondary school students. Since May 1973, family planning education and demonstration activities of high school teachers were conducted to strengthen the family planning education of junior high school students based on a chapter in the course on health education. Starting in 1981, lecturers were sent to high schools and vocational schools to give special talks on population problems and family planning, and were well received. Ever since 1983, education organizations have started to participate in the population education program; a Committee on Population Education in Schools was established in the Ministry of

Education and started to plan school population education activities.

(7) Family Planning Month:

Starting in 1971, November (and later changed to December in 1982) was designated as "Family Planning Month". In this month, all health bureaus concentrated their limited program resources on conducting all kinds of family planning promotion activities, such as a citation of model family planning families; meetings of successful users; composition contests in schools; debates on the advantages of family planning; contests of family planning posters, songs, etc. This aroused the concerns of mass media and the public, and it was also a good opportunity to get local leaders involved by inviting them to participate or to donate prizes. It turned out to be very cost-effective in the sense that, with a limited amount of budget, it brought sensational results.

6. Contraceptive services

The contraceptive methods provided by the government program include IUDs (Lippes loop from 1964, Ota ring from 1975, and Copper T from 1982), oral contraceptive pills (from 1967), condoms (from 1970), and sterilization operations (from 1973). They were offered on the bases of self-selection. The related explanatory pamphlets were prepared for potential users, who with the assistance of fieldworkers or doctors were given a choice that fit her (or his) situation.

In order to increase accessibility and also to cut the cost of contraceptive services, the cooperation of private practitioners (especially OBGYNs) was solicited to participate in the program from the beginning. They were trained and contracted to provide IUD insertions and sterilization operations. The program pays them on a per case basis, and saves the cost of creating clinics.

These contracted doctors are distributed almost proportionally to the population, and therefore have increased greatly the program's accessibility. In 1983 there were about 1,200 contracted doctors to do IUD insertions; 655 clinics to do male sterilization operations; and 1,107 clinics to do female sterilization operations. In addition, there are more than 400 health stations and public hospitals, which prescribe oral contraceptives and supply condoms. Condoms are also distributed through fieldworkers and supply depots in rural areas. Couples can also go to drugstores, which are in every township, or they can go to private clinics, which are also densely located in every township, except the mountain areas. Mobile teams are also organized by some County Health Bureaus to serve people in remote areas, so with all this there is almost no problem of accessibility.

The contraceptives were offered to poor users free of charge, but for others, a small fee was charged. For example, half of the IUD insertion fee (NT\$30) was subsidized by the project. A cycle of contraceptive pills costs only NT\$20 to the user, and a dozen condoms costs only NT\$10. The cost of sterilization is about NT\$900 for males and NT\$2,000 for females, but the project pays these costs only for the poor, but they have been free at public hospitals since 1987. (US\$1=NT\$31) With a per capita national income of more than US\$10,000, these fees are quite reasonable, i.e., should not inhibit couples from accepting contraceptive services. Furthermore, the side effects induced from the use of IUDs are treated free by government clinics. This assures the quality of contraceptive services.

In order to reduce the social cost of contraceptive use, the program was started from the couples with many children, who are more willing to accept. The successful users were then encouraged to share their experience with other couples at organized sessions. An interesting example was that, once at a

budget review meeting of the Provincial Assembly, one Assemblyman was opposed to the budget for subsidizing male sterilization. His reason was that male sterilization equals castration, and many Assemblymen agreed on this. One of the Assemblymen had his own sterilization operation and was asked for help. He stood up and said, "Look at me! I had an operation, but am still as strong as a tiger. Vasectomy is something like a seedless watermelon; sweet, but without the seeds." Everybody laughed, and the budget was passed.

7. Program evaluation

The evaluation system has been built in the family planning program from its initiation and has been carried out objectively and thoroughly. It could be said that the program in Taiwan is one of the most intensively-evaluated programs in the world. The program on the island has kept a fairly-detailed record of the program's input and output data. The program input data include: Budgets and actual expenditures, manpower, the number of contracted doctors, the number of home visits made, and the number of meetings organized and their attendants, etc. The program output data include: the number and characteristics of program contraceptive method users by method, contraceptive users' follow-up survey data, KAP (Knowledge, Attitude, and Practice) survey data, and fertility data.

The main sources of program input data are case records and service statistics from the field, while the coupon system is the main source of the number and characteristics of program method users. When one person accepts a contraceptive method, the field worker or the clinic will fill out a three-page coupon for the applicant, which contains the record of acceptance, characteristics of the applicant such as age, education, number of children, date of last menstruation, contraceptive experience, types or referee, etc.

One page of the coupon is sent to the Family Planning Institute by the worker or clinic for subsidization and for the evaluation and analysis of the user's characteristics. A user follow-up survey and KAP survey are conducted every 3-4 years to evaluate the achievement of the program.

The program is evaluated at three levels:

(1) Monthly evaluation of achievement:

As mentioned above, each township's monthly target is expressed in terms of family planning units. This target is compared with completed family planning units calculated from the coupon returned and decides the level of achievement every month. Those who just achieve the target are graded "C", those who exceed the target are graded A or B, and those who fail to achieve the target are given a D or E. The scores are listed with the name of the fieldworkers and are distributed to each township so that everyone will know the performance of other townships. This system has been effective in encouraging fieldworkers to work harder.

Fieldworkers are also evaluated every 4 months based on their monthly achievement index (accounts for 60%) and the achievement index on the follow-up to married women (accounts for 40%). Those who have better performances are encouraged, and those who did badly are warned through the administrative channel. Prizes are given to fieldworkers and related people in the health organization based on 6 months' evaluation. The performance of a fieldworker is also graded at the end of the year, based on the target achievement (40%), and the evaluation by the health bureau (20%), health station (20%), and the Institute supervisors (20%). A bonus equivalent to a month's salary is provided to those who grade 80 or above.

(2) Evaluation of contraceptive use-effectiveness:

This was carried out mainly on the basis of follow-up surveys of various contraceptive users. The survey data were utilized to calculate continuation rates, rates of termination by reasons, and contraceptive effectiveness in order to understand the program's effects.

(3) Evaluation of the whole program:

The KAP survey data are used to analyze the knowledge level on family planning and contraceptive methods, attitude towards family planning and practice of contraceptives, and their changes in the past, so as to assess the impacts of the program. Household registration data (vital statistics) are also used to analyze fertility change and the level of population growth targets that are achieved. At the same time, input and output data are used to analyze the program's cost-effectiveness. These evaluations not only show the effectiveness of the program, but also provide important information for its improvement.

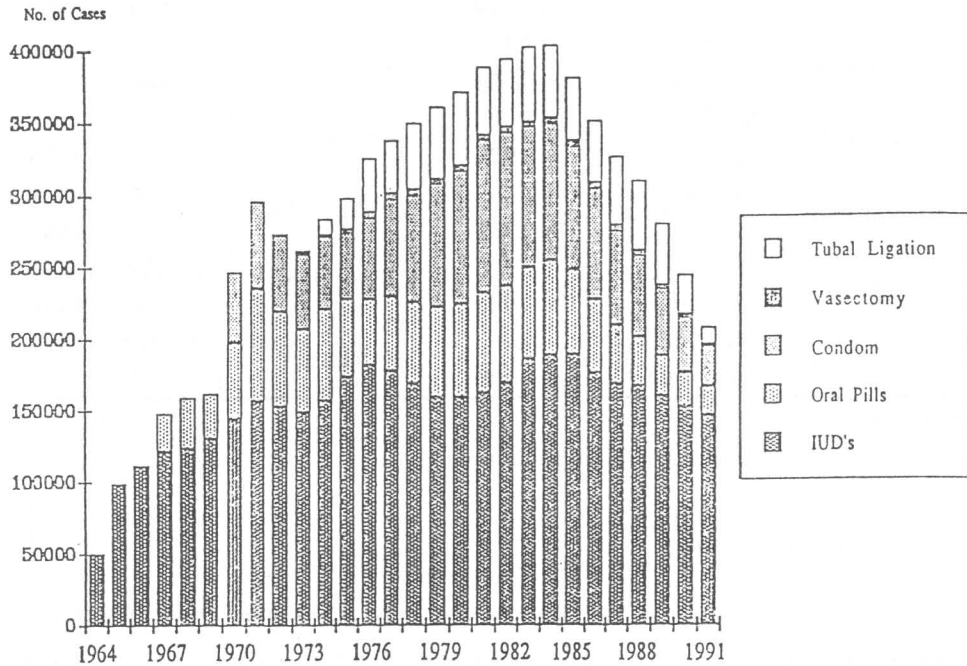
III. Impacts on Contraceptive/Fertility Behavior

1. Contraceptive acceptance and prevalence rate

(1) Number of acceptors:

During the 28 years from July 1964 to June 1992, more than 8 million people cumulatively accepted contraceptive methods provided by the government, while the number of couples of childbearing age (15-44) was about three million. This means that there was a considerable number of users who accepted the program's methods several times. As Table 1 shows, the user targets set in most of the eight medium-range plans were achieved.

Of the 8 million people, more than half (55%) was for IUD's, followed by condoms (19%), oral pills (16%), female sterilization (9%), and male sterilization (0.6%). The number of annual users by method is shown in Fig. 3. Apparently, it already passed its peak due to the high rate of contraceptive use.



Source: Tung-Ming Lee, "An Evaluation of the Impact of the Family Planning Program on Population Growth in Taiwan" PP35.

Figure 3. Acceptors of Government Provided Contraceptive Methods in Taiwan, 1964-1991

Table 1 Family Planning Targets and Achievements, Taiwan Area, ROC

Plans	Period	Targets		Achievements	
		NIR (per thousand)	No. of Acceptors	Acceptors No. (%)	NIR (year)
1 st 5-year Plan	July 1964 –	25	600,000	628,639	22.7
	June 1969	by 1969		(104.8%)	(1969)
2 nd 5-year Plan	July 1971 –	20	1,771,000	1,422,433	21.2
	June 1976	by 1976		(80.3%)	(1976)
1 st 3-year Plan	July 1976 –	17.88	911,402	1,039,281	19.7
	June 1979	by 1979		(114.0%)	(1979)
2 nd 3-year Plan	July 1979 –	16.2	1,076,301	1,132,568	17.3
	June 1982	by 1982		(105.2%)	(1982)
1 st 4-year Plan	July 1982 –	15.9	1,615,792	1,565,984	11.0
	June 1986	by 1986		(95.9%)	(1986)
2 nd 4-year Plan	July 1986 –	12.3	2,903,412*	3,375,810*	11.3
	June 1990	by 1990		(116.3%)	(1990)

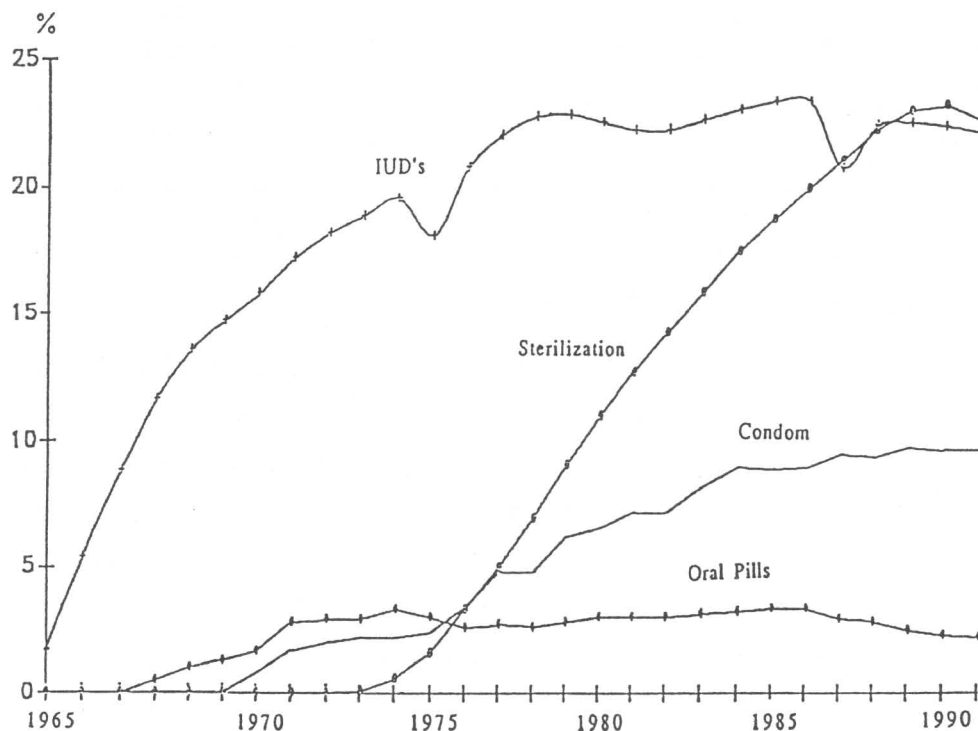
*Family Planning Units.

Source: Taiwan Provincial Institute of Family Planning.

(2) Prevalence rates:

The proportion of couples of childbearing ages who were practicing certain contraceptive methods provided in the program is shown in Fig. 4. It presents that IUD is the most prevalent and effective method while the importance of sterilization is catching up. The prevalence rates of these two methods both exceed 20%, with the prevalence rates of condom and oral contraceptive pills at about 10% and 3%, respectively. In 1990, altogether about 58 percent of the couples of childbearing ages (15-44) were using the contraceptive methods provided by the program (Table 2). In addition, about 24% of the couples of childbearing ages were using contraceptive methods not provided by the program. In other words, the contraceptive prevalence rate in

1990 was about 82%, taking into account both program and non-program users. If about 10% of the couples who were currently pregnant and another 10% of couples who were sub-fecund were added, it could be said that Taiwan achieved the stage of complete contraception by around 1990.



Source: Tung-Ming Lee, "An Evaluation of the Impact of the Family Planning Program on Population Growth in Taiwan" p59.

Figure 4. Practice Rates of Government Provided Contraceptive methods in Taiwan, 1964-1991

Table 2 The Number of Current Program Method Users and Proportion of Current Program Method Users Among Married Women Aged 15-44, Taiwan, 1965-1990

Year	IUD	Pill	Condom	Sterilization	Total	
					No.	%*
1965	71,696	--	--	--	71,696	4.4
1970	281,135	31,214	14,995	--	327,344	18.0
1975	415,043	64,006	51,533	39,378	569,960	27.6
1980	535,673	70,507	155,645	274,016	1,035,841	43.7
1985	615,312	88,990	233,156	506,655	1,444,113	54.4
1990	634,344	65,168	271,738	659,337	1,630,587	57.6
(%)	(38.9)	(4.0)	(16.7)	(40.4)	(100.0)	

*Percentage of current program method users among married women aged 15-44

Source: Taiwan Provincial Institute of Family Planning's service statistics.

(3) Characteristics of acceptors:

The median age for program method users is lower for IUD, oral pills, and condoms, but older for sterilization participants (Table 3). This is consistent with the program policy of starting with elderly couples who already have had three or more children, of which there is one son. The table also indicates that the number of children they had at the time of accepting the method also decreased: from 4.1 to 2.0 for IUD users, from 3.6 to 1.4 for pill users, from 3.4 to 1.2 for condom users, and even for sterilization participants whose number of children also decreased from 3.6 to 2.9 for females, and 3.1 to 2.2 for males. The educational level of program method users also rose significantly during this period of time due to the rise in the general educational level. However, this lessens the worry that the program recruits only couples with a better education, and therefore the danger of reverse selection. It is significant that more than 70% of the acceptors (except male sterilization) had only a primary school or less education at the beginning of the program. In the later period, as contraceptives became more acceptable, younger couples with better education started to practice birth prevention,

many for the purpose of spacing their childbirths, especially pill and condom users. As was indicated above, many participants were re-users, especially for pills in 1967 when pills were offered mainly to those who failed using an IUD. The re-usage rate is especially high for sterilization participants, because it was used to stop childbearing.

Table 3 Characteristics of Contraceptive Users in the Program

Characteristics	IUD		Oral pill		Condom		Male ster.**		Female ster.	
	1965	1989	1967	1989	1970	1989	1976	1989	1976	1989
Age:										
--24	7.5	18.0	9.6	41.6	13.3	34.0	9.2	4.4	6.7	4.3
25--29	26.6	36.3	30.4	39.7	28.2	44.3	39.2	27.4	42.7	34.3
30--34	33.2	27.2	32.0	13.2	27.0	15.4	29.7	40.7	32.2	42.1
35--39	23.3	12.8	19.6	4.1	18.3	4.5	16.6	21.3	14.7	15.8
40+	9.5	5.8	8.4	1.5	13.2	1.8	5.2	5.2	3.9	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Median age	32.4	29.4	31.6	26.1	31.6	26.8	30.2	32.2	30.1	31.3
No. of children:										
0--1	2.6	27.3	3.4	54.5	8.5	62.2	1.0	6.8	0.9	1.5
2	10.7	44.3	15.5	31.5	17.6	27.8	23.2	57.8	9.9	31.0
3	21.4	21.6	28.0	10.9	27.4	8.1	42.7	29.5	37.5	49.3
4	25.0	5.3	25.3	2.3	22.9	1.6	21.6	4.8	31.8	14.3
5+	40.3	1.6	27.8	0.8	23.6	0.4	11.5	1.2	20.0	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Median no.	4.1	2.0	3.6	1.4	3.4	1.2	3.1	2.2	3.6	2.9
Education:										
None	42.3	1.3	24.9	0.6	16.5	0.5	7.7	0.9	17.1	1.9
Primary	45.3	22.9	52.6	17.0	54.0	12.0	60.9	17.9	67.6	32.5
Jr. High	7.7	26.5	12.7	31.5	14.9	25.8	14.2	17.7	7.0	29.2
Sr. High & +	4.7	49.3	9.8	50.9	14.6	61.7	17.2	61.5	6.3	36.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Contraceptive experience:										
Never	64.3*	41.9	10.1	56.3	26.5	51.1	24.5	19.9	42.1	44.1
Has	35.7*	58.1	89.9	43.7	73.5	48.9	75.5	80.1	57.9	55.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Purpose of usage:										
Spacing	18.3*	31.1	8.1	60.4	19.1	67.3	--	--	--	--
Preventing	81.7*	68.9	91.9	39.6	80.9	32.7	--	--	--	--
Total	100.0	100.0	100.0	100.0	100.0	100.0	--	--	--	--

* 1969

** Characteristics of wives

Source: Taiwan Provincial Institute of Family Planning

The analysis of the characteristics of users indicates clearly that the program started from the couples with many children, mainly for stopping childbirth, and then moved gradually to younger couples for birth spacing. The high re-usage rate indicates that the follow-up of participants is quite intensive so that one failing at one method would then shift to another method in no time, avoiding unnecessary pregnancies and raising the effectiveness of the program.

2. Effects on fertility behavior

(1) Changes in ideal number of children:

The ideal number of children is one of the most important indicators of the demand for children. As Fig. 1 shows, it is affected by the social environment and population policies. As the society develops, mortality decreases, and the value of children diminishes, with the number of children wanted by parents also decreasing. This is regarded as an important effect of social development. However, within this frame of social development, the IEC programs in the family planning program have also played an important role in Taiwan.

The ideal number of children, according to the KAP surveys carried out by the Taiwan Provincial Institute of Family Planning, was 4 in 1965. It decreased to 3.8 in 1970, dropped to 2.9 in 1976, and then gradually to 2.8 in 1980, 2.6 in 1985, and 2.4 in 1992. I believe that the drastic drop of 1.1 children in six years from 1970 to 1976 is related to the strong IEC campaign carried out in 1967 (Five threes) and 1971 (3321 and "Two is just right!"), as stated in the former section on IEC theme changes. The decrease after 1976 was quite slow due to the fact that it is already very close to two, the number

considered as a minimum by many Taiwanese couples.

(2) Changes in fertility rates:

Analysis of fertility trend - Taiwan's fertility rate began a steady decrease in 1965, before the promotion of the family planning program. It is therefore difficult to determine the extent to which the promotion of family planning has accelerated the decline in fertility. However, if we can assume that the pace of change for factors affecting fertility (e.g. the economic growth rate, the adoption of fertility control measures in the absence of a program, etc.) was the same before and after the expansion of the program in 1964, the effect of the program on fertility should appear as an accelerated decline which can be measured as the difference in expected and actual fertility decline of the population.

As Table 4 shows, the average annual rates of decline of both the general and total fertility rates for the three periods after 1963 are all more than twice, even triple, of those before 1963. This could be regarded as evidence of an accelerated decline of fertility attributable to the expansion of the program.

Table 4 Average Annual Rates of Decline of General Fertility and Total Fertility Rates before and after the Expansion of the Program in 1964, Selected Periods, Taiwan

Fertility Rate	Time Periods *			
	1953-1963	1963-1970	1970-1975	1977-1985
GFR	-1.359%	-4.854%	-4.767%	-4.093%
(index)	(1.0)	(3.7)	(3.5)	(3.0)
TFR	-1.906%	-4.135%	-6.536%	-5.004%
(index)	(1.0)	(2.2)	(3.4)	(2.6)

* 1976 is excluded to avoid the influence introduced by the "year of the dragon", which is considered by Chinese as a good year to have babies.

Source: *Taiwan Demographic Fact Book*, and *Taiwan-Fukien Demographic Fact Book*, Taipei: Ministry of Interior, Taiwan, relevant years.

Decomposition of fertility change - An analysis of age-specific fertility that is free from the effect of age composition for the three periods from 1960 to 1975 shows that the large proportion of fertility decline in women age 30 and above was entirely due to fertility control. For these women, change in marital status had only a small negative effect on fertility. For women aged 25-29, the effect of fertility control increased from 1.3 percent in 1960-1965 to 22.1 percent in 1970-1975. The same was also true for women aged 20-24 (Liu and Sun, 1979).

A decomposition of changes in crude birth rates for various periods from 1965 to 1992 shows that the decline in the crude birth rate between 1965 and 1980 was due largely to decline in marital fertility, which is strongly associated with the use of contraceptives (Table 5). During this period, a change in age structure worked to raise the birth rate, reflecting the effect of the "post-war baby boom". The same was true for the period 1980-85. The small decline in the birth rate from 1985 to 1992 was contributed largely by a change in percent married, i.e., late marriages. Therefore, it could be said that during the two decades right after initiation of Taiwan's family planning program, the main force of fertility decline was the practice of birth control methods among married couples. Although it is hard to assess the proportion of the family planning program's contribution from this analysis, the effort of the program in promoting contraceptive use and introducing the idea of limiting family size cannot be neglected.

**Table 5 Decomposition of Changes in Crude Birth Rates,
Taiwan, 1965-92**

Rate	Rate Changes			
	1965-1980	1980-1985	1985-1990	1990-1992
Crude Birth Rate:				
Beginning of period	32.13	23.35	17.92	15.62
End of period	23.35	17.92	16.62	15.53
Change in Crude Birth Rate due to:				
Age structure	7.84	2.46	-0.67	-0.42
Percent married	-4.58	-1.48	-2.67	-0.70
Marital fertility	-10.49	-3.70	2.03	-0.03
Interaction	-1.55	-2.71	-0.01	0.05
All factors*	-8.78	-5.43	-1.30	-1.10

*Discrepancies are due to rounding.

Source: Same as Table 4

Fertility change in different social strata - In the process of demographic transition, it is natural that those with a better education or higher social status who are knowledgeable about the idea of family limitation and methods of fertility control will start earlier to control their fertility. This is implied in the schematic process shown in Fig.1. Therefore, if the process was left to natural development, it is inevitable that the fertility differentials will widen. In order to avoid this problem, Taiwan's family planning program put its emphasis on the less-developed strata from the beginning. The results are that the preferred number of children in the lower strata decreased as much as that of the higher strata, and therefore the differentials by social strata did not widen.

The large differentials in percent of those who have ever practiced contraception by education level observed in 1965 (19% vs. 60%) disappeared by 1976 (78% vs. 78%). This is reflected in the decrease of fertility by educational level (Table 6). The decline in total fertility rates for those with a primary school education (-25%) exceeded that of women with a senior high

school or better education (-19% and -16%) during the period 1966-74. For the period 1966-83, the percent decline was 39% for primary school graduates, 18% for junior high graduates, 33% for senior high graduates, and 35% for college graduates. This reduced the degree of the so-called "reversed selection". The higher percent decline observed in 1983-92 among senior high school or better education was due largely to delayed marriages for this group of women.

**Table 6 Total Fertility Rates by Wife's Education,
Taiwan, 1966, 1974, 1983, 1992**

Year	Educational attainment					Ratio: College grad./ Prim. grad.
	Total ^a	Primary. grad.	Jr. high grad.	Sr. high grad.	College grad.	
1966	4,676	4,600	3,023	2,781 ^b	2,503 ^b	0.54
1974	2,940	3,445	2,460	2,265	2,105	0.61
1983	2,162	2,826	2,474	1,858	1,638	0.58
1992	1,733	2,824	2,416	1,476	1,219	0.43
Percent decline:						
1966-74	-37	-25	-19	-19	-16	
1974-83	-26	-18	+1	-18	-22	
1966-83	-54	-39	-18	-33	-35	
1983-92	-20	-0	-2	-21	-26	
1966-92	-63	-39	-20	-47	-51	

^a Includes self-taught, literate and illiterate, and less than primary school graduates not shown separately, because numbers were very small in the later years.

^b Estimated from the available combined rate of 2,604 for senior high and college graduates from the 1974 ratios.

Source: Same as Table 4.

Impact on population quality - Taiwan's family planning program has been quite effective in preventing high-risk pregnancies, as indicated in the large decrease in fertility among women aged 30 and above. The proportion of married women aged 35-39 who currently practice contraception increased from 36 percent in 1965 to 78 percent in 1985. Therefore, the proportion of births by this group of women decreased from 7.6 percent in 1966 to 2.3

percent in 1986. At the same time, the proportion of births of the 4th or higher order also fell from 19 percent in 1976 to 7 percent in 1985. With fewer children, parents are more capable of raising children well, and all of these changes should work to raise the quality of population in Taiwan.

(3) Program effectiveness:

The number of current program users has increased quite rapidly ever since 1965 (Table 2). It has been noted that the rate of current use rose greatly after each introduction of a new contraceptive method. By the end of 1990, about 58 percent of eligible couples (with wives' aged from 15 to 44) were currently using one or more of the four program methods.

It is estimated that the use of these methods has prevented about 5.87 million births during 1965 to 1990 (Table 7). This is equivalent to about 65 percent of the total number of births prevented through the use of program and non-program methods and induced abortions. In other words, the gross effect of the program is about 65 percent.

Table 7 Number of Births Averted by the Use of Program Methods*

Year	IUD	Pill	Condom	Sterilization	Total	Cumulative Total
1965	3,688	--	--	--	3,688	3,688
1970	75,147	5,275	--	--	80,422	271,841
1975	114,124	15,184	8,819	5,025	143,152	868,244
1980	155,128	14,875	28,326	72,379	271,208	1,939,767
1985	176,062	19,429	45,908	153,205	394,604	3,650,911
1990	186,585	16,260	53,101	212,776	468,692	5,867,698
1965-1990:						
No.	3,210,067	321,550	564,422	1,771,659	5,867,698	5,867,698
%	54.7	5.5	9.6	30.2	100.0	

* For the calculation method of the number of births averted by each contraceptive method, see Sun (1975)

Source: Taiwan Provincial Institute of Family Planning.

In terms of the relative contribution of different program contraceptive

methods, of the 5.87 million births prevented from 1964 to 1990, 54.7 percent were due to the use of IUDs, 30.2 percent to the use of sterilization, 9.6 percent to the use of condoms, and 5.5 percent due to the use of pills. It should be pointed out that the importance of sterilization has been increasing since the late 1970s due to its long-term effects.

IV. Concluding Remarks

Taiwan has completed its demographic transition in less than 70 years from the period 1920 to 1986 (Fig. 5). By 1986, the crude birth rate was brought down to 15.9 per thousand, the total fertility rate to 1,680, and net reproduction rate to 0.8 - below replacement level. In the process of this transition, especially after 1965, the well-organized family planning program played an important role in expediting the process, which was strongly associated with the socio-economic development in the society. In 1987 Taiwan was listed at the top by the Population Crisis Committee as one of the most efficient and effective family planning programs in the world. Taiwan gained this status through endless effort and improvement. It could be fair to say that Taiwan would have completed its demographic transition even without a family planning program, but it would have taken a much longer period of time. The family planning program contributed to the social and economic development by shortening the process.

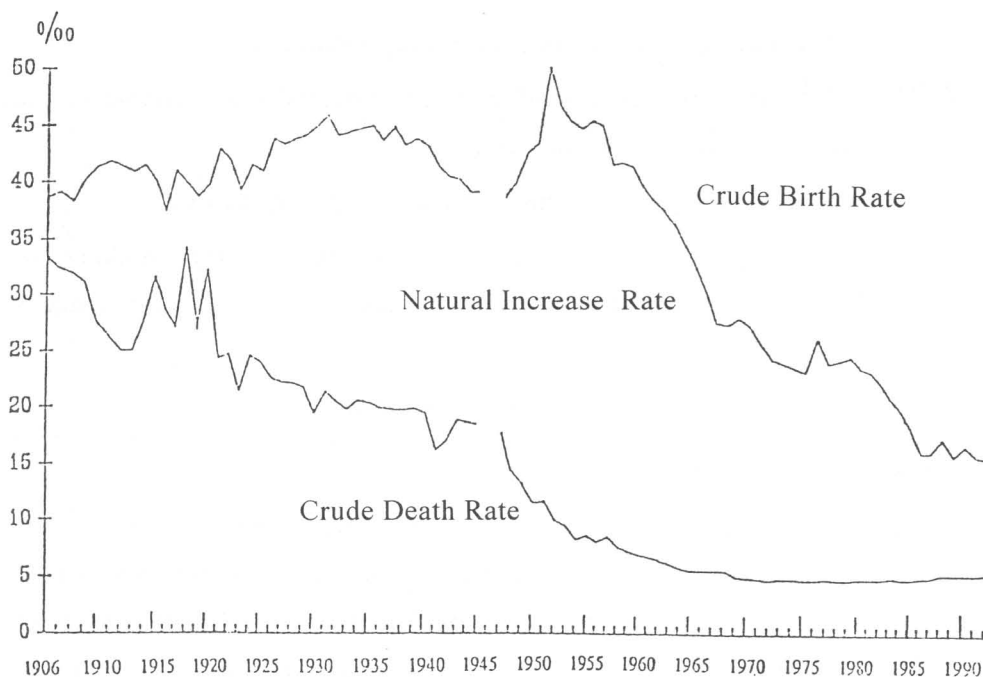


Figure 5. Crude Birth Rate, Crude Death Rate and Natural Increase Rate Taiwan, R.O.C. 1906-1992

With completion of the demographic transition, the family planning program in Taiwan has achieved its primary goal set in the first stage. What then might the program's function be in the second stage? I think there are few things the program should spotlight on in this post-transition period:

1. It should focus on improvement of population quality through maternal and child health care and eugenic protection.
2. It should pay more attention to the following:
 - (1) The poor and disadvantaged groups and areas;
 - (2) Education of young people about family planning and sex to minimize

incidences of illegitimate or premarital pregnancies;

- (3) Testing and introduction of new contraceptives as alternatives to sterilization and induced abortion;
- (4) Emphasize the benefit of child spacing and breast-feeding;
- (5) Raise the quality of reproductive health care, including treatment of infertile couples, and screening for genetic and other birth defects; and
- (6) Promotion of a two-child family as the ideal.

3. Privatization of family planning services.

With 80 percent of the couples of childbearing age practicing contraceptive use in 1990, it is very likely that the future fertility trend would be guided by the trend in preferred number of children, which is already down to 2.4 in 1991 and might continue to fall to 2.2 or less, as was experienced by women with a senior high school or better education in 1991 (Fig. 6). The total fertility rate went up from 1,680 in 1986 to 1,810 in 1990 and to 1,730 in 1992. It would not be surprising to see that it goes back to 2,000 or so in the future. However, under any plausible fertility assumption, the very low fertility rate will lead Taiwan towards having a substantially older population, which has tremendous effects on many aspects of society. This is the cost a society has to pay for by reducing its population growth rate quickly, but the cost should be smaller compared to the disastrous results of an explosive population growth.

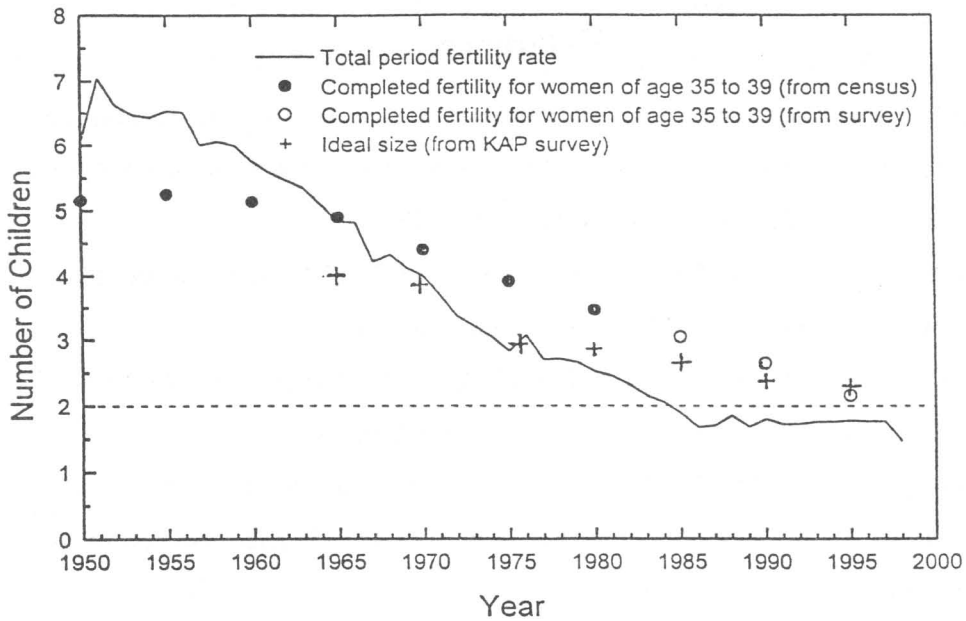


Figure 6. Changes in Total Fertility Rates, Completed Fertility, and Ideal Number of Children, Taiwan, 1950-1998.

In conclusion, Taiwan's experience indicates that a well-organized family planning program should work to reduce the ideal family size, promote contraceptive use, and therefore change fertility behavior. Its effects go well beyond just those of social and economic development.

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