

Mohammed A. Mabud

**WOMEN'S
DEVELOPMENT,
INCOME AND FERTILITY
IN BANGLADESH**

Women's Development, Income and Fertility

Mohammed A. Mabud

March 1985

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FOR NEW ORG.

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To

My Parents :

Mohammed A. Salam

Mahmuda Khatoon

(II)
FOREWORD
(1)

Women's development in general and their participation in income generating activities in particular, deserve a special consideration in national development planning on two counts. First, leaving the women, who comprise about half the total population, outside the purview of development, no nation can achieve any significant degree of success. It would be like working half strength compared to nations where women make full participation. Secondly, women's participation in gainful labour is expected to reduce fertility, a common development goal of most developing countries, particularly so for ours. Dr. Mabud's study has primarily pursued the second line of policy link and investigated the role of female participation in economic activities in promoting their life style and improving their status in the family and society which in turn inversely influence their reproductive desire and fertility.

Experience in developed countries and many developing countries have documented varying degrees of inverse relationship between female labour force participation and fertility. Conclusive evidence to establish similar inter-relationship in our cultural context was so far lacking. External Evaluation Unit of the Planning Commission under the leadership of Dr. M. A. Mabud addressed this issue in the concerned evaluation study of the women's programmes which have produced importantly required evidences on the pattern and effectiveness of female income opportunities, economic implication of the same and impact on promotion of contraceptive practice and decline in fertility. Value of these experiences for policy application can never be undermined, particularly at a time when the Planning Commission is poised for formulation of development policy for the Third Five Year Plan. Besides the population sector policy, these findings also bear important implication for the sectoral policies of Cooperatives, Social Welfare, Women's Affairs, Industries and Health.

I am confident, the study findings will lead towards better formulation of women's programmes designs. I congratulate Dr. M. A. Mabud on his successful completion of the doctoral study and for enriching our knowledge in this hitherto neglected field of our development.

Planning Commission,
Dhaka. March, 1985

Prof. Atiqur Rahman Khan

(III)
FOREWORD
(2)

Among the general development goals, one which has emerged relatively recently has been the emphasis of development plans on meeting basic human needs, particularly in the areas of employment, education and health. Along with such an orientation of emphasis it was also gradually recognized that in many societies women continue to be disadvantaged by comparison with men and left far behind in the acquisition of benefits from economic development. The World Population Plan of Action adopted in 1974 at Bucharest spelled out the need for:

The full integration of women in the development process, particularly by means of their greater participation in educational, social, economic and political opportunities, and especially by means of the removal of obstacles to their employment in the nonagricultural sector wherever possible. (Paragraph 32.)

Ten years later, in the Declaration on Population and Development, the International Conference on Population held in Mexico City endorsed this objective and expanded its emphasis:

Improving the status of women and enhancing their role is an important goal in itself and will also influence family life and size in a positive way.....To achieve this goal, it is necessary for men and women to share jointly responsibilities in areas such as family life, child caring and family planning. Governments should formulate and implement concrete policies which would enhance the status and role of women. (Paragraph 11.)

Among the developing countries of the world, Bangladesh with nearly 100 million population on 144 thousand square kilometers growing at a rate of around 2.5 per cent a year, is probably the most densely populated one. To curb the rapid population growth Bangladesh launched, with international assistance, an intensive family welfare programme in the mid-1970s. Against considerable odds and problems, economic, cultural and administrative, the programme only slowly started to gain momentum. One of the obstacles to a more rapid pace of acceptance of the family size limitation has

been the traditional dependent status women have in the family and in the society as a whole. This has been reflected in, among other indicators, their very low (by comparison to males) school enrolment and educational status, and excessive child mortality.

From the start of the government programme, it was clear that without a significant improvement in these conditions the success of the programme would be limited. One way of increasing the status of women and improving their living conditions has been to enable them to acquire skills and increase their earning capability in the context of the rural economy. Several strategies were introduced in a series of experimental programmes: women credit co-operatives, vocational training programmes, mothers' clubs and others.

A great deal of attention has been devoted to the study of the relationship between women's economic and social status in the family and in society, and their fertility. So far, it is surprising that there has been only a limited yield from this research effort: simply a general agreement that "the position of women in society is significantly related to the level of fertility though there is substantial difference about specifics" (W. Mauldin and B. Berelson: *Conditions of fertility decline in developing countries, 1965-1975. Studies in Family Planning*, 1978, 9(5)). Dr. Mabud's is an attempt to evaluate the impact of one such specific—the vocational training programme in two directions: its impact on the women's earnings and on their reproductive behaviour. His close association with the government's population control programme undoubtedly prompted him to undertake this study; and his practical sense for the policy implication of his findings has resulted in a long list of recommendations for improvement of the programme and expansion of its positive aspects. Such evaluations are still comparatively rare and, if undertaken, they are seldom used to improve and modify the implementation and performance of the programme with which they are concerned. It is to be hoped that this fate will not meet Dr. Mabud's work. It should be read thoroughly and its conclusions should be given careful and serious consideration.

Australian National University, Canberra.
March, 1985.

Prof. Lado T. Ruzicka

PREFACE

Some knowledge about women that comprise a half of a society is always needed for any time in human history. Unfortunately, our knowledge about them is too little. Whatever studies have been done so far are, by and large, directly or indirectly on men rather than women. As a result, we know less about women than men. This study is merely an attempt for a search for a knowledge about a segment of women who are rural and economically disadvantageous and who live in a country that is also known to be less developed in modern sense. The particular aspects that I have investigated are their income, contraceptive and reproductive behaviour after their exposure to a carefully designed skill oriented programme. The choice of a topic is entirely of mine and owes a great deal to my curiosity to know how things change in them, once some opportunity is given. The findings of the study extremely are illuminating for me. My appreciation goes to those women who are my source of knowledge, whatever little it may be.

This book is on my earlier works done in connection with my Ph. D. dissertation in the Department of Sociology at the Boston University, USA. The dissertation has to be trimmed considerably by eliminating many tables and graphs in order to bring it to the present form. In some places, the text is updated by taking into account certain contextual information, while trimming elsewhere but not deliberately at the cost losing contents.

Time passes by, yet one cannot forget one's intellectual mentors for their contribution to one's just cause for knowledge. I recall with gratitude Prof. Robert W. Morgan, James E. Teele and Frank L. Sweetser of Boston University, U. S. A. for their guidance and sharpening my understanding about many matters relating to this study. My sincere thanks are also due to several faculties and friends with whom I have had the benefits of consultations. They are Profs. Michael Useem of the Department of Sociology and D'Agastino of the Department of Statistics of Boston University,

(VI)

U. S. A., Dr. R. H. Chaudhury of the Bangladesh Institute of Development Studies and Dr. M. Alauddin of the Dhaka University, and Dr. Stefan C. Christopher of the External Evaluation Unit, Planning Commission.

Encouragement of publishing the dissertation first came from Prof. Morgan while I was at Boston ; and later on, from Prof. Warren C. Robinson of Pennsylvania State University, Dr. James E. Phillips, Scientist, ICDDR, B, Dhaka, and Dr. Pisharoti of the World Bank and several other members of teaching profession notably Profs. Ahmedullah Mia of the Dhaka University and Prof. Lado T. Ruzicka of the Australian National University, Canberra. I sincerely appreciate their intellectual supports which have considerably augmented my mental strength. The views expressed by some of these distinguished scholars are also appearing in this book.

Intellectual activity can grow in an environment consisting of persons who are endowed with quality of positive outlook and supportive attitude towards colleagues who consciously undergo the stress and strain of some work like this. Prof. Atiqur Rahman Khan of the Bangladesh planning Commission eminently represents that environment. I sincerely appreciate his strong moral support for publishing this book. I also sincerely appreciate the support and encouragement that I have received in this regard from Mr. M. Mujibul Huq, Member, Bangladesh Planning Commission. The publication of this book has been made possible by the External Evaluation Unit of the Bangladesh Planning Commission. Dhaka with financial support from the Canadian Agency for International Development. I like to put on record my deep sense of gratitude to these organisations.

I am grateful to my wife Farida for her patience and encouragement. I also appreciate my children Rifat, Hasan and Hussain for providing me the necessary period of uninterrupted concentration and showing a sense of their satisfaction for my devotion to this work.

March, 1985

Mohammed A. Mabud

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CHAPTER I

Introduction

The centrality of this book is to find out a relationship between women's trade skills and income, and also between income and women's status and reproductive behaviour in rural Bangladesh. Two basic questions addressed in this connection are: what impact does a vocational training programme have on the women being trained in the programme with respect to their income, contraceptive and reproductive behaviour? Has such a programme any impact upon the contraceptive and reproductive behaviour of the untrained village women?

In seeking answers to the above questions, this study has utilized the 1979 follow-up data concerning 520 trained (directly exposed), 655 programme (indirectly exposed) and 312 non-programme (unexposed) women. The trained women were directly exposed to some trade skills and population education including child care. This author conducted a retrospective survey in 1981 to reconstruct the base line situation in 1976 to observe any variation between the base year and the follow-up year (1979). He has also used the 1976 Bangladesh Fertility Survey (BFS) data and the 1979 Bangladesh Contraceptive Prevalence Survey data for comparison with the 1979 follow-up data of the programme and non-programme women. In each case, the data were collected through structured questionnaires. A multistage sampling procedure was followed for randomly selecting the households.

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In recent years, a number of countries in South East Asia, such as, Srilanka, Pakistan, Nepal, India and Bangladesh have realised that the practice of isolation and seclusion of female folk is depriving them of direct access to social and economic resources in the community and thus, creates an extreme condition of social and economic dependence on men. This situation compels them not only to marry early, but also militates against the effective use of birth control within the marital union. As a result, some of these countries, particularly Bangladesh, Pakistan, and Nepal, are experiencing high marital fertility. It is now widely belived that social and economic opportunities for women may create an enviroment in which patterns of early marriage and frequent child bearing will not be easy to justify. It is towards this end, Bangladesh has undertaken a "women's vocational training programme" which combines in itself both craft-training and family planning education to make women economically productive and ultimately self-reliant (2) in addition to directly exposing them to family planning knowledge and MCH (3). The Government of Bangladesh established this programme in 1976 with assistance from IDA in eight upazilas (4). The specific objectives of the programme are :

- i) to impart trade skills (5) to raise income level of women ;
- ii) to provide Family Planning and MCH education to these women ; and
- iii) to increase contraceptive prevalence rate among the trained and untrained programme women.

The project has also one implicit objective, namely, to raise the status of the trained women at the household level.

It is expected that programme areas where the trained women and training centres will be located will show better results in

(3)

family planning than non-programme areas. In other words, the presence or absence of the trained women and training centres is expected to make a significant difference in contraceptive and reproductive behaviour.

The experimental programme was started in 1976. The period of time of this study was until 1979, when the Planning Commission conducted the follow-up survey to asses its efficacy in terms of success or failure, sucess being defined as how able the programme was to provide trade skills, and how these trade skills increased the income level of the trained women, and also what changes had been brought about in fertility behaviour of the trained women as compared to the untrained women.

The programme is based on the assumption that the women, especially in the rural areas of the developing countries want to work outside home, provided opportunity is available to them. In this context, it is also thought that works outside home may have some liberating effect as it gives them some money to spend at will ; bring them some knowledge of the outside world ; and improve their self-image. These, in turn, would result in changing opinions on martital timing and a greater say in decision-making in the family with ultimate consequence of achieving a small family norm. All these may be considered as an argument for setting production workshops or small scale cottage industries for the rural women of reproductive age specially those who are unmarried or women with fewer children. The theoretical model considered for this study postulates the relationship of trade skills with incme and income with decision-making powers leading to a desire for a fewer children. Such a trend can be reinforced by family planning education for contraceptive practice to regulate fertility.

In demographic science, women's development is considered as a contributory factor for fertility decline, Perhaps, this is why policy makers in the less developed countries take interest on the improvement of the status of women. But women's development

is not the sole panacea for the fertility regulation. It is only complimentary to other factors effecting social changes for a broader transition from pre-modern to modern. The programme envisaged above is only an attempt to observe how transition takes place to a group of women exposed to trade skills that are hitherto unknown to them and how their reproductive motive and socio-economic condition change as they continue directly or indirectly in the programme.

Bangladesh is pre-dominantly a rural country with ninety percent of its population living in the villages. The women's programme referred to above is also located in the rural areas. The Government's major thrust of development is to improve the condition of the rural population of which nearly a half are women whose income earning opportunities are extremely limited. It is, therefore, of great importance from the point of view public policy to ascertain how women respond when opportunities are available and to see whether opportunities bring any change in their life situation.

Based on some theoretical considerations, for the trained women (directly exposed), four outcomes were hypothesised: an increase in trade income, decision-making power, and contraceptive practice, and a depressing effect upon fertility. For the programme (indirectly exposed) women, two outcomes were hypothesised: an increase in contraceptive practice and a depressing effect upon fertility.

- (2) "Use of Women's vocational training programme for population activities" Bangladesh Women's Rehabilitation and Welfare Foundation, 1978—P.3.
- (3) Maternal and Child Health (MCH)
- (4) Upazilas is a geographical unit consisting of 150-200000 population, which is roughly equivalent to an American country.
- (5) Sewing, handicraft, poultry raising, doll making etc.

Keeping in view the above hypotheses, the study was designed to test two theoretical models which postulate certain relationships between the programme contents and change in KAP in family planning, and in fertility. These models were tested by the following two evaluation designs:

Trained Women (Directly Exposed)		Untrained Women	
Before (1976) N=461	After (1979) N=520	Programme Women (indirectly exposed)	1976 1979 $t_1 (i) \times t_2 (i)$ N=4930 N=520
* $t_1 (E)$	$\times$ $t_2 (E)$	Non-Programme Women (unexposed)	$t_1 (u)$ $t_2 (u)$ N=4930 N=312
Where, * $t_1 (E)$ means the baseline situation of the trained (directly exposed) women in 1976.		Where, $t_1 (i)$ means 1976 BFS data for the indirectly exposed women.	
$t_2 (E)$ means the follow-up data of the directly exposed women in 1979.		$t_1 (u)$ 1976 BFS data for unexposed women.	
		$t_2 (i)$ means the first follow-up data of the unexposed women.	
		$t_2 (u)$ means the first follow-up data of the unexposed women.	

There is a theoretical reason to believe that there will be some catalytic effect of the trained women upon the untrained village women in respect of their current outlook on contraceptive and reproductive behaviour. The training programme which

* $t_1 (E)$ a retrospective survey was conducted in 1976 to reconstruct the baseline situation of the trained women in 1976.

combines in itself both trade skills and family planning education, will have some diffusion effect in the rural community through these trained women.

As mentioned above, two designs were followed to evaluate programme efficacy: one for the trained women, and the other for the untrained women of the programme and non-programme women. The former was designed to observe the changes with regard to trade skills, income, decision-making power and contraceptive and reproductive behaviour; the latter was designed to measure the differences between the programme women (indirectly exposed) vis-a-vis the non-programme (unexposed) women.

The specific questions which have guided our analyses of the data concerning the trained women and untrained women of this study are:

1. Trained Women

- a) Have the trade skills raised the income level of the trained women?
- b) Which of the particular vocationally trained women have shown more income than others?
- c) Whether women's trade income has brought about any change in their decision-making power in the family?
- d) Have the trained women made any improvement in their family planning knowledge, attitude and practice as a result of their exposure to the programme?
- e) Have the women succeeded in lowering their fertility?

2. Untrained Women

- a) Has the programme resulted in the increase in the knowledge, attitude and practice in Family Planning?

- b) Does the programme women differ significantly from the non-programme women in lowering fertility?

Organization of the Document

This chapter, as we have seen, is entirely devoted to introducing the theme of this book. It also highlights the context within which the women's programme was undertaken in the rural Bangladesh. Here we have raised some hypotheses and research questions to guide our analyses.

In chapter II, we have discussed the problem in the context of social, cultural and economic factors affecting women's social change and reproductive behaviour in the developing countries, especially Bangladesh, the setting of this study.

In chapter III, we have reviewed the literature from three different, but related, areas viz Bangladesh's demographic scenario, factors affecting fertility decline in Bangladesh, and status and role of women in Bangladesh in sociological perspectives.

In chapter IV, we have discussed sources of data, research variables, foci and units of analyses, and several techniques to analyse the data.

In chapter V, we have briefly described our two units of analyses, namely, the trained and untrained programme and non-programme women.

In chapter VI, we have briefly discussed the trained women's status at the household level by some selected indicators and tried to show whether the training programme has brought about any changes in this respect.

In chapter VII, we have exclusively devoted ourselves to finding out the various factors or determinants of the trained (directly exposed) women's income from trades, contraceptive and reproductive behaviour keeping in view our research questions raised in chapter I.

In chapter VIII, we exclusively present a comparative scenario of the untrained programme and non-programme women and have tried to identify the factors influencing their contraceptive and reproductive behaviour.

lastly, in chapter IX, we have summarized the findings discussed in the previous chapters under the rubrics of the "Trained Women" and the "Untrained Women" to draw some conclusions of the study and also, indicate some policy measures and research needs for Bangladesh.

CHAPTER II

Constraints to Women's Social Change

In recent years, the debate regarding women's status and fertility has been of considerable interest to social scientists. It is hypothesised that enhancement of women's status competes in various ways with their child rearing. While this view is often stated in the literature, there is insufficient conclusive evidence regarding the relationship between women's status and fertility, and particularly whether fertility reduction arises from programmes that generate income opportunities which, in turn, provide roles that directly compete with their domestic works. This book has, to some extent, examined these widely held views to find out some clues to formulating social policies to achieve simultaneously two societal goals—involving women in income activities to enhance their status, and reducing their fertility. Infact, the tasks of involving women in development activities to generate income for them and to gradually mould their reproductive behaviour are quite complex. Due to various socio-cultural and economic constraints, efforts to improve their status and roles generally have been met with disappointment (Berelson, 1969). This chapter is devoted to identify these constraints to women's social change with reference to developing countries specially Bangladesh which provides substantive source of our knowledge.

Socio-Cultural Constraints

Although the need for equality of opportunity, irrespective of sex, is recognized, society is still dominated by men, especially in most of the developing world. Women are generally considered to be delicate and not suitable for doing hard jobs as men do. The government actions to alter this kind of societal perception

are found to be insufficient. One analyst (Germain, 1975) observed :

"To date, most development programmes that have reached women including family planning programmes have dealt with women mainly as reproductive agents and have focused on domestic science, nutrition, child care and so on. Furthermore, where other social programmes such as literacy training exist women usually have less access than do men."

In fact, most development programmes that exist in the various sectors of the economy do not provide scope for women's participation. Such programmes are designed without taking into account women's strength and limitations and with more focus on men's participation than women's. Thus, women continue to have few opportunities to contribute to the socio-economic development.

Lack of women's organizations is a serious obstacle to their social change especially in the rural areas of developing countries. A few organizations which exist also operate within the narrow visions of the elitist urban women and are not generally extended to the countryside to integrate the rural women. As a result, the rural women who are scattered all over the country are in serious difficulty to organize themselves into a cohesive social group and create social consciousness of their problems. Combined with this trend is the parents' preference for son's education as they consider that a son provides greater social and economic security than a daughter. Due to this kind of parental motivation, a great literacy differential has been created between men and women so much that the former depend on the latter for even simple reading, writing or basic arithmetic (Kankalil, M. S., 1973, P. 19).

To-day more women are illiterate than men, especially in developing countries, and subject to deprivation of many benefits which a society offers to the individuals. Illiteracy appears to be a great obstacle to their social change. This assumption is sup-

ported by the findings of the Committee on the Status of Women in India (1974, p. 264) :

"Illiteracy remains the greatest barrier to any improvement in the position of women in employment, health and in the exercise of legal and constitutional rights and in generally attaining the equality of status."

Further evidence of the glaring disparity between men and women can be seen when one considers the different levels of schooling. Describing the Bangladeshi situation¹ Chaudhury and Ahmed observed (1981, p.40) :

"Of those aged 15 years and over, 12.9 percent rural men compared with only 6.6 percent rural women have completed 1-5 years of schooling. In urban area, the comparable figures are 14 percent men and 10.8 percent women."

The above situation still prevails as evident from 1981 census which shows 31 percent male literacy rate as compared to 16 percent for the female. If we examine schooling beyond primary level by sex, we find that men-women educational ratio is almost 6:1. These educational inequalities create an environment for a low level of communication between the spouses which may impede the process of decision-making between them, including the practice of family planning. This inequality also encourages the early marriage of girl whose parents frequently take them out of school, if they attend at all, on the ground that too much schooling makes a girl unmarriageable (Jahan 1973 ; p. 6). In the rural villages, however, the combination of either no schooling for girls or only five or six years of schooling at most, with the absence of gainful employment after they leave school, is highly conducive to early nuptiality. Also, how can a girl refuse to marry when she has no other options (Dixon, 1975; p. 301) ?

Traditionally, the women look upon their husbands as a primary source of support. Upon marriage, the young Muslim or Hindu

¹ Chaudhury and Ahmed used 1974 census data.

bride—once totally dependent upon her own family for her economic survival and social identity, shifts her primary expectations for support to her husband and his kin (Kankalil, 1973; p. 10). This social powerlessness of wives makes them generally compliant to their husbands and may be also related to their reproductive behaviour. Analysing the condition of women in Mexico City and Ankara, David Goldberg (1974, p. 304) has observed that couples among whom husbands make most decisions about social contacts, household budgets, and other family matters, have more live births, expect more children ultimately, and are far less likely to have ever used contraception than couples among whom both decide or among whom the wife usually or always makes decisions. In a highly analytical review on the decision-making powers of wives and their reproductive behaviour, Dixon (1975; p. 304) concludes :

“Indices constructed from a number of countries regarding husbands’ control over their wives’ movements were strong predictors of actual and expected family size and of contraceptive practice with husband dominant couples being most fertile.”

The foregoing analysis clearly shows that lack of opportunity of women, especially rural women to organize themselves into a powerful social group combined with lack of education and employment appears to be a serious obstacle towards fulfilling their potentialities in life. Both these factors may have their obvious implications for social powerlessness and reproductive behaviour.

Seclusion, isolation and separation are all manifestations of a culture—pattern of varying degrees of prevalence to which women are highly subjected, especially in the Muslim societies. Seclusion means here “Keeping the women aloof or away from men within the confines of their houses.” This kind of seclusion obviously acts as a barrier to her right to free mobility and acquiring knowledge about the outer world. “Purdha” meaning “veil” or “curtain” represents a system of isolation from outsiders and

imposes a high standard of modesty (Chauchury and Ahmed, 1981 ; p. 5). It also implies restrictions on the mobility of women and contact with men. The Hindu women also observe the purdha but in a somewhat different way. Separation means a system of institutions exclusively for women such as separate schools or organizations. As a result of these culture patterns, women especially in the rural areas, have very low level of communication with men and find it difficult to acquire skills and seek employment outside the home. Thus, women’s world of knowledge has turned out to be narrower than men’s.

Religion has reinforced the above culture pattern. For example, the Quran, the holy book of Islam, clearly states :

“Enjoin believing women to turn their eyes away from temptation and to preserve chastity, to cover their adornments (except certain parts such as eyes, legs, etc.), to draw their veil over their bosoms and not to reveal their refinery” (Quran, Middle Sex, Penguin 1972, pp. 211-212).

The Hindu religion also discourages free mixing of men and women to prevent them from sexual temptation.

A recent study in Bangladesh revealed that 70 percent of rural women and 80 percent of urban men considered women as inferior to men and motherhood as the most desirable role for women (Jahan, 1975 ; pp. 1-32). Thus, in societies where women’s role is pre-determined by men, religion and age old traditions, it is difficult to make any cultural break-through to enable women to share social responsibility side by side with men.

Another aspect of the culture pattern found in Bangladesh, India and Pakistan is arranged marriage in which parents and elders play the key role ; and young girls and boys have little to say. This puts a barrier to a girl’s liberty to choose her spouse and to the timing of her marriage. At this weaker moment of her life, both social milieu and cultural conditions

reduce her virtually to a voiceless being on a matter that concerns her most. Not only in her own marriage, but also in other spheres of life within the family, she enjoys little freedom. Describing the classic customary Indian position towards women Ramila Tharpar (1964, p. 473) said :

“A woman should never be independent ; her father has authority over childhood ; her husband has authority over the youth ; and in old age, her son has authority over her”

After a careful review of nuptiality patterns and female status, Dauza and Baldwin (1977 ; p. 53) Opine that above observation equally applies to most of the Bangladeshi women.

Although equality of opportunity and no discrimination on account of sex have been envisaged in various constitutions to protect and safeguard women's interests, actually enjoying these constitutional privileges, however, depends largely upon the social milieu and cultural conditions in which women find themselves. Women seem to have accepted this difference in privileges and rights with little protest which seems to be in accord with old age tradition. Socialisation from infancy to conform to the traditional role of a patriarchal system and reinforcement by the religious teachings is perhaps a part of the explanation.

The laws of inheritance are also not favourable to women. The Hindu law of inheritance does not recognize the daughter's right to inherit parental property nor does the marriage law give women the right to divorce. The Muslim law, however, recognizes the daughter's right to inherit parental property, but the share of a daughter is less than that of a son. Born out of the same parents, equality is denied right from birth. As women grow up, they start to realize their position in the parent's house and see this reality for the rest of their lives.

Age difference at marriage is another accepted norm in the South East Asian culture. A bridegroom shall have to be several years older than his bride. This age-difference ranges

usually from 5-15 years. And, to assume virginity, most rural parents tend to give their daughters in marriage between 13-16 years of age. As the girl's age exceeds 16 years, her marriage prospects begin to diminish. Though such a culture-pattern reduces the chance of pre-marital sex, it provides scope for a prolonged marital life resulting in high marital fertility.

Several authors have suggested that the age-difference between spouses is a clear indicator of the status of women, especially where it is common for women to marry men who are younger than themselves (Safilios-Rothschild, 1972 ; Presser, 1975). Higher age gives the husband a considerable edge in status, experience and power. The situation reverses when women's economic emancipation increases. In Germany and few other industrialized countries, a woman tends to marry a man either almost equal in age or slightly younger or older ; Generally they do not think of marrying one who is 10-15 years older than they as in the preindustrialised societies.

Economic Factors

In most of the developing countries, the majority of the population are poor in absolute terms. These are the people who are most affected by poverty and large family size. Being depressed by economic hardships, and unable to bear the burden of a family, poor parents take the earliest opportunity to arrange a marriage for their daughters. Some parents for the same reason become so impatient that they hardly care about the social and family status of the bridegroom. Also, being aware of the fact that their daughters are more consumers than producers and economically less productive than their sons, they are unwilling to invest any more in them. This appears to be another explanation for early marriage in low income families.

In the rural areas of the least developed countries, very few options are available for women for better prospects of their future. Even in work like typing, record keeping, shop-keeping and light industries, including garment making, about

75-80 percent of the employees are men in many muslim societies, especially Pakistan and Bangladesh. Their replacement by females in these countries would require a minimum level of education and functional skills in appropriate technology. For want of opportunities, women have little option for working outside the home. Whatever avenues exist are also rudimentary and often fraught with the problems of lack of investment, instructions and marketing facilities. Thus, lack of vocational training and income opportunities outside the home make them always home-bound and provide little scope for spatial mobility. In the developed as well as in some of the rapidly developing countries like Taiwan and Korea, women who have education and skills compete with men and accept separation for the sake of economic prospects. Unmarried girls separate themselves from their parents; and as a result, they delay the process of marriage. The married women also sometimes separate them from their spouses for the sake of employment.

In the developing countries most of the policy makers are men who tend to pursue consciously or unconsciously, policies favouring those shouting on the streets of their capital for employment or bread, and who are in most cases men. These sex-biased policy makers believe that in the face of serious resource-constraints, it is difficult to divert additional resources for generating income opportunities for women, while more resources are needed to tackle the menace of unemployment and underemployment for men.

Another argument is that female employment would create a vacuum in the family where her presence is needed most to look after domestic work, though no monetary value is ascribed to such work. Under such circumstances, social programmes for income earning opportunities through employment, self-employment, cottage industries, and small-scale cash cropping for women are not yet matters of priority in many societies.

If the above situation is viewed with regard to the fertility context, one finds more concern for tackling the population problem

through family planning programmes, rather than simultaneously pursuing policies and programmes which may help faster achievement of demographic goals as well as improvement in women's current state of affairs. Family Planning programmes may be the vehicles for providing services and supplies, but they cannot be the surrogate for social change nor do they necessarily create contraceptive motivation. Since faster progress towards societal fertility is not likely to occur in the absence of changes in the roles of women, population programmes should include attention to such changes (Germain, 1975; p. 194).

While discussing women, demography and development, Halen Ware (1981, p. 24) refers to a three-stage evolution of the relationship between the three elements. In her view, women were contributory factor to the subsistence economy in simple hunter-gatherer and horticultural societies. With the introduction of plough agriculture, women's contribution to income is visible and marginally less than men's and their confinement to the domestic sphere is matched by a decline in their status. Finally, with industrialisation, in the long run, women re-emerge out of the domestic sphere and make their contribution. Significantly, women's fertility is the highest in the middle stage and that their status relative to men is at its lowest. In earlier hunter-gatherer and horticultural stage, they limit overall family size. It is only in the middle stage of plough agriculture, women are largely defined by the demographic fact of being mothers.

In fact, Socio-cultural and economic factors vary widely across the developing countries, but those discussed above are generally believed to be impeding the process of women's upward social mobility and declining fertility. Now, the key policy question is whether the existing social policies can be redesigned to alter the above social, economic and cultural conditions to enhance women's status by providing them a greater role in socio-economic development. It is expected that a shift in emphasis on women's development may have an impact on fertility.

In the foregoing discussion, the problem identified is that in the less-developed countries, high fertility seems to co-exist with women's lack of employment, early marriage, social barriers to free mobility, and lack of both education and access to child health and family planning services. Lack of contextual knowledge in developing a comprehensive social policy to alter the above constraining situation which is impeding the process of social and economic development poses a serious obstacle to women's social change.

Policy Implications

Any proposal to solve the problem discussed above has obvious policy implications. Several sectors need to work together. For example, for generating income opportunities, the industries sector may set up small scale industries, and institutes for teaching various trade skills to help women to get employment; the population and health sector can provide health and family planning facilities to tackle the problem of mortality and fertility. The cooperatives and social welfare sectors may promote social cohesiveness by way of setting women's cooperatives, mothers' centres and organizing female institutions and associations both at local and national level; while the education sector may give more attention to promote female education. All these call for redesigning existing social policies and programmes to take into account women's interest not merely from the point of view of 'Welfare', but as a duty to ensure 'Human Rights'.

CHAPTER III

Demographic Senario, Reproductive Behaviour and Female Status

Bangladesh being the setting of this study, a discussion of its demographic situation seems to be in order for a meaningful understanding of the problems identified in the previous chapter. Such a discussion may also provide clues to our understanding of why the Government of Bangladesh has declared population as the nation's number one problem.

Bangladesh ranks as the world's eighth, and Asia's fifth most populous country. Its population, together with China, India, Indonesia and Pakistan, consisted of 2218 million out of Asia's 2730 million population (Population Reference Bureau, 1983) representing about 48 percent of the world's population. Because of a large population under the age of 15 years, the major potential for future population growth in Asia, nay the world, clearly lies in these five countries more than all other developing countries combined. Again, of these five countries, the case of Bangladesh appears to be the most precarious and explosive because of its high density, imbalance in age structure, high fertility and declining mortality and poor resource base.

The area now comprising Bangladesh occupies about 55,600 square miles. It had a population of only 10 million in 1690 which grew upto 29.92 million in 1901, followed by a further increase upto 40.7 million in 1941 and 41.9 million in 1951 (Monowar and Mabud, 1980, p.12). The population of Bangladesh, according to the 1981 census was 89.9 million, showing that the population was more than double in thirty years; the previous doubling took nearly ninety years, and the doubling before that about two centuries.

What is disturbing for the nation, apart from the population size, is the tremendous growth potential built into the age structure as a consequence of past high fertility. About 39 million population are at present under age 15 (1981 census) which is likely to rise upto 45 million or 44% of the total population in 1990, even under the planned substantial reduction in fertility over the rest of the century. Again, women of child bearing age group will increase from 16 to 22 million during the same period. With such a growth of female population, it will be difficult to reduce natural increase even if substantial reduction of fertility is achieved.

Available evidences indicate that the crude birth rate and the crude death rate from 1901 to 1950 were respectively in the range of 48-63 and 25-45 per 1000 population. During 1951-73, although the birth rate was fluctuating between 47-50, the death rate declined to 17 per 1000 population. Based on several recent studies, Bangladesh Planning Commission has estimated the crude birth rate at 42.1 and the crude death rate at 16 per 1000 with a rate of natural increase of 2.6 percent in 1981. With recent rising age at marriage and contraceptive prevalence rate the rate of natural increase is presently estimated to be 2.4%. If this rate continues, Bangladesh's population will be twice its presents size of 96 million by 2013 A. D., doubling its present density of 1726 persons per square mile, one of the highest in the world.

The Bangladesh Planning Commission (1984) made three population projections based on three assumptions—drastic, substantial and moderate decline in fertility. These three projections show the estimated population to be 117, 128 and 132 million respectively by year 2000. Apart from a further increase in population density to the extent of 2280 persons per sq. mile under the assumption of substantial decline in fertility which may be difficult to materialise unless sufficient social and programmatic efforts are undertaken, the Government foresees several adverse consequences.

Socio-Economic Consequence

The demographic facts make it clear that Bangladesh shall have to bear the burden of a relatively large population unmatched with its resources, in the years ahead. It is likely to have 31 million school age population of 5-14 years of age by the turn of the century, even if the fertility level is reduced to reach NRR one by the year 2000, as against the current 24m. The rate of unemployment (30%) is likely to increase. Between now and the year 2000, about 15 million persons will be added to the labour force aggravating further the existing unfavorable labour market. Already population growth has reduced land-man ratio to 0.29 acres in 1981 from the 1974 level of 0.34 acres. With the increase in population, the land-man ratio will be further attenuated. The percentage of landless population which is now somewhere between 50-54%, will increase further.

The recent population estimate of the Planning Commission (1984) based on the fertility assumption of NRR=1 by 2000 A. D., shows still 128 million adding 32 million more people to the existing population. Such a rapid increase over a short span of the next decade and a half has created serious concern for the development planners. In the Bangladesh's context poverty, income inequality and population growth are inter-linked. Estimates have shown that if population continues to grow at the current level of 2.44%, GDP would require to grow at the rate of 11.5 percent per annum during the remainder of this century to reach the threshold per capita income level of US \$ 700 by 2000 A. D. Alternatively, if G. D. P. grows only at the rate of 4.3 percent, as it has been the case since 1975-76, this level of income cannot be achieved even within the next hundred years. The generation of adequate resources for investment to achieve a growth rate of 11.5% per annum is a herculean task for the country faced with serious internal resources constraints and where nearly 70-80% of the development budget is financed out of external assistance. The

grim economic consequences of rapid population growth as will be reflected in a further aggravation of illiteracy, income inequality and unemployment etc. over the rest of century leave the Government with no other choice but to immediately tackle the problem with all seriousness and resources at its command.

We have noted that a large proportion of Bangladesh's population is young (2). It has higher levels of fertility and mortality than China, India and Indonesia (3). Bangladesh has a very high density and low per capita land base. Its per capita income, rate of urbanization and natural resources base are the lowest in this region (4). Taking all these into account, doubts were expressed whether present land space of Bangladesh could comfortably support anything near twice its present population. It was stated that (5) :

"No civilized measure is too drastic to keep the population of Bangladesh on the smaller side of 150 million for sheer ecological viability of the nation. For this, the nation has to be mobilized and early."

The key strategy adopted by Bangladesh and some less development countries for fertility control is to provide contraceptive services and motivation through a family planning programme without looking into the factors moulding reproductive behaviour at the household level. As a result, in spite of two decades of programmatic efforts for fertility decline Bangladesh has made a very little progress.

(1) The Second Five Year Plan, 1980-85, Population Chapter, pp. 1-4.

(2) Population under 15 years in Bangladesh is 45 percent according to 1981 census ; whereas, comparable figures for China, India and Indonesia are in the range of 38-43 percent.

(3) During 1970-75, CBR per 1000. Population in China was 26; India 38.6; Indonesia 41.5; and in Bangladesh 42 as shown in the Table-IV, P. 22, Populi, Vol. 8, No. 3, 1981. In 1984, CBR in (population Reference Bureau 1984) China, India, and Indonesia was respectively 21, 38 and 34 per 1000 population.

In the early sixties, it was hypothesised that contraceptive service and motivation programmes would arouse women's interest in contraceptive practice which would eventually result in a fertility decline. Although the family planning programme in Bangladesh was started in 1960, and more vigorously in 1965, the 1969 national impact survey showed (6) three percent contraceptive prevalence rate and nine percent ever users. Seven years later, the Bangladesh Fertility Survey (1976) showed only nine percent of eligible couples as continuous users (7). Despite a fourfold budgetary increase in programme inputs of clinics, doctors, paramedics and motivators since 1974-75, the contraceptive prevalence Survey (1981) found only 18.5% eligible women practicing contraceptives (8) ; and the 1983 contraceptive prevalence survey reported 21.7% eligible couple using contraceptives. Although there has been a gradual increase in contraceptive users, the pace of progress over the last two decades has been rather slow. Countries like Korea and Taiwan, where Family Planning Programmes were introduced about the same time have enlisted at least 55-65 percent eligible women as continuous users (9). It is generally believed that Bangladesh may take many years to come to their level unless several supporting measures are simultaneously pursued vigorously.

(4) Per capital income is \$ 156 according to Bangladesh Planning Commission in 1984. Only 10 percent people live in urban area, according to 1981 census report, Natural resource is only two Percent of GDP, Statistical Bulletin, 1975.

(5) The First Five Year Plan, 1973-78, p.538, Bangladesh Planning Commission, 1973.

(6) Population Control and Family Planning Division of the Government of Bangladesh, 1981.

(7) Women who are married and in reproductive age 15-44 years.

(8) See Appendix A for a general view of the Family Planning Programme in Bangladesh.

(9) Contraceptive prevalence rate is 55.8 in South Korea, and 64% in Taiwan. World Data Sheet, Population Reference Bureau, 1981.

In spite of the limitations of programmatic efforts to increase the prevalence rate, one school of thought believed (Ravenholt and Chao, 1974, p.223), that a sharp fertility decline would be made possible by saturated contraceptive distribution through nationwide family planning programme. Testing this hypothesis at Matlab—a project under the International Center for Diarrhoeal Disease Research in Bangladesh (ICDDR,B) Phillips et al., (1981, p.1) found .

“Contraceptive distribution had an impact in its first year and no effect subsequently. The initial impact of the comprehensive health care approach was, at least, double the initial impact of the contraceptive distribution approach. Moreover, effects of the second study were sustained overtime.”

The above findings suggest that saturated contraceptive distribution does not have any impact upon the initial acceptors and that it cannot, therefore, ensure faster decline in fertility through contraceptive distribution programme alone. One limitation of this approach is that it relies heavily upon programme inputs like contraceptives and manpower rather than taking into account the effects of the “social milieu” in understanding human reproductive behaviour. Advancing this idea, Hauser (1973 ; p.307) argues :

“The key sociological perspective that the person’s attitude, values, and behaviours are a function of the social milieu in which he is an integral element and which he functions must be taken into account both in research designed to understand reproductive behaviour and in programmes designed to influence it”.

Several empirical studies conducted in Bangladesh and elsewhere testify that the sociological perspective is important to understand, at least, the major determinants of fertility. For example, in one recent micro study at Chargopalpur in Bangladesh, Mead Cain (1978 p.426) has identified unconstrained reproduc-

tive behaviour as a result of household benefits from children’s contribution to household production. He observed (p. 437) that :

“Children mitigate the pervasive and substantial economic risks that confront households even apparently divergent. Constituent interests within the household including those of children are served by unconstrained fertility.”

Cain’s findings reveal that children are powerful incentives for high fertility and that economic class differential accounts for adult mortality, high probability of young age widowhood in poor households (p. 434) and sexual division of labour limiting women to non-productive employment (p. 426). Cain did not, however, suggest any alternative to the solution of unconstrained fertility in Bangladesh except sounding a voice of pessimism.

In pre-industrial societies like Bangladesh, another reason for the high fertility trend probably lies in the institutional support for sufficient reproduction to survive (Davis and Blake, 1956). According to this theory, early age at marriage, non-use of contraception and high proportion of ever-married women have high fertility value. Several studies including Bangladesh Fertility Survey (1976) lend support to this theory.

The child survival theory based on a high correlation between high infant mortality and fertility implies that parents in peasant societies tend to have more births in order to ensure that a few will survive. In countries with varying socio-economic conditions, such as Bangladesh (1951-61) and the Philippines (1968), both individual and group data show a positive and statistically significant relationship between child mortality and subsequent fertility (World Bank, 1974). Wyon and Gordon (1967) have somewhat similar observation in the East Punjab where fertility increased among women who had more infant deaths. These findings lend support to the hypothesis that high infant mortality (10) and fertility may be correlated in rural Bangladesh.

Besides, the practice of contraceptive, there are two other factors that can significantly reduce fertility. These are the timing of marriage and breastfeeding. The countries where age at marriage is high and women are habituated to prolonged breastfeeding, fertility sharply reduces such as Srilanka. Breastfeeding has double advantages in the sense that it reduces fertility by suppressing fecundity i. e. actual power of reproduction, as well as infant mortality. The countries where girl's timing of marriage is high, but practice of breastfeeding is low, fertility reduction process is rather slow such as India. But the countries where breastfeeding is long such as Bangladesh (25-29 months on average), it can offset the effect of early marriage, provided contraceptive prevalence rate is significantly high. In Bangladesh, both early marriage timing and low rate of contraceptive practice are offsetting the effects of breastfeeding and thereby slowing the process of fertility decline. Fortunately, Bangladeshi women practice breastfeeding. Otherwise, fertility would have been as high as seven births per woman. Some analytical frame-work for our understanding about the relative impact of each of the above factors is provided in the 1984 World Development Report (p. 113) :

"Of the reduction in total fertility of about 5 children over the whole period, delay in marriage contributes a reduction of about 1.4 ; reduced breastfeeding works in the opposite direction, raising fertility by about 1.5 children. Increase use of contraceptive contributes the most, about 4.5 and increased abortion contributes about 0.5".

Although several analysts have found a high negative correlation between education and fertility in other cultures as noted in the previous chapter, some studies in Bangladesh show surprisingly no such relationship. Stoeckel and Chowdhury's study (1969) bear out this fact. Analysing Bangladesh fertility survey data by education and age-group, Sawon Hong (1980, p. 25) has observed that women with primary education have high fertility and that this difference persists in women of 25-34 years. Her

analysis also shows similar fertility differentials in the case of husband's educational level.

In a traditional society like Bangladesh, simple reading and writing including religious education that is customarily provided at home to qualify one as literate or even education upto primary level may have little appeal towards creating awareness of consequences of child-bearing which may partly explain the reason for little impact of primary education on fertility. Although some negative correlation is observed between higher education of women and fertility, percentage of such women is negligible in Bangladesh having, therefore, no impact upon societal fertility.

In fact, the relationship between, education and fertility has not always been very clear in different countries. For example, Morgan in his study on Yoruban modernization and fertility in Nigeria, found that most women's fertility is related to education and social status. Only those women having education up to university level have somewhat significantly lower fertility. He has related higher fertility to the people's insecurity during the first stage of development. Only the women with high level of education who feel secure in the modern world tend to have fewer children.

The world Bank staff report (1974, p. 51) shows that parents change their aspirations for children when they see the prospects for acquiring economic and social status through education. Perception of these possibilities is likely to reflect the degree of economic progress that is actually visible at the family level. Because of several reasons, including high illiteracy (76 percent) and low wages for educated employees of different vocations, perhaps parents in rural Bangladesh are yet to see the benefits of acquiring status through education. Coupled with this is probably another emerging factor which is a relatively low wage for the petty white collar employees (11) in the urban sector compared to those of the farm workers and other wage earners.

(10) Infant mortality rate was 129 per 1000 live births in Bangladesh according to 1981 census.

Another observation by M. R. Khan (1981, p. 30) is that the poor and the labouring class have lower fertility than subsistent, middle and rich farmer; and the landrich non-labouring non-agricultural class has higher fertility than the average level (12). Within the farm population, fertility bears a bell-shaped relationship with the agricultural land ownership of the household heads. The subsistent, middle and rich farmers have a tendency to have more children as they see their benefits for farming and other productive works.

Most of the population studies in Bangladesh (BFS, 1975; M. R. Khan 1981; Mabud et al., 1981; Stoeckel and Chowdhury 1969) show that preference of sons to daughters is a commonly held value at the household level in rural areas.

The urban sector is also not expanding fast enough to absorb the increasing number of rural youths as one can see under the current slow pace of urbanization in Bangladesh (13).

If low level of education of women, son preferences, high infant mortality, slow pace of urbanization, household support for high fertility, a negative correlation between higher female education and fertility and other factors are taken into account, we find that Bangladesh, like rural Nigeria, appears to be passing through a very critical stage of her demographic transition. (14)

It is generally believed that unless the rural people, at least, come closer to the threshold level (15), any significant change in household structure and reproductive behaviour may not occur soon in Bangladesh. The foregoing analysis clearly presents a picture of major fertility determinants that currently regulate reproductive behaviour in rural Bangladesh. In the backdrop of this

(11) A white collar clerical employee may earn US 35-40 per month, whereas, an agricultural wage earner may get US 40-45 per month.

(12) Average total fertility rate was 6.2 in 1979.

(13) Ten percent people live in urban area, Bangladesh Census, 1981.

situation, one is inclined to suggest that population policy should be designed in sociological perspective to change the household outlook on reproduction by taking into account programme limitations and current determinants of fertility as well as the need for creating avenues for those who are potential sources of this reproduction.

Development distributivists who have won a debate in population conference at Bucharest (1974) argue that improvement in socio-economic conditions shall lead to lower birth rate as observed in the "demographic transition" experienced in the Western countries. They view that social practice in the form of better health care, better income distribution, better status of women, old age security etc, should constitute social policies for population control. Supporting this view, Arthur Dyck (1977, p. 44) says that each of these is itself advantageous for those who are now in disadvantageous position. Each one of them is also potentially a population influencing policy in the direction of lowering birth rate and has its own moral justification. He further argues that:

"Having a small family, for example, makes sense, if one can be relatively certain that one's children will have opportunities for health care, education and future employment"

This argument seems to be cogent and makes sense in the current social realities. According to him, gross-inequalities with respect to one's share in a society's goods or one's opportunity to change a disadvantageous position can violate the principles

(14) High birth rate and falling death rate. We consider that crude birth rate of 40 and above, and crude death rate of 17 and above per 1000 population are high. High birth rate and falling death rate is the second stage of demographic transition.

(15) The threshold hypothesis implies that fertility begins to decline only when society comes to certain level of female literacy, per capita income, urbanization of 30-35 percent, energy consumption, etc.

of distributive justice. It can even prompt the people to risk life (1972, p. 621). A social policy to be regarded as ethical must, at least, fulfill three criteria : freedom, justice and security/survival (Daniel Callahan, 1971, pp. 8-10). Judged by these criteria, women in some cultures, for instance, in Bangladesh do not enjoy the same freedom and justice in terms of equality of opportunities to enjoy society's goods and services and same chance of survival as do men. It may be noted that the women, particularly the poorer section, are constantly vulnerable to insecurity and inequality because of permeability of the family and social settings in which they are born. In such society, by dint of birth of a son, a woman acquires better status in the household. Under such circumstances, son preference is obvious.

In mid-seventies, Micheel Teitelbaum has come out with a new consensus that population policies should have both family planning programme and measures for socio-economic development (1974, pp. 742-60). This seems to be a reasonable policy option for Bangladesh which is confronting both problems of rapid population growth on its limited land space and socio-economic maladies. It is left with no choice, but to simultaneously pursue population planning where the bulk of its population are living. In accordance with this idea, Bangladesh government has established several pilot programmes for women, such as women's co-operatives, mothers' clubs and women's vocational programme in the villages along with family planning programme. Each of these programmes provides scope for women to organize themselves into a cohesive social group ; learn skills in small scale cottage activities and production works to enable them to contribute to the family consumption and earn a modest income ; avail themselves of family planning facilities and maternal and child Health care lessons ; motivate fellow women in the household and communities for family planning raise their status in the family, and above all, gain power in the family decision-making.

It is not argued here that these programmes are the best means to achieve the above objectives. It is simply indicated here that each of these programmes has immense potentiality for achieving the objectives of population control and a modest improvement in the socio-economic conditions of rural women who are admittedly at present in disadvantageous situation. Achieving the above objectives through such programmes which have the substance of what Roger Revelle calls (1971; p. 70), both population-influencing and responsive-policies (16) is highly desirable. A great deal of success of such programmes, however, depends upon how sincerely and assiduously these have been pursued by those who are entrusted with implementation.

WOMEN'S STATUS

In this section, we assess the status of women in Bangladesh in the light of the theoretical understanding provided by several noted sociologists. Given the complexities in assessing status in a traditional society, we will still look for some indicators to measure their status at the household level.

As we have noted, distributive justice is one of the ways to reduce the chance of dominance of one social or interest group over the other and it provides opportunities of the disadvantaged social groups for upward social mobility and acquiring new status. In discussing the status of women in Bangladesh, we find that Bangladeshi society is overwhelmingly dominated by men. Here social milieu created in historical process denies equal opportunities and life chances to women.

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- (16) Population responsive policy ameliorates or overcomes the effects of unprecedented increase in population size and density, high birth rate and high growth rate ; and population influencing policies will bring about a reduction in fertility, mortality and in growth rates or will beneficially influence internal migration. Policies for employment, food supply, urbanization and resource development are in the first category. Family Planning programme to reduce fertility, health and nutrition programme to reduce mortality and transportation and industrial planning to influence internal migration are in the second.

Consequently, women are put to a serious disadvantage to acquire proper status relative to men. This may have given rise to a situation which turns to be complex and tricky and in which women's status are customarily found to be with their fathers or husbands or both. As they are typical appendages to males in a traditional society like Bangladesh, their social status is determined on ascribed rather than achievement criteria (Parsons 1940), or on the functional importance (Davis and Moore 1945). The non-earning domestic works which mostly preoccupy women do not give prestige or raise their position in the status hierarchy, although the work they do at home is important. Vexed at this situation Joan Acker (1973) has rightly asked:

"If women are to be seen as persons rather than as appendages to males, how do we define their social status, particularly if they are not working for pay and cannot be categorized on the basis of their own occupation and income"?

According to Marxist analysis, social class and status (Marx-Engels Reader, pp.29-35) differentiation lies in the difference of economic condition. Clearly, difference in income and possession and control of assets in the family may have resulted in the difference in status between men and women in traditional societies. Means of sustenance are controlled by men. This may have made women subservient to them in the status hierarchy within the family. Despite enormous intrafamilial relationship between the spouses, differences in status, though subtle indeed, appear to exist owing to their income differences; and in consequence thereof, it may also result in the difference in power of making family-decisions. In fact, in Marxist analysis, status and power are measured by economic considerations.

Max Weber went beyond Marx. In discussing the role and status of women as societal beings, we need to refer to Weber's trilogy—class status and power. In traditional societies like Bangladesh, social class differences exist owing to differences

in matters sharing the same life chances. According to Weber, property or lack of property is the basic feature determining one's life chances. Thus, it is economic interest that creates social class differences. If we study reproductive behaviour by social groups, we may find differential fertility—women in low income group have the highest of all. It is generally acknowledged that poor class women do not have the same life chances as upper class women nor in the same household, do daughters have the same life chances as sons as noted in the previous chapter. It is apparent that as far as women are concerned, differential sharing of life chances prevail in traditional societies like Bangladesh not only between the classes, but also within the same class and even within the same household structure.

Another dimension in understanding women's status is the Weberian concept of power which is diffused throughout social structure (Abrahamson et al., 1979: p. 52). The various interest groups organise themselves into parties or communities and wield power to exert their rights or to fulfill their hopes and aspirations or collective motives. But the opportunity to wield such power by women through cohesive organizations is virtually non-existent in rural Bangladesh. At the household level, particularly for the poor women, power is more limited because of their helplessness and life-long dependency on the husband and/or sons after the husband's death. Within this general frame of rural situation, we may delineate two types of power corresponding to Weberian concerns with the social and economic factors in the household structure. The first type of power is derived from the traditional authority that is based on the acceptance of the rule or obedience to husbands or other male members in the family. The second type of power is, of course, derived entirely from economic interest. Both these reasons provide sufficient clues to our understanding of why rural women in Bangladesh and elsewhere enjoy less power within the household than do men.

There are, however, a few options to pursue upward status. These are education, occupation and marriage. Even sons and daughters of low status families may have new status by acquiring higher education and better employment which raise their prestige in the eyes of the local community. As a result of acquiring new status viz education and employment or other success in the competitive market, the status can be consolidated or even promoted further through inter class matrimonial alliance, particularly during the society's transition from pre-modern to modern.

Evidence to support this is very limited. Our observation in rural Bangladesh bears this out. Technology transfer for social change (Park 1935) to the less developed countries provide scope for acquiring new ideas and skills. It is hypothesized that as technological advances take place women in the less developed countries may raise their status by acquiring new knowledge and skills, initially at the household level, if such skills enable them to earn even a modest income. This study is intended to test this hypothesis.

Relevant to our discussion of the status of women and their reproductive behaviour are the various roles which rural women in Bangladesh usually play. The rural women's role that are quite apparent at the household level are those of a mother, sister, wife, daughter-in-law of husband's parents, sister-in-law of husband's brother and sisters and a neighbour. All these roles regulate her conduct and customarily exert lot of pressure upon her time, energy and household resources. Under such circumstances, an obliging rural woman has to remain confined to her house for discharging her obligations to all these immediate kith and kin who also discharge, in turn, reciprocal duties to her in the form of social and economic support and even extra care at the time of her illness as well as free delivery and child care services, especially from the mother-in-law and elderly neighbours (17).

For lack of work outside home, a typical rural woman is devoted to perform her existing roles which do not conflict with her child bearing functions. This may be why women in rural households have high fertility compared to women in urban nuclear households where their roles are basically those of a mother and wife. Urban life is so rude and self-centered that they are even denied free delivery and child care services. In this situation, they have to be careful about her next pregnancy. If they are educated and have jobs outside the home, then they are double careful. Other things being equal, even these contrasting roles probably create an environment which moulds the reproductive behaviour in a different manner.

Various theories have been pursued to explain reproductive behaviour. One of the best known and most vigorously pursued is the role conflict theory which postulates that in order to have reduced fertility, a woman's work must directly conflict with her role of a mother. Fertility is not likely to decrease where supportive facilities are conducive to child care, and where cultural norms dictate that a woman should be the mother of a large family (Boserup, 1973).

Recent studies go beyond role conflict theory to argue that the employment fertility relationship depends. On such factors associated with modernization as the wife's motivation for working, her approval of non-domestic roles for woman, the division of labour and decision-making in the family, and the level and type of education she has received (Blake 1965; Easterlin, 1974).

In fact, the status and role of women have tremendous influence upon their reproductive behaviour. Their experience, aspirations and range of options available to them play also a central role in deciding their productive behaviour (Chaudhury and Ahmed, 1980,

(17) Evaluation Report of Population Program, 1975-80, p 8, Bangladesh Planning Commission, 1980.

p.110). If societal norms and values give more importance to child bearing functions than her role as an educated member of a family, a working woman or social worker, then her reproductive behaviour is likely to be moulded accordingly.

From the experiences of developed countries, it is hypothesized that high fertility motive in a less developed country like Bangladesh can be manipulated by such variables as education, occupation and income which have the powerful elements to erode the existing large family norm and raise the status of rural women by providing roles alternative to child bearing and also diverting their energies for work outside home. Of all the variables referred to above, this author feels that education is the most important and crucial one as it broadens one's horizon and provides scope for finding appropriate occupation and acquiring better status on the occupational ladder. Again, potential source of income is also education. Because of existing educational differences in rural Bangladesh, a woman's choice of occupation and source of income are limited. As a result, roles outside home are virtually non-existent. The educated women who live in urban area and possibly have role outside home have lower fertility than the uneducated urban woman (Chaudhury, 1974, p. 128).

Even in the rural area, one major study has found that women with schooling above primary have shown inverse relationship with fertility (BFS, 1976) (18). But the bulk of rural women are illiterate; and of those who are literate, a majority have primary education which has little impact upon their reproductive behaviour which we have noted earlier. Findings of a research in rural Bangladesh show that women with primary education who have worked outside home have lower fertility than those who have schooling upto primary level and no work outside home (Mabud et. al., 1977).

If we shift our attention from education and employment to mortality pattern and nutritional intake, we see a great differential pattern between men and women. In some less developed countries such as Burma, Bangladesh, India, Sri Lanka and Thailand, female mortality at ages 1-4 exceeds male mortality. Citing Bangladesh

as a case, D'Souza and Chen (1979) reported a higher female mortality rate of 16.7 per 1000 than male mortality rate of 16 per 1000. Their report also shows a higher female death rate at ages 1-11 months than for males of that age-group; This mortality pattern has not changed yet. Such a differential female mortality pattern at this budding age may be attributed to extra parental care in terms of treatment, and feeding patterns in favour of male child.

In rural Bangladesh, women do not take food before their male members; and best chunk of food is provided to males, especially the bread earners; and whatever is left is shared by the females. In poor household, often the females are half fed or underfed. Women have been traditionally adhering to this practice and thus, they become vulnerable to malnutrition even to the extent of prompting the risk of life. Since malnourished mothers cannot prolong breastfeeding, they cannot help reduce her own fertility as much as the nutrient mothers. If the rural women continue to remain malnourished owing to shortage of food, the chance of achieving some degree of fertility reduction through prolonged breastfeeding will diminish. Besides, repeated short interval pregnancies deplete a malnourished mother of calcium and iron-stores. According to some investigator, psychological reactions also affect the developing fetus. Acute and chronic illness that occur during pregnancy affect maternal and perinatal mortality. In pre-industrial countries like Bangladesh, anemia and malnutrition increase the pregnancy related complications leading to maternal morbidity and mortality. This rate of health status is aggravated by the absence of antisepsis, anti-biotics, modern hospitalization and contraceptive practice. Thus, women's status, if judged by the criteria of nutritional intake, morbidity and mortality pattern, is more precarious than men's in Bangladesh, especially in rural area. In fact, these are the women who enjoy less decision-making power in the family. A somewhat contrasting situation prevails in a small fraction of urban elitist families

where women have a few children (of which, one is, atleast, male) and high education and reasonably a good employment to contribute to household income.

As is evident from the foregoing discussion that in Bangladesh, the women's status in terms of education, employment and income as well as nutritional intake and mortality pattern is very low compared to men, it is no wonder why (19) fertility is so high. In such a country it is difficult to bring about any revolutionary change in reproductive behaviour. Notwithstanding the limiting factors, with a great optimism, several scholars and international organizations have suggested functional education in various vocations combined with family planning programme to create avenues for women to work outside and at the same time, to practicing family planning (Blake, 1965 ; Dixon, 1977 ; Germain, 1975 ; World Bank, 1974) to hasten the process of reproductive behaviour transformation.

Several countries including Bangladesh have already established women's co-operatives, vocational training programme and Korean type mother's clubs to encourage women to participate in income generating activities involving elementary technology.

Germain (1975) suggests that some country specific special studies are necessary to understand the dynamics of women's status and role and their bearing upon reproductive behaviour. Studies conducted in other countries may heighten our understanding about their situation, but cannot provide definite clues to formulating appropriate social policy for women and their social development in Bangladesh. Two studies by Chaudhury (20) in 1974 and 1977 provide some information on female work status and fertility. But the scope of using his data is very limited. Because, the first study was in the urban area and

(18) Bangladesh Fertility Survey. (1976).

(19) An unpublished document of population planning being in Bangladesh Planning Commission shows a TFR of 5.7 in 1984.

did not represent the rural women, the second study was based on female labour force participation and fertility by using aggregate 1974 census data.

Another study by Ahmedullah Miah (1977) which merely contains baseline indicators of vocationally trained women, also lacks in detailed analysis. All these studies were conducted at a time when action oriented vocational programme was not yet started. One major evaluative study of population programme, 1975-80, by the Bangladesh Planning Commission with which this author was actively associated, was also based on limited observations in the study area. The conclusions drawn about the efficacy of the programme were too early and also lack in precision and contextual knowledge. All these limitations of earlier studies suggest that further careful research into the area of women concerning their status, income, contraceptive and reproductive behaviour is worth undertaking. In fact, along this line, this study will be the first venture in Bangladesh to measure the success or failure of a women's programme that has actually provided trade skills and family planning knowledge to rural women to enable them to earn some income and to change their current outlook on contraceptive and reproductive behaviour.

(20) R. H. Choudhury was a senior Research Demographer, Bangladesh Institute of Development Studies, Dhaka.

CHAPTER IV

Methodology

Any human enquiry that is intended to have some contextual knowledge about any social problem must adhere to certain scientific procedures to draw a sample and collect data. It must have clearly defined concepts and variables as well as a set of testable hypotheses and an analytical plan to interpret the results. The present study has to undergo all these procedures in order to have some knowledge about the women's socio-economic and demographic changes through a government sponsored programme in rural Bangladesh. Keeping in mind the objectives and hypotheses, this study utilised the following five sets of data, namely :

- i) First follow-up data of the women who were trained (directly exposed) in vocational skills :
- ii) Retrospective data of these trained (directly exposed) women to reconstruct their baseline situation and to ascertain their status in the family in 1981 ;
- iii) First follow-up data of a sample of women (indirectly exposed) in the area where the vocational programme was introduced ;
- iv) First follow-up data of a sample of women (unexposed) of the area where no vocational programme was introduced ; and
- v) Bangladesh Fertility Survey Data (BFS, 1976) for comparison with programme and non-programme data.

The size of the sample in the first category was set at 1000 trained women. Actually, only 520 trained women were available for interview. These women formed the ultimate sample size. The same cohort formed the sample size in the second category also,

(41)

although 461 women were available for interview (2). The sample sizes in the third and fourth categories were 656 and 317 respectively.

In each case, a separate questionnaire was administered for data collection. A structured questionnaire, especially designed for the trained women was used. While one common questionnaire for both the programme-village (indirectly exposed) and non-programme-village (unexposed) women was used. According to the methodology developed for this study, three kinds of respondents were considered to be relevant. Such as the trained (directly exposed) women, the untrained programme (indirectly exposed) and non-programme (unexposed) women. Since detailed discussion of methodology is not strictly warranted here, suffice it to indicate that in each case, multi-stage sampling procedures were strictly followed in selecting the respondents.

It may be noted that no baseline data were collected when the women's vocational training programme was launched in 1976. As a result, it is difficult to measure the efficacy of the programme, at least, in terms of certain key indicators. It is also considered not worthwhile to conduct a retrospective survey in

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- (1) First follow-up data of the trained (directly exposed) women as well as the programme (indirectly exposed) and non-programme (unexposed) village women were collected by the External Evaluation Unit (EEU), Population Control Wing of the Bangladesh Planning Commission, Dhaka. Retrospective survey of the trained (directly exposed) women was conducted by this author in 1981 : and Bangladesh fertility survey (BFS 1976) for using as baseline data was conducted by the Ministry of Health and Population Control.
 - (2) Thus only 84.2% respondents in the retrospective survey were interviewed. The remaining 15.8% respondents could not be found. Some of them died, some left their parent's home after marriage and are now living with their husbands in other areas. Since 84.2% of the respondents were available for interview, we considered that it was not worthwhile to make additional efforts and investment to follow the missing surviving respondents.

the programme (indirectly exposed) and non-programme (unexpected) area to reconstruct the baseline situation for two reasons. First, the respondents in the programme and non-programme areas may suffer from recall lapse ; and information thus gathered may, therefore, not be reasonably accurate. Secondly, scarce resource was another limitation. Under these circumstances, there was no other option but to use the Bangladesh Fertility Survey data (BFS, 1976) which were collected about the same time the Women's vocational Training Programme was started. Moreover, the sample size of the BFS was pretty large and drawn randomly following multistage sampling procedures. The BFS is the best known nationally and internationally recognized study (3). Our study areas are almost like the BFS areas in socio-economic and demographic characteristics.

With regard to the trained women, a retrospective survey to ascertain the baseline situation was considered to be essential. It was presumed that our trained women would appear to be different in their socio-economic characteristics from the general female population of both programme and non-programme areas. Some of them have willingly volunteered themselves for acquiring trade skills without any persuasion by the Government. Since they are an identified interested group, and already given training, it is thought that they may not forget their own age of their children, their education and other matters concerning them and their family life in the short span of five years since their training. (4).

(3) Its rural sample size was 5,023 ever married women of the age 10-49 years, covering 100 villages and 4,436 rural households. The currently married women were 4,930.

(4) Moreover, the BFS (1976) data used for the baseline of the programme and non-programme areas may not typically represent them in view of their background. Hence, a retrospective survey in their case was considered to be appropriate. In order to overcome the difficulty posed by the one-group post test, authors like Suchman (P.94) and Cock and Campbell (p.97) recommend for such a retrospective survey to have, at least, some data for determining the level of comparison,

Foci and Units of Analysis

Our foci of interest in the study lie in the following :

- i) changes in the reproductive behaviour and socio-economic characteristics of those women who have been directly exposed to the programme ; and
- ii) differences in the contraceptive and reproductive behaviour between the programme-villages (villages with trained women) and non-programme villages (villages without trained women.)

Under the first category, our concern lies in the programme-contribution to raise the trained women's income and status in the family decision-making process. We want to examine whether the programme has contributed significantly to the level of family planning practice of the women who have been trained in different income-earning skills. Under the second category, our focus is to discern the between-village differences in reproductive behaviour and family planning practice as result of presence or absence of the trained women in the community.

The above focus suggests that we have two kinds of units of analysis, viz. the trained women and the untrained village women. The trained women are those who have been trained in trade skills under the programme. The untrained village women are those who live in programme and non-programme villages.

Definitions of Key Concepts

- 1) **Village** in Bangladesh means the lowest tier geopolitical unit consisting of a cluster of households. It is bound by common ties of its inhabitants. It has a definite name and a boundary. It is used for the purposes of civil administration and revenue collection.

- 2) **Programme** means the Women's Vocational Training Programme sponsored by the Ministry of Women's Affairs, Government of Bangladesh which provides training in both trade skills and family planning education to a selected group of rural women in eight programme upazilas.
- 3) **Trained Women** mean the women who have been trained under the above programme. They are directly exposed to the programme. They are also in their reproductive years 15-49.
- 4) **Untrained Village Women** mean those women of the programme and non-programme villages who are in the child bearing age 15-49, and who have been interviewed for this study and who have not received training under the programme defined in (2).
- 5) **Trade Skills** mean those skills which are generally taught in the training, such as sewing, handicrafts, poultry raising, embroidery, doll-making, etc.
- 6) **Family Planning Education** means education that is intended to enhance knowledge of the trained women for motivating fellow women in their villages to acquire knowledge and develop the habit of practicing contraceptives.
- 7) **Reproductive Behaviour** means a behaviour reflecting respondents' experience in having live births since their first marriage, i. e., children even born.
- 8) **Ever Married Women** refer to those women aged 15-49 years who have been married, at least, once.
- 9) **Ever Use of Contraceptives** refers to the use of any clinical or non-clinical method, at least, once during the reproductive span, 15-49 years.
- 10) **Ideal Number of Children** is defined as the number of children the respondent actually desires for a couple. We have asked the respondents, "How many children do you think a couple should have?"

- 11) **Attitude Towards Age at Marriage for Boys and Girls** is defined as the respondent's opinion about the age at marriage of boys and girls according to her own best judgement.
- 12) **Village Women** mean the women in common living both in the programme and non-programme villages of the study areas.
- 13) **Reproductive Years** is defined in this research as the age 15-49 years, because very few women give birth to a child in less than 15 years of age.
- 14) **Fertility** means the total number of live births the respondents have experienced in their reproductive years.
- 15) **Current Fertility** means live births occurred during the last 12 months preceeding the survey.
- 16) **KAP in Family Planning** means the knowledge, attitude and practice in family planning. The knowledge refers to the number of methods known and attitude refers to respondent's positive or negative indication about family planning. Practice refers to actual use of the contraceptives by the respondents.
- 17) **Aggregate Level of Contraceptive Use** refers to the level of ever use of contraceptives of all individual women of both programme and non-programme villages as well as the trained women.
- 18) **Fertility Norms** refer to the desired number of children of the trained women as well as the programme and non-programme village women.
- 19) **Programme-Villages** refer to the villages where trained women are living, also known as the treatment area or indirectly exposed area.

- 20) **Non-Programme Villages** are those where no trained women are living. They are also called the **control area** or **unexposed area**.
- 21) **Decision-Making** is measured by ascertaining the information of whether or not the trained women are consulted in seven personal and family related matters, e. g., their own marriage, a child's or brother's or sister's admission into school, a son's or daughter's/brother's or sister's marriage, visiting friends, taking loan, a son's circumcision, and the purchase of any big thing.
- 22) **Duration of Marriage** refers to the duration of first marriage.
- 23) **IDA Assisted Project** means a programme which is financed by the IDA or any other funding agency that finances the project under the IDA umbrella, e.g., the women's vocational programme which is financed by CIDA under the IDA credit agreement.
- 24) **Family Size** means the number of members in the household who live together and who share the same kitchen.

Identification of Variables

In this section, we will identify the variables that will be used in this study. A variable is defined as characteristics which can take on two or more categories (Nan Lin, p. 74). Among the variables of this study we shall see quite a number of categories. A respondent's response to a particular category will be regarded as an observation. In this study, we shall also find **nominal**, **ordinal** and **interval** scale variables which will be analysed under appropriate assumptions,

The study variables are those relating to individual's background, programme and outcome. Background variables are the respondents' socio-economic and demographic characteristics. The

programme variables are trade skills, family planning and child-care, and those of the outcome variables are income, KAP in family planning and knowledge about breast feeding, increasing status in respect of decision-making power, desired number of children, attitude towards family size and age at marriage and fertility.

Our dependent variables are income, decision making power, and contraceptive and reproductive and behaviour of the trained women. The independent variables are their characteristics and programme factors.

Analytical Techniques

Keeping in view both our foci and units of analyses, we have analysed our data concerning the trained and untrained women with **univariate**, **bivariate** and **multivariate** analytical techniques such as, multiple cross classifications, multiple regression, analysis of covariance and multiple classification analysis (MCA)s of the factors under appropriate assumptions.

We have used Brass technique (5) in appropriate cases for estimating total fertility rate, mean age and proportion of child loss among the trained women and village women by using follow-up data (1979) and compare the results to observe any variation between them.

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- (5) William Brass is a Professor of, Demography in London School of Hygiene and Preventive Medicine. His technique is useful in indirectly estimating the total fertility rate by taking the ratio P_i/F_i , where P_i is the mean number of live birth of last year per woman, and F_i is the number of ever-born children per woman. This ratio is required to be multiplied by a derived factor, K , in order to adjust for any misreporting which sometimes happen in the developing countries where vital registration system is virtually absent.

CHAPTER V

Study Population

In this chapter, we will describe the study population by which we mean both the trained and untrained women of the programme and non-programme area. We will also discuss their setting to provide a basis for a comparative study.

Included in the description are their background characteristics, vocational skills, child care, family planning, and reproductive behaviour. Data presented in this chapter show some variation among the key empirical variables between the base year (1976) and the follow-up year (1979).

Trained Women

HOUSEHOLD SIZE AND SEX RATIO

The average household size of the trained women was 5.1. The sex ratio was 1.04 of the trained women which is lower than the programme women and the national average of 1.08.

EDUCATION, MARITAL STATUS, RELIGION AND WORK STATUS

The educational level, marital status, religious affiliation and work status of the trained women have been examined. It was observed that there was some change in the status of these variables between 1976 and 1979 as one can see in Table 1. Data show that the percentage of divorced, separated, work besides the household tasks, and educational level above primary was increased considerably in 1979 as compared to 1976.

(49)

Table 1

The Trained Women's Educational Level, Marital Status, Religious Affiliations and Work Status in 1976 and 1979.

Background Characteristics	1976 N=461 %	1979 N=520 %
Educational Level		
Illiterate	48.6	47.6
Primary	38.4	28.4
Above Primary	13.0	24.0
Marital Status		
Unmarried	24.9	22.8
Married	52.2	49.3
Divorced	9.1	13.3
Separated	6.2	7.5
Widowed	7.6	7.1
Religious Affiliation		
Muslims	88	88
Non-Muslims	12	12
Work Status		
Work besides the Household	76	85

AGE AT MARRIAGE AND DURATION OF MARRIAGE

The mean age at first marriage and mean duration of the first marriage was ascertained for the trained women who were married. The findings revealed that their mean and median ages at first marriage were found to be 16 and 15 years respectively. Their median duration of first marriage was found to be 10 years in 1979.

ATTITUDE TOWARDS SOME SELECTED INDICATORS

We examined some attitudinal variables among our trained women at two points of time, i.e. 1976 and 1979. In both

the years, we posed the question: what do you think about the age at which both boys and girls should marry?" with regard to having a first child after marriage, our question was: "How many years after the first marriage do you think that a couple should have a first child?" Similarly, we asked our respondents about their attitude towards the number of children a couple should have. The results of these questions showed that their average ideal number of children was 3 in 1979 as compared to 4.2 in 1976; average gap between first marriage and first child was 3.9 years in 1979 as against 2.2 in 1976; and average age for girls' marriage was 18 for 1979 as compared to 16 for 1976.

During three years, the trained women seemed to have undergone considerable changes with regard to their attitudinal variables. One can reasonably believe that their exposure to vocational training and population education might have contributed towards these changes.

FAMILY PLANNING

Several family planning related questions were also asked to ascertain their attitude towards and knowledge in family planning as well as current use of contraceptive use. The attitude towards family planning was measured by the trained women's support: while knowledge is measured by their current understanding about family planning and the median number of contraceptives known to them. On examination of the data, it was found that in the base year (1976), at least, two methods were known to them as compared to five methods in the follow-up year (1979). The currently married women were asked about family planning practice to ascertain their use status. Data in Table 2 show that there was a substantial increase from 1976 to 1979 in the median number of contraceptives known, 4.7 up from the level of 2. The contraceptive prevalence rate also increased upto 31% in 1979 from the 1976 level of 26%. If we examine the current use of contraceptives by age of the currently married women, we find

that the highest proportion of current users (about 45%) is in the age group 25-39 years. The prevalence rate among the younger women having fewer children is lower than the higher group. Table 3 presents a picture of the age-specific use rate in 1979.

Table 2

Family Planning Related Variables in 1976 and 1979.

Attitude Towards Family Planning	1976 N=461	1979 N=520	Amount of Changes
Support	97.0%	98%	+1%
Family Planning Knowledge			
Use of Contraceptives to			
prevent Pregnancy	38%	65%	+27%
Birth Prevention by	6%	5%	-1%
Terminating Pregnancy			
Delaying Birth Through	22%	14%	-8%
Motivation, Restraint and Patience			
Others	15%	5%	-10%
Non-Response	23%	11%	-12%
Median Number of	2	5	+3
Contraceptive Known			
Use-Status of Contraceptive among the Currently Married Women	N=248	N=257	
Current Users	26%	31%	+5%

Table 3

Age-Specific Contraceptive Use Among the Currently Married Women, 1979.

Age Group	Percent Ever Use N=257	Percent Current Use N=257
15 — 19	30	19
20 — 24	36	23
25 — 29	67	45
30 — 34	70	50
35 — 39	69	50
40 — 44	50	20
45 — 49	27	9
Total	46	31

CHILD CARE

A few child care related matters discussed in this book are the trained women's attitude towards breastfeeding, duration of breastfeeding, and knowledge about breastfeeding. The purpose was to see their attitude and knowledge in child health related matters. One limitation was that no question was asked whether the currently married women were breastfeeding at the time of interview and, if so, for how long they had been doing so. For lack of this information, no correlation between breastfeeding and fertility could be estimated. Interesting data show some changes between the base year (1976) and the follow-up year (1979) as one can see in the table below:

Table 4

Trained Women's Attitude and Knowledge in a Few Child Care Related Variables, 1976 and 1979

	1976 N=461	1979 N=520	Amount of Changes
Attitude Towards			
Breastfeeding : Approved	94%	96%	+2%
Mean Duration of Breastfeeding (in Months)	22%	15%	—7 months
Knowledge About Breastfeeding			
Good for Child Health	32%	80%	+52%
Breastfeeding	60%	5%	—55%
Bad for Child Health			
Don't Know/Not Sure	10%	14%	+4%
Know Methods of Cutting the Umbilical Cord :			
Bamboo Silver	39%	2%	—37
Razor Blade	54%	94%	+40%
Scissors	3%	2%	—1%
Other Methods	4%	2%	—2%

Although our investigation into the status of child care related matters is limited to descriptive analysis, suffice it to say that even a moderate change in the trained women's attitude towards breastfeeding and knowledge in the instruments of umbilical cutting may speak of the degree of changes in their long standing habit in conjunction with the changes in their knowledge in family planning and contraceptive behaviour.

ANNUAL FAMILY AND PERSONAL INCOME

Both family and personal income give clues to one's understanding about the economic base of the population. We must, however, note that the collection of income data has always been

troublesome and that it is often subject to under reporting, because the people generally do not disclose their real income, for reasons of their own. In spite of this limitation, we attempted to know the sources of income of the trained women's families, and in that context, their own contribution to the family income was ascertained. The question relating to annual family income was asked both in the base year (1976) and the follow-up year (1979).

Since our interest was to know the trained women's annual family income vis-a-vis their own income contribution, we have not gone into the relative contribution of the various income sources of the families. We have, however, observed that there was a wide range of income differences between the trained women's annual family income. In this study, we observed that four to six families were without any income. Our data show that the median annual family income of the trained women was Tk. 4,000 (US \$ 200) in 1976 and Tk. 4,247 (US \$ 217) in 1979, showing only a marginal increase of US \$ 17 over a span of three years. The following table shows that percentage of distribution of their annual family income :

Table 5

Percent Distribution of Annual Family Income of the Trained Women, 1976 and 1979

Income Level	1976 N=461 %	1979 N=520 %	Amount of Changes %
Low (upto Tk. 3,000)	30	37	+ 7
Medium (Tk. 3,001—12,000)	65	52	-- 13
High (Tk. 12,001+)	4	10	+ 6
Mediam Income	Tk. 4000	Tk. 4247	—

The above data show that some families of medium income were pushed back to below medium income level and some families

were pushed into above into above medium income level in 1976. If we examine their own income data, however, we find some improvment in the different income level. In 1979, 81% contributed to raise the income level of the families as against 61% of 1976. Data also show a remarkable increase in both the mean and median income of the trained women from 1976. Table 6 gives picture of this situation.

Table 6

Mean and Median Annual Personal Income Contribution of the Trained Women, 1976 and 1979

Personal Annual Contribution to Family	1976 N=461	1979 (in Taka N=520)	Amount of Change in Taka
Mean	Tk. 235	Tk. 628	+ 392
Median*	0	Tk. 200	+ 200
S.D.	Tk. 619	Tk. 1215	

Pending a detailed accounting analysis, suffice it to indicaet that the above upward increase in both the mean and median contribution of the trained women may be largely due to their exposure to the trade skills which might have augumented their ability to increase their income and thereby contributed towards family income. The extent to which the trade skills have contributed to raise personal income is also separately examined.

TRADE SKILLS

Included in this category of variables are the number of trade skills known, involvement in the production workshop, relative contribution of each trade to the trained women's and annual income from trade skills. Our description of these variables is

* Sixty one percent of the respondents reported that they had no personal income in 1976 as compared to 19% in 1979.

based only on the 1979 follow-up data, because most of the questions relating to these variables were not asked while registering them in the vocational training course except for the base information of, at least, one skill known to them as compared to three skills known to them in 1979 as a result of their exposure to the training programme. We stated earlier that seven kinds of trade skills were imparted to the trainees at the upazila and union level vocational training centres so as to enable them to pursue, at least, one or several of these skills for earning income. Out of the seven trade skills, only on average three trade skills, were known to them in 1979 as compared to one skill in 1976.

Two income options open to the trainees were :

- i) to work in the production workshop attached to each training centre ; and
- ii) to work on their own.

In our sample of 520 trained Women, 54% were actually involved in the production workshops to earn some income. For a poor and distressed trained women, this kind of work opportunity was helpful as it did not involve any capital investment on her part at all.

We wanted to know from the trained women about their income from the sale proceeds of their products. Data on this variable show that their quarterly median income from their trade (s) is Tk. 200/- only. Their annual median income was Tk. 800/-, while their mean annual income was Tk. 1575/-. This information suggests that trade skills perhaps are important factors in raising women's own income to a great extent.

We also examined the trained women's relative involvement in each of the trade skills and their relative income from the sale proceeds of their production works. Our data revealed that most of the trained women (84%) were engaged in poultry raising and sewing for income earning. In Table 7 our data show that the trained women were engaged in more than one trade.

Table 7

Percentage of the Trained Women Engaged in Various Trades, 1979.

Trades	N=520* %
Popultry	84
Sewing	84
Embroidery	72
Jute Goods	50
Cane Goods	26
Clay	20
Weaving	15

* Trained women were engaged in more than one trade.

FERTILITY

Our final set of variables concerning the trained women are those which are related to reproduction, namely, the total fertility rate (TFR), age-specific fertility rate (ASFR), general fertility rate (GFR), mean number of ever-born children, age-specific mean parity, age-specific child survival ratio and pregnancy rate.

The basic inputs for these fertility estimates were the data on live births during the last twelve months preceding the follow-up survey (1979). In the base year (1976), no attempt was made at the time of registering the currently married trained women nor was an effort made to get this information at the time of the retrospective survey (1981) for possible recall lapse and misreporting.

Among the trained women, there are currently married, ever-married and un-married women of the child-bearing age of 15-49 years. The number of currently married were 257, and the ever-married were 402. There were 119 unmarried trained women who were also included in the denominator while estimating ASFR, TFR and GFR of all the trained women. The following table shows these rates among the currently married, ever-married women aged 15-49 years for the year 1979.

Table 8

The Fertility Rates of the Trained Women, 1979.

Age Group	ASFR of the currently married trained women (N=257)	ASFR of the Ever-Married Trained Women (N=402)	ASFR of all Trained Women (N=520)
15 - 19	·186	·139	·055
20 - 24	·170	·094	·094
25 - 29	·143	·095	·095
30 - 34	·111	·070	·069
35 - 39	·125	·066	·066
40 - 44	—	—	—
45 - 49	—	—	—
TFR*	3·7	2·32	1·9
GFR**	143	92	72

Among our currently married trained women of the age-group 40-49, no birth occurred during the 12 months preceding the follow-up survey (1979) and, hence, they had no contribution to the ASFRs, TFRs or GFRs. Another observation is that a bell-shaped curve representing the ASFR of various age-group which is the normal fertility pattern is not in accord with our age-specific fertility (ASFR) data, which may be due to our small sample size.

* The total fertility rate is defined as the average number of live births a women would have experienced in her reproductive period under the current set of ASFRs. It is estimated by adding the ASFRs, multiplied by 5.

** The general fertility rate is defined as the total number of live births per 1,000 women of reproductive (15-49) age.

For paucity of base fertility (1976) data, we cannot see the fertility changes, if any, among our trained women. However, the Bangladesh Fertility Survey (1976 : p. 73) consisting of 5,039 ever-married rural women, provides some basis for comparison of fertility data. The total fertility rate of ever-married women of this survey was 6·3 which is more than double of 1979 TFR of 2·3 of the ever-married trained women of this study. This comparison, however, should be viewed with the utmost caution, because of our small sample size and possibly of some differences in socio-economic and demographic characteristics.

Our fertility estimates are direct rather than indirect, which is highly suggested (Brass 1975) for an underdeveloped country like Bangladesh, where under reporting of births and misreporting of age of the mother owing to recall lapse and supersition appear to exist. We could not apply the Brass' technique in this case, however, because the fertility rate in the age-group 15-19 years was higher than the age-group 20-24, an unusual fertility pattern. Brass' indirect estimate is based on the assumption that the ASFR of 15-19 years will be generally lower than the ASFR of 20-24. Our fertility data are not, clearly, in accord with his theoretical assumption. Both the currently married and the ever-married trained women in the age-group 15-19 have experienced more births than those of the other age-groups.

In the case of all trained women, however, the ASFR of the age-group 15-19 is lower than the 20-24 groups. This is largely due to the higher proportion of unmarried trained women in the age-group 15-19. In this case, the age-specific fertility model seems to be in accord with the Brass' theoretical assumptions and, hence, we estimate the TFR by applying his technique of P/F ratio. Thus, we got a TFR of 2·0 by indirect estimate as against the direct estimate of fertility rate of 1·9. The difference between these two TFRs is very small.

Under the above circumstances, the TFR of the currently married trained women in 1976 was estimated by an indirect measure for

comparison with the 1979 TFR. Thus, we reconstructed the 1976 TFR by means of a technique developed by Coale and Demeny. (3)

$$TFR = \frac{P_3^2}{P_2}$$

Where, P_3^2 is the square of the mean parity of the age-group 25-29 years; and P_2 is the mean parity of the age-group 20-24 years. We have estimated mean parity of the base year on the basis of retrospective survey data. Based on data for the age-group 20-24 and 25-29, our derived TFR is 3.65 for the base year, which is lower than the 1979 TFR by .05 only.

CHILDREN EVER BORN

Data on children ever-born (alive) to the currently married trained women provide some reasonable basis for a trend analysis of their past and present fertility. Since we collected the data on everborn children (4) both in the base year (1976) and the follow-up year (1979) by asking: How many children were born alive to you up to this time since you were first married? Data on parity, thus collected, were compared for two points of time.

Table 9

The Percentage of the Currently Married, Trained Women in the Base Year (1976) and the Follow-up Year (1979) According to Birth Order.

Birth Order	Currently Married Women	
	1976 N=248 (%)	1979 N=257 (%)
0	15	17
1	28	24
2	18	18
3	17	16
4	13	15
5	9	10

Several statistics computed from the data of Table 9 to get a comprehensive picture of the fertility pattern show that proportion children were .17 (N=44) in 1979; and parity was 2.64 for the currently married mother and 2.18 for the currently married women in the same year. There was only an increase of 0.07 per currently married woman. Such an increase in the mean number of everborn children is very insignificant. The data in Table 10 also bear this out.

Table 10

Mean Parity of the Currently Married Women by Age, 1976 and 1979.

Age	1976 (N=248)	1979 (N=257)
15-19	.17	.81
20-24	1.15	1.69
25-29	2.05	2.67
30-34	3.61	3.71
35-39	4.08	3.90
40-44	4.75	4.00
45-49	—	3.00
All	2.11	2.18
Increase (2.18-2.11) = .07		

(3) Methods of Estimating Fertility and Mortality from limited and Defective Data. An occasional publication of the Laboratory of Population Statistics. North Carolina, Chapel Hill, 1975, p. 13.

(4) In order to get correct information on ever-born children, we ascertained from the ever-married women whether the children born alive, cried or moved after their delivery.

Our hypothesis was that the women who had direct exposure to the vocational programme would have fewer births and demonstrate sufficient restraint to control their own fertility. A slight increase of .07 in their mean parity apparently supports this contention.

SURVIVING CHILD-WOMEN RATIO

The number of living children per currently married trained woman of the base year (1976) and the follow-up year (1979) have been studied in this study to examine the extent to which the proportion of living children increasing per currently married women. We have examined the data by age of the currently married woman to see the age-specific child survival ratio between these two points of time.

Table 11

Age-Specific Surviving Child-Woman Ratio Among The Currently Married Women, 1976 and 1979.

Age	1976 (N=248)	1979 (N=257)	Amount of Increase
15 - 19	.66	.69	+ .03
20 - 24	.99	1.42	+ .43
25 - 29	1.73	2.51	+ .78
30 - 34	2.91	3.18	+ .39
35 - 39	3.46	3.72	+ .34
40 - 44	2.56	3.70	+ 1.14
45 - 49	—	—	—
Average number of surviving children per currently married trained woman.	1.85	2.0	.15

The above data show that the average number of living children per currently married trained women was 1.85 in 1976 as compared to 2.0 in 1979, showing an average increase of .15 only per women. The data also show that there has been some increase in the survival ratio in all age-groups, although in varying proportion. The average yearly increase in the child survival ratio for women was 0.05 only. In 1979, for age-group 45-49, survival ratio was lower than the preceding age-group which might be due to chance, i. e., the fewer children in that age-group is relative to the number of women.

PREGNANCY STATUS

The pregnancy rate is one of the ways to describe reproductive behaviour. In the follow-up survey, we posed a question about this to the currently married women who constitute 49% of our sample of 520 respondents. In Bangladeshi culture, to ask unmarried, separated and divorced women about their pregnancy status would be unacceptable behaviour. We did not hence ascertain pregnancy status among them. Among the 257 currently married women, nine percent reported that they were pregnant at the time of the follow-up survey (1979) as compared to 16% of the married women of the base year 1976 (Mia and Sarker, 1978, p. 18. (5)

In high fertility countries like Bangladesh, it is generally believed that one-third of the married women remain pregnant at any given time of the year (Bangladesh First Five Year Plan, 1973, p. 523). This assumption did not hold true in respect to our currently married trained women who were reportedly still fecund.

- (5) The study by Ahmedullah Mia and N. Sarkar is based on 86 currently married women out of their sample of 158 ever-married trained women of a few randomly selected training centres in 1976. Their study was based on a very small sample size. Hence, it does not provide sufficient basis for comparison. Since this was the only study concerning the trained women in the base year, how we use its data from time to time as it seems appropriate.

The foregoing analysis show that fertility, measured in terms of TFR, ASFR and GFR and also the age-specific mean number of ever-born and surviving children, was found to be much low among the trained women. So also was the pregnancy ratio. Regarding parity, no significant upward change was noticed during 1976-79, except for the age-group 40-49.

Untrained Women

Included in the description are their background, child care, trade skill, family planning and fertility related variables of the currently married untrained programme (indirectly exposed) and non-programme (unexposed) women. The BFS data of 1976 are used as the base data for measuring the changes in certain indicators between the base year (1976) and the follow-up year (1979). Also, the BCPS data of 1979, especially the family planning and fertility related data were used for comparison with the follow-up data (1979) for the programme and non-programme women.

BACKGROUND CHARACTERISTICS

Included in this set of variables are the village women's socio-economic and demographic characteristics, namely, their educational level, annual family income, work status, family size, age at first marriage and duration of first marriage. We have collected information on these characteristics, from our village women to observe the differences, if any, between the programme and non-programme areas. The status of these variables in the follow-up year (1979) was examined and found that there was little variation in education level, work status, mean annual family income, mean age at first marriage and mean duration of first marriage between the programme and non-programme village women. Variation, if any, may be attributed to the small size of our samples.

Table 12

Background Characteristics of the Programme (Indirectly Exposed) and Non-Programme (Unexposed) Women, 1979

Variables	Programme (Indirectly Ex- posed) Women N=655 (%)	Non-Programme (Unexposed) Women N=312 (%)
Educational Level		
Illiterate	73	73
Primary	14	21
Above Primary	13	6
Work Status		
Housewife	97	98
Work besides Household	3	2
Annual Family Income		
Low Income (Tk. 3,000/)	20	18
Medium Income (Tk. 3,000-12,000/-)	61	63
Above Medium Income (Tk. 12,000 +)	18	19
Median Income	Tk. 5,140	Tk. 4,840
Family Size		
Median	5.7	5.8
Age of the Respondent		
Mean (in years)	28	30
Median (in years)	29	30
Age at First Marriage		
Mean (in years)	13	14.2
Median (in years)	12	13
Duration of First Marriage		
Mean Duration	16 years	18 years
Median Duration	14 years	16 years.

Other background variables studied were attitude towards age at marriage, ideal gap between first marriage and first child, ideal number of children, sex preference, and attitude towards working women. Both the programme (indirectly) and non-programme (unexposed) women were asked a set of questions relating to these variables, The data, thus gathered, are presented below.

Table 13

Some Attitudinal Characteristics of the Programme and Non-Programme Village Women, 1979.

Variables	Programme (Indirectly Ex- posed) Women N=655	Non-Programme (Unexposed) Women N=312	Amount of Difference
	Years	Years	Years
Mean ideal age of girls marriage	17.0	14.5	-2.5
Mean ideal gap between marriage and first issue	3.6	3.4	-0.2
Mean desired number of children	3.8	4.0	-0.2
Sex preference :			
Boys	85%	78%	-7%
Girls	15%	14%*	-5%

*Eight percent did not respond

The data on ideal gap between first marriage and first child, preferred age at marriage and ideal number of children, show that the programme village women have some progressive outlook compared to the non-programme village women. Both types of respondents have shown a strong preference for boys, and a strong positive attitude towards working women.

KNOWLEDGE ABOUT TRAINED WOMEN AND TRADE SKILLS

Keeping in view our research questions, we wanted to know whether the village women had any knowledge about the training centre, the trained women or the trade skills. We had two objectives in mind : first, whether the training centre and the trained women located in the programme area have any influence on the village women : and second, to what extent the programme village women differed from the non-programme village women with respect to their knowledge of the centre, and the trained women.

Table 14 shows that more programme women (27%) were aware of the vocational training centre than the non-programme village women (18%). Also, 42% of the programme village women were aware of the trained women as compared to two percent of the non-programme women. As against two percent of the non-programme women, 41% of the programme women reported that the trained women discussed with them what they had learned at the vocational training centres ; ten percent of the programme women reported to having been benefited by this discussion as compared to one percent of the non-programme women. Only four Percent of the programme women accepted family planning as a result of their motivation, These kind of poor response rates are contrary to our expectations and speak of the lack of concern, or apathy of the trained women in discharging their role in motivating the fellow women to accept family planning method. Though the situation in the non-programme area is still worse than the programme area in this respect, one may, however, conclude simply by looking at the descriptive data that the trained women's contribution to recruiting family planning acceptors is not significant. Either their role is too much diffused or they are not properly told or supervised about their possible role in family planning motivation. In fact, these are operational questions requiring further Investigation before they can be answered.

With regard to median number of trade skills known, there is a difference of .3 between programme (indirectly exposed)

Table 14

Knowledge About the Training Centre or Trained Women and Trade Skills in the Programme and Non-Programme Villages in 1979.

Variables	Programme Women N=655 (%)	Non-Programme Women N=312 (%)
Training Centre :		
Awareness of Training Centre	27	18
Trained Women's Activities :		
Awareness of the Trained Women.	42	2
Trained women discussed what they had learned.	41	2
Benefited from discussion	10	1
Family Planning accepted after discussion	4	—
Total number of women who were visited after accepting F. P.	1	—
Trade Skills :		
Median number of trade skills known.	1.6	1.3
Sources of knowledge about trade skills :		
Trained women	8	1
Co-operative members	2	—
Both trained women and co-operative members	64	26
Don't know	26	26
Mean annual income from trade skills.	Tk. 504	Tk. 400

and non-programme (unexposed) women. It also appears that the "trained women and village co-operative members" are the major sources of information about the skills. To these sources of knowledge of trade skills, the contribution of the trained alone was eight percent in the programme villages. Annual mean income of the programme women from the trade skills is higher (Tk. 504) than the mean income (Tk. 400) of the non-programme women.

DECISION MAKING SYSTEM

A question has been asked to ascertain the decision-making system in the programme and non-programme villages ; 71% of the programme women as compared to 86% of the non-programme women said that their husbands made the decisions in their families. Comparable figure for the wives making decisions in their families in the programme and non-programme area are five percent only. Those who reported that 'others' made decisions for their families were 22% and 9% respectively in the programme and non-programme areas. Though the 'wives' and 'others' making decisions for the family vary between the programme and non-programme villages, the role of the husbands in the family decision-making still appears to be dominant.

CHILD CARE VARIABLES

Included in this list of variables are attitude towards breast-feeding, and knowledge about cutting the umbilical cord. One of the objectives of the vocational training programme is to impart knowledge to the trainees about child care related knowledge so as to enable them to serve as diffusing agents in their respective villages,

Attitude towards breastfeeding was highly positive among the programme and non-programme women, Most of them considered breastfeeding good for the baby's health and a high percentage of them mentioned the razor blade as an appropriate instrument for naval cutting, Bamboo sliver was still considered good for naval cutting by a small fraction (10%) of them.

Table 15

Child Care Related Variables of Programme and Non-Programme Women, 1979.

Variables	Programme Women N=655 (%)	Non-Programme Women N=312 (%)
Positive attitude towards		
Breastfeeding	87	92
Reasons for breastfeeding :		
Good for baby's health	58	53
Good for baby's survival	3	24
Don't know	39	23
Methods of cutting the umbilical cord :		
Razor Blade	59	49
Scissors	20	32
Bamboo Sliver	21	10
Others	—	9

From the above data, we did not find any large difference in the status of the child care related variable in 1979 among the programme and non-programme village woman.

FAMILY PLANNING RELATED VARIABLES

One of the objectives of this study was to see whether the vocational training programme made any impact in diffusing knowledge, and increasing acceptance of family planning more among the programme (indirectly exposed) women as compared to non-programme women. We asked a common set of questions relating to the above variables to both programme and non-programme women. The results are briefly summarized in Table 16.

Despite the support of a large proportion of programme and non-programme village women for family planning and having their knowledge of, at least, one contraceptive method, the percentage of current use in 1979 is unexpectedly low. Only 12% are current users among the programme women as compared to 10% of the non-programme women. The median months to duration of contraceptive practice was only 5.8 months for both.

Table 16

Family Planning Related Variables of Programme and Non-Programme Women, 1979

Variables	Programme N=655 (%)	Non-programme N=312 (%)
Support family planning	77	72
Median number of methods known	4.2	4.0
Sources of Family Planning Advice.		
Friends/relatives/neighbours	70	72
FPA/FWA/FWW*	15	18
Trained women	6	—
Others	7	10
Knowledge of at least one method	94	96
Use Status		
Never Users	76	77
Current Users	12	10
Past Users	9	13
Median months contraceptive used.	5.8	5.8

* Family Planning Assistant (FPA), Family Welfare Assistant (FWA) and Family Welfare Worker (FWW).

Though programmatic efforts have been continuing to disseminate family planning measures along with extra programme like the vocational training programme, still 70% of the respondents of the programme and non-programme areas said that friends, relatives and neighbours were their main sources of knowledge. Neither family planning personnel (FPAs and FWAs) nor the vocational project personnel (trained women) were regarded as sources of family planning knowledge.

Judged by the criteria of current use, the contraceptive prevalence rate among the programme women was 12%, which was close to the national average of 13% (BCPS, 1979). The comparable figure for the non-programme woman was only 10%. In the follow-up survey (1979), we have also asked a specific question to ascertain the respondents' knowledge about particular methods. The results summarized for the programme and non-programme women are then compared with the BFS data (1976) on currently married exposed women. Table 17 provides a comparative picture of the contraceptive related knowledge of the women in the study areas.

Data clearly show that with respect to oral pill and male and female sterilization, the knowledge of the programme and non-programme women in 1979 was much higher than the level of knowledge prevailing in 1976. The only exception was the case of inefficient methods like withdrawal. Comparable figure with respect to the directly exposed trained women was much higher. The evidence leads us to conclude that the programme has succeeded in providing more knowledge among the trained women than among the untrained village women; and also, in disseminating knowledge about more efficient methods like pills and sterilization. It is also clear from the data that the programme and non-programme women did not differ much with regard to the family planning knowledge.

KNOWLEDGE OF AT LEAST ONE METHOD

In the follow-up surveys, we tried to know how many of the untrained village women know properly, at least, one method.

Table 17

The Percentage of Respondents having knowledge about Various Methods by Programme Exposure in 1979, and the BFS, 1976.

Programme Exposure	Oral Pill	Condom	IUD	Emko	Male Sterilization	Female Sterilization	Rhythm	Abortion	Withdrawal
Trained Women (1979)	98	86	82	80	86	89	60	28	14
Programme Women (1979)	89	50	33	10	63	80	13	18	5
Non-Programme (1979)	90	49	28	4	66	77	24	22	2
BFS (1976)	78	—	—	—	33	65	—	—	18

We put the same question to the trained women as well. The findings show that 94% of the programme women and 96% of the non-programme women knew, at least, one method properly, as compared to 99% of the trained women. The comparable figure in the BFS (1976) was 82% showing a substantial amount of increase in the knowledge of at least one method among the untrained village women over a period of three years.

FERTILITY

We have also measured some fertility related Characteristics of untrained village women to describe reproductive behaviour, as we have done in the case of the trained women. The fertility related variables are the total fertility rate (TFR), age-specific fertility rates (ASFR), the general fertility rate (GFR), parity, surviving child women ratio and pregnancy status.

Table 18

The Fertility Rates of the Trained, Untrained Currently Married Village Women and the BCPS Married Rural Women, 1979 and the BFS Women, 1976

Age Group	BFS 1976 N=4930	Pro- gramme Women N=655	Non- Programme Women N=312	Trained Women N=257	BCPS N=1294
15-19	·187	·219	·326	·186	·309
20-24	·318	·365	·311	·170	·258
25-29	·316	·266	·263	·143	·247
30-34	·275	·207	·181	·111	·213
35-39	·212	·216	·200	·125	·113
40-44	·135	·112	·108	—	·076
45-49	·048	·024	·09	—	·018
TFR	7·44	7·04	7·4	3·7	6·47
GFR	—	230	221	143	197

NOTE : While estimating the ASFR of the age-group 15-19 years, some births of the age-group 10-14 years are also included. Hence the ASFR of the age group 15-19 shows higher fertility rate than the next age-group 20-24 among the non-programme and BCPS women, 1979. There are marital fertility rates.

The basic inputs of the fertility rates are children ever born and live births during 12 months preceding the follow-up survey. Since our village women are currently married, all these rates are marital fertility rates. Table 18 summarizes the results and present a comparative picture of the current fertility rates of the trained and untrained village women vis-a-vis the currently married rural women of the Bangladesh fertility survey (Sawon Hong, 1980, p.24)

Because of a higher ASFR in the age-group 15-19, the non-programme (unexposed) women had a higher TFR than the programme (indirectly exposed) women. The ASFRs of the programme and the non-programme women in the age group 25-29 and above are lower than the 1976 BFS women of the comparable age group.

The TFR of programme women is lower by ·4 than that of the non-programme women, and also than the 1976 BFS women. While the fertility rate was declining from 1976 BFS level of 7·4 in the country as a whole, we observed still a TFR of 7·04 in this programme area in 1979. The summary index of current fertility as expressed by the GFR is slightly higher among the programme women than the non-programme. From these data, one might reasonably conclude that both programme and non-programme women did not differ much in their fertility behaviour. In Chapter VI, we shall discuss correlates of fertility of programme and non-programme women.

NUMBER OF CHILDREN EVER BORN

One way of looking at the fertility pattern is to examine the mean number of ever-born children by current age of the woman. Hence, we had to ask both the programme and non-programme women a common question regarding the number of

(6) First marriage is used as a reference for recall. Sawon Hong, Demographic Characteristics of Bangladesh, 1980 p. 16. Her analysis is based on BFS data of 1976.

Table 19

Mean Number of Children Ever-Born to the Currently Married Programme and Non-Programme Women, 1979 and Those of the BFS by Current Age.

Age Group	Trained Women 1979	Programme Women 1979	Non-programme Women 1979	BCPS 1979	BFS Women 1976
15-19	·81	0·69	0·71	·88	1·8
20-24	1·65	2·26	1·85	2·09	2·5
25-29	2·67	3·95	3·75	3·59	4·3
30-34	3·71	5·66	5·77	7·07	5·9
35-39	3·90	6·73	6·76	61·5	6·9
40-44	4·00	7·65	7·22	6·74	7·6
45-49	3·00	8·78	8·08	6·80	7·3
N=	257	655	312	1294	4460
$\bar{X}$ =	1·18	4·5	3·4	3·7	4·0

live births they had experienced since their first marriage (6) as we did in the case of the trained women. We have used the BFS data of the currently married women for comparison, Table 19 presents a picture of the mean number of ever-born children of the currently married women by their current age.

Data show that the mean number of ever-born children per woman in the BFS, 1976, in the age-group 15-19 and 53-39 is higher than the comparable figures of the Programme and non-programme women of the same age-groups. The mean number of ever-born children per woman is higher among the programme women than the non-programme women and also, among the BFS women of 1976.

Since the mean number of ever-born children of the currently married women reflects both their past and recent fertility, it is not a good measure of current fertility to observe the changes in the fertility pattern, particularly in an impact study, such as, this. We will, therefore, refrain from making further analysis of parity, except concluding that in over all fertility behaviour since their first marriage, both the programme and non-programme women did not differ much,

SUM UP

For the socio-economic, demographic and other programme related indicators including trade skills and KAP in family planning, we have noticed some upward trend among the trained women. We have also observed some depressing trend in fertility, whether these variation. The comparative situation with programme and non-programme women is of very little difference, except in the literacy rate, median annual family income, total fertility rate and current use of contraceptive behaviour between the programme and non-programme women are due to programme exposure or not, are a matter of further accounting analysis which we will pursue in the subsequent chapters.

As regards the role of the Trained women, suffice it to say that only ten percent of the programme women reported to have been benefited from discussion with them; and only four percent accepted family planning method after discussion. One percent of programme women were followed up by the trained women which was contrary to our expectation.

CHAPTER VI

Women's Status at the Household Level

Intimately related to the changing pattern of family relationships is the question of the status of women in society. Most of the traditional societies are, if not strictly patriarchal, at least, vigorously male dominated. One of the extreme examples among the south East Asian countries is Bangladesh where women especially in the rural areas are virtually dependent on men for even the simplest transaction at the household level (Jahan, 1975). In such a society, social change is difficult. Yet many predict that given some exposure to income opportunities through craft training programme, rural women may gain some liberating influence and power in family decision making. The extent to which this assumption is true has been tested among trained women of this study by way of eliciting information about some family related indices. The results reveal that craft training appears to be a good moderating factor for women's modernization process and likely to enable them to acquire some power in the family decision making.

Our source of knowledge about women's status at the household level is based on a retrospective survey (Mabud, 1981) conducted on a cohort of four hundred sixty one trained women who were recruited in 1976 by the Ministry of Women's Affairs, Government of Bangladesh. Data were collected* through a structured questionnaire to have an answer to our key research question:

"Have the women gained some decision-result of their exposure to trade skills and income?"

* The instrument was designed to get information for the base year (1976) and the survey time (1981) in order to observe changes overtime.

Keeping in view this question, we have designed our basic instrument so as to get some information on certain status-related variables, namely, the decision-making system in the family, degree of consultation with earning and non-earning members, and their perceived importance in the family decision-making before and after their exposure to the training programme. Information thus collected provide the basis of our discussion in this chapter.

Exposure to Trade Skills

As we know from our discussion in the previous chapter that in 1976, the trained women were exposed for a period six months to seven kinds of trade skills such as sewing, poultry-raising, embroidery and lace, jute goods, cane and bamboo goods, weaving and clay-modelling by the women's vocational training programme. Besides, they were also given training on population education for their own motivation of family size limitation and also, for playing the role of a catalyst in their respective communities. The craft training was given by locally recruited trade instructors. Family planning and child care related knowledge was imparted by the local family planning officer.

Characteristics of the Cohort

We also know from our previous discussion that our cohort of trained women come of very low income families. Their average annual family income was US \$ 335 in 1979; fifty two percent was literate i. e. they have had schooling from 1-5 grades and above. Of them, 22% were unmarried, 80% currently married and 77% ever married. All these women were in their reproductive years; and 55% were under the age of 25. The mean parity of those who were currently married was found to be 2.18 in 1979; and their total fertility rate was 3.7 which was much lower indeed compared to the national average. Median age at first marriage was 16 years and age at the time of interview was 24 years.

Results

Keeping in view our research objective, we have asked several questions on our status related variables. Notwithstanding the limitations imposed by the subtlety of the questions, we have been able to get some tentative answer.

First of all, we wanted to know the decision making system in the base year (1976). We wanted to know whether in a male dominated society like Bangladesh, men had an edge over women in the decision making system. As for the year 1976, we were told that in eleven percent of our trained women's families (N=461), women alone made decision's as contrast to fifty percent of the families in which men alone made decisions. Only in thirty nine percent families, both husband and wife together made decision ; we then posed another question to know whether in family decision making the earning members were consulted more than the non-earning members or both earning and non-earning members were equally consulted. Interesting data show that forty one percent reported that earning members were more consulted than non-earning members. This system of consultation prevalent prior to their exposure to trade skill was still in vogue in 1981 according to the overwhelming majority of them.

We also asked a probing question by presenting before them a set of important family related matters to ascertain the consultation system in the base year (1976). Table 20 summarises results.

The above data show that the trained women were not consulted about their own marriage, an important crucial and historic decision-making event in their lives ; whereas, for other events, they were, by and large, consulted.

Having seen the above response pattern, we still wanted to know their status in 1981, and asked whether they were consulted more than the time before their training. Seventy

Table 20

Consultation System in the Trained Women's Families
by Some Selected Indicators in 1976.

Indicators	%Women Consulted N=451
1. About their marriage.	23
2. Son's Circumcision.	40
3. The marriage of their brothers and sisters/children.	54
4. School Admission of children/ brothers and sisters.	68
5. Getting loan or giving loan to others.	82
6. Visiting friends and neighbours.	87
7. Buying a major items.	91

three percent of the respondents informed us that they were more consulted on the aforesaid family matters than before. Considering the pitfalls inherent in this kind of response we asked another probing question :

"Do you think that your importance in the family has been increased as a result of your acquiring knowlegde in the trade skills which you did not have until your training?"

Interestingly enough, 90% of the respondents felt that their knowledge in trade skills had enhanced their importance in the family as compared to 10% who were not sure at all.

Finally, we asked the trained women about the perception of their own status in terms of the value attached to their opinions in the family. Before posing the question, we gave an introduction as follow ;

"As a result of acquiring trade skills, possibly you are also earning some income for yourself or for your family. For this, do you think that your opinion is valued more or less than before, or about the same?"

The answer to this question is also consistent with their earlier stand on their importance in the family. seventy six of the trained women said that their opinion was more valued than before.

The foregoing analyses clearly reveal that the trained women's importance in their families increased after their training. In most cases, their opinion in the family was much more valued than before. Our data also show that they had generally not been consulted on their marriage, although they were often consulted on other matters of family interest.

Women's Status in the Family

One of the objectives of the women's vocational programme is to raise the status of women in their immediate social habitat—the family. It is belived that the down-graded position of women in the family is largely due to their dependency, which is again, to a great extent, deemed to be owing to their lack of education and income. The extent to which this assumption is true in Bangladeshi culture has been tested to ascertain their status as of 1981 in the family and whether they felt more important in the family decision-making after acquiring trade skills than before their training. Out descriptive analysis reveals certain interesting facts concerning their status which we like to pursue further for our understanding about the underlying situation.

While examining the women's status in the family by various measures, we have kept in mind three predictors, namely **age of the respondent, income from trade skills, and educational level** considering that these have underpinning relationship with women's status. In the analysis that follow we shall see which of these predictors has significant relationship with their status at the household level.

Age and Status of Their Opinion

The first predictor in our consideration is age of the respondents. We assume that age and status are generally positively related, at least, in the family. Is this true with respect to our trained women who are from the low income group? The answer is "No". The data clearly show a significant ($p < .05$) negative relationship $\text{Gamma} = -.16$

Out of 461 women, 44% are in the age-group 20-24 years and that 74% reported to have perceived greater weight of their opinion in the family than before, compared to 26% who thought that the status of their opinion in the family was about the same as before they had received training. Age and status of their opinion are, however, negatively correlated implying that as the age increases status of opinion decreases i. e. elderly women are less consulted than the women who are specially in their twenties and is relatively young.

Income from Trades and Status of Their Opinion

The second predictor in our consideration is monthly income from trade skills. The data reveled that the association between the income from trade skills and status of their opinion is significant at .06 level. The strength of this association (if measured by contingency co-efficient = .14) is very weak and not permeable to draw any statistical conclusion. Almost half of them (47%) are still in low income scale of less than Tk. 100/- i. e. US \$ 6.

Trade Income and Degree of Consultation

Our main interest lies in knowing the impact of the trained women's trade related income upon the status they really enjoy in their household, i. e. whether they were consulted more than before or about the same. The data in Table 1 show that the association between these variable is significant) $p = .01$).

Table 21

Degree of Consultation by the Trained Women's Quarterly Income from the Trades, 1981.

Degree of Consultation	Less than Taka 100/-	High Taka 100/- and above	Total
More Consulted	222 (73)*	115 (72)	337 (73)
Same as before training	79 (27)	43 (28)	124 (27)
Total :	303 (100)	158 (100)	461 (100)

$X^2=7$; $DF=1$; $P \leq .01$; $\Phi=0.122$

*Figures in parenthesis are in percentage.

The data also show that the trained women are more consulted than before and that degree of consultation is significantly ($p \leq .01$) related to their income from the trade skills. Such relationship is positive but not strong enough to lend adequate support to our theory that the trained women are more consulted than before, because of their income from the trade skills.

Educational Level and perceived Importance

We generally believe that educational level significantly enhances one's importance in the family. Although male versus female education with their years of schooling has not been studied in this study to observe their differential level of importance in the family, a simple bivariate relationship between the trained women's

educational level and their perceived importance in the family shows that there is no significant ($p > .05$) relationship to support our contention.

Similarly, we have attempted to know whether the trained women's trade income has any association with their perceived importance and we have found that there was insignificant association between them.

Decision-Making System and Fertility

We have examined fertility in terms of parity by the trained women's decision-making system in the family. Our data reveal that fertility is low among the family where husband and wife together make family decisions than among the families where either of the spouses alone make decisions. This finding lends support to what Boserup (1976) observed among the Turkish women in Ankara.

So far, our analysis of the trained women's status related data are concerned, we are of the view that trade income and educational level are yet to emerge as strong predictors for women's status in the low income families.

There is a subtlety in the status-income and status-education relationship which need to be further investigated. In our study population, by which we mean here all the trained women under the women's vocational training programme, real enhancement of women's status may require more time. However, we may note with some satisfaction that income from trade skills and women's status in the family is significantly related. Although such relationship is not strong at present, it may however, become stronger in future as their income from trade skills increases. The trained women's participation in the programme itself appears to be a contributory factor to their perceived importance in the family.

CHAPTER VII

Trained Women's income, Contraceptive and Reproductive Behaviour

In this chapter, we shall study the relationship between pairs of variables concerning the trained women and see whether such relationships are strong enough to support our theoretical framework discussed in chapter I. We shall also examine these relationships in appropriate cases by introducing the third factor to test for intervening or spurious relationships. To begin with, we have considered the following predictors for cross classifications with income, contraceptive and reproductive behaviour of the trained women to observe their bivariate relationship.

Women's status,
educational level,
number of trade skills known,
involvement in production workshop,
marital status,
annual family income,
age and age at marriage; and
number of living children.

It is assumed that the above predictors may have under planning relationships with income, contraceptive and reproductive behaviour of the trained women. For example, work status, educational level, knowledge in trade skills, involvement in production workshops and marital status may be related to trade income. Similarly, annual family income, age, age at marriage and number of living children may have some effect on contraceptive and reproductive behaviour.

(87)

Income

The first question to guide our analysis is: "Has the programme succeeded in raising their level of income?" This question is in accord with the immediate and explicit objective of the women's vocational training programme which is designed primarily to raise the trained women's income level and secondarily, to mould their contraceptive and reproductive behaviour. In keeping with this priority, we shall examine the correlates of income first before other variables and shall see which of the predictors is more related to income than the others.

The first predictor is work status which is defined as the trained women's work besides housework. Cross classification of this factor with their annual personal income contribution in the follow-up year (1979) shows that the association between them is highly significant ($P \leq .001$) and that the strength of such association is quite strong ($X^2=60.3$; $DF=2$; Contingency Co-efficient = .55). The comparable situation in 1976 was relatively low ($X^2=12.6$; $DF=2$; contingency co-efficient = .18; $p \leq .01$). For this difference, two reasons may be discerned, namely (i) more women worked besides the household work in 1979 than 1976; and (ii) trade income might have enabled them to contribute to family income in 1979. On examination of the data, we find that in 1976; 60% women could not contribute to family income as compared to 19% in 1979 (see p. 55). Income from trade skills was a great source of personal income contribution to family income.*

Trained Women's Income

EDUCATIONAL LEVEL AND PERSONAL INCOME CONTRIBUTION

Various studies show that educational level is a powerful predictor of income. We have examined the trained women's educational level and their annual personal income contribution. In the base year (1976), we observe that the relationship between

* See Table 1, Appendix E.

them was not significant ($p > .05$). In the follow-up year (1979), their association was found to be significant ($p \leq .001$) with a chi-square value of 17.35 indicating a moderate association ($\text{Gamma} = .25$) between annual personal income and the trained women's educational level.

How is it that in the base year (1976) there was little association ($\text{Gamma} = .04$) between the two variables? One assumption is that after exposure to the programme, educated women might have acquired more income ability than the illiterate trained women. We have some theoretical reason to believe that programme exposure as a third factor might have contributed to the significant relationship between the income level and the educational level of the trained women.

Our data showed that more literate women were in higher scale of income contribution than the illiterate women.

TRADE INCOME AND EDUCATIONAL LEVEL

Important sources of the trained women's income are the several trade skills which they have learned from training provided by the women's vocational programme. We have examined their **income from trade skills alone** to see whether it has some relationship with their educational level. Our analysis of the data is validated to some extent by the results displayed in Table 22.

The cell frequencies show that more literate women are in the higher income bracket than the illiterate trained women. It appears that education may be an important predictor not only for comprehending the knowledge about the trade skills, but also for earning a higher level of income from such skills.

The above finding is substantiated by the results of the tables cross-classifying income from trade skills by number of trade skills known (herein after called exposure to the programme) controlling for educational level. Our data show that the association between trained women's income from trade skills and exposure to the

Table 22
The Trained Women's Quarterly Income from Trade Skills
by Educational Level, 1979.

Income	Educational Level		Total
	Illiterate	Literate	
0 - 19 Taka	85 (35)*	72 (26)	157 (50)
20 - 49 "	45 (18)	28 (10)	73 (14)
50 - 99 "	46 (19)	54 (21)	100 (19)
100 - 199 "	70 (28)	118 (43)	188 ¹⁴⁸ (36) (17)
Total	246 (100)	272 (100)	518 (100)

Chi Square = 16.66 ; DF = 3 ; Significance Level = .001 ; Gamma .24.

*Figures in parenthesis are percentages.

programme controlling for the trained women's educational level up to primary and above is more highly significant and stronger (Partial Gamma = .37)* than the illiterate (Partial Gamma = .15).

KNOWLEDGE IN TRADE SKILLS AND TRADE INCOME

Our data also show that the knowledge in trade skills is a predictor of income from trade skills. The more the number of skills known, the higher their income from trade skills.

The association between trade skills known and the income from trades was found to be significant ($P \leq .001$) and strength of the association was moderate ($\text{Gamma} = .40$). Data also show

that the percentage of those who knew three or more trades were in the higher income scale than those who knew less than three trade skills.

It is clear that trade income and the trained Women's exposure to the programme are strongly related ($\text{Gamma}=.40$). This relationship was found to be still high (partial $\text{Gamma}=.30$) and significant ($P \leq .001$) even after controlling for those who work other than household task as compared to those who were confined to household work only (partial $\text{Gamma}=.06$; $P \leq .05$).

TRADE INCOME AND INVOLVEMENT IN PRODUCTION WORKSHOPS

We have also examined the relationship between these two variables. We have found that the women who work in the production workshop earn more income from trade skills than those who work at home. The relationship between these two variables was significant ($P \leq .001$) level. The strength of association was, however, moderate ($\text{Gamma}=.30$). †

The median income from trade skills among those involved in the production workshop is higher (Tk. 84) than for those having no involvement in the production workshop (Tk. 37) **. Fifty four percent of the trained women were involved in the production workshops (see p.87). The data also show that the trained women who were involved in the production workshop earned more income than those who were not involved.

*Cross classification of the two variables show $X^2=73.32$; $DF=12$.

† Chi square was 40.4 with 4 Degrees of freedom

** This amount is separately estimated.

NUMBER OF TRADE SKILLS KNOWN AND TRADES PRACTICED

The assumption that engagement in trades is largely determined by the number of trade skills known is amply proved by our data. It was observed that relationship between these two variables was significant ($P \leq .01$) and of fairly high strength (Yule's $Q=.60$).

Fifty seven percent of the trained women ($N=520$), have knowledge of four or more trades in 1979, and of those, a significant portion (44%) was engaged in four or more trades.

MARITAL STATUS, INCOME FROM TRADE AND INVOLVEMENT IN PRODUCTION WORKSHOP

We have examined the marital status as predictor for income and involvement in production workshop. We have found that the association between marital status and the findings of some other recent studies in Bangladesh (BFS, 1976 ; BCPS, 1979 and 1981) showing that low level of education does not significantly influence the contraceptive behaviour.

CONTRACEPTIVE PRACTICE AND PARITY

The hypothesis that the practice in family planning was related to the number of live births experienced by women is supported by our data concerning the currently married trained women. The results of the cross classifications of both the base year (1976) and the follow-up year (1979) were found to be significant ($P < .001$), but of varying strength of association i.e. the association between them was found weaker (contingency co-efficient=.21) in 1976 than 1979 (contingency co-efficient=.31).

PARITY AND AGE AT FIRST MARRIAGE

The number of children ever born depends, to some extent, on the women's age at first marriage. The earlier the marriage the longer the marital span and the more the likelihood of having

more births. In this study, we have tested this hypothesis and the results supported this. The association between the two variables was found to be moderate ($\text{Gamma}=.31$).

Zero Order Correlation

Our next bivariate analysis is the zero order correlation between a set of dependent and independent variables of this study. In three tables, representing seven dependent variables and a set of predictors, we have presented several zero order correlation coefficients with their statistical significance. One may, however, note that the selection of these variables is made on the basis of our theoretical interest, rather than their high correlation relative to the other variables. As a preliminary to the multivariate analysis that will follow, these correlations identify the variables which are significantly related to each other.

Our purpose of this bivariate analysis is to examine further the relationship of some of the dependent variables with the individual and programme level predictors discussed earlier and to identify the most relevant ones for the multivariate analysis in the next section.

INCOME FROM TRADE SKILLS

From the cross classification analysis we get an intuitive feeling that there is a cyclical relationship among the trained women's involvement in production workshop, knowledge in trade skills and educational level with income from trades. In our multivariate analysis, we shall see the extent to which these variables are related to income from trades after controlling the effects of other variables.

Note : The positive correlation means the presence of linear relationship in positive direction. Any change in the independent variables leads to a corresponding change in the dependent variables in the positive direction. The negative correlation, however, does not mean the absence of relationship. It simply means that any change in the independent variables leads to a change in the dependent variable in the negative (—) direction. The absence of any relationship between the independent and dependent variables occurs when the correlation co-efficient is zero.

Our interest is to see whether the number of trades known to the trained women as a result of their exposure to the programme has raised their income. The correlation co-efficients presented in Table 23 show how the various predictors are correlated to income and trade skills.

INVOLVEMENT IN PRODUCTION WORKSHOP

Educational level also appears to have some influence on the trained women's involvement in the production workshop. The correlation between the trained women's educational level and their involvement in the production workshop is 0.09 at and significant at .05 level. On further examination of our data, we find that the correlation between the involvement in production workshop and income from trades is .15 ($P \leq .01$).

Income from trades and the knowledge in trade skills appears to be moderately correlated ($r=0.37$) and is statistically significant ($P < .001$).

Again, relating to knowledge in trade skills, "involvement in production workshop" appears to be a good predictor, the correlation being .17 with statistical significance level of .001.

CURRENT CONTRACEPTIVE USE AND INTENTION FOR ITS FUTURE USE

Our interest is to know whether the current and ever use of contraceptive of the 257 currently married trained women and its correlations with several predictors as shown in Table 24 are statistically significant. We are also interested to know the best predictors of future use. The correlation between the number of surviving children and current use is also fairly high ($r=.36$) and statistically significant ($P \leq .001$). The correlation between age and ever use is very significant ($P \leq .001$). The currently married trained women's involvement in production workshop has also very insignificant correlation ($r=.06$) with current use of contraceptive.

Table 23

Zero Order Correlation Co-Efficients of a Few Selected Predictors with Trade Skills, and Income Related Dependent Variables Concerning the Trained Women, 1979.

Independent Variables	Dependent Variables	Correlation Co-Efficients (r) (N-520)
Number of trades known	Income from trades	0.37***
Involvement in Workshop	Number of Skills Known	0.17**
Educational level	Involvement in production workshop	0.09*
Involvement in production workshop	Income from trades	0.15**
Educational level	Number of trades known	0.21**
Educational level	Annual income contribution to family	0.15**
Trade Income	Do	.29***

* Significant at $P \leq .05$

** Significant at $P \leq .01$

*** Significant at $P \leq .001$

The data also show that several predictors appear to be highly correlated with "intention to use contraceptives". The age and the number of living children with current use are fairly correlated and highly significant ($P \leq .001$). The correlation between current users and intention to use contraceptive in future is fairly high ($r = .53$) and significant ($P \leq .001$). On further examination we find that income from trade skills is also significantly ($P \leq .05$) correlated with intention to use contraceptive in future.

Table 24

The Correlation Co-Efficients of some Selected Variables with Current and Ever Use of Contraceptive and Intention for Future Use of the Currently Married Trained Women 1979

Independent Variables	Dependent Variables	Correlation Co-Efficients
Number of surviving children	Current use	.36 ***
Involvement in production workshop	Current use	.06 NS
Age	Ever use	.31 ***
Number of living children	Intention for future contraceptive use	.10 *
Income from trade skills	-do-	0.08 *
Current use	-do-	.53 ***

Note : * Significant at $P \leq .05$

** Significant at $P \leq .01$

*** Significant at $P \leq .001$

NS Not Significant at $P \leq .05$

REPRODUCTIVE BEHAVIOUR

In respect of reproductive behaviour, only two fertility measures are considered for correlation. One is ever born children and the other is the current fertility defined as live births to the trained women of 15-49 years, during the last 12 months preceding the follow-up survey (1979). Both are important dependent variables to describe the reproductive behaviour of the trained women. Table 25 depicts a picture of the relationship between several predictors and reproductive behaviour.

Among the highly correlated variables with ever-born children are the age at first marriage, duration of marriage and ever use of contraceptive, their correlation co-efficients being .37, .19 and .18 respectively with varying level of statistical significance ranging from .01 to .001. Other predictors such as educational level and work besides house-hold tasks have statistically insignificant correlations.

The current fertility referred to here is relating to all currently married trained women aged 15-44 years. The correlation between the trained women's involvement in production workshop and current fertility is moderate ($r=.15$) and statistically significant at .01 level. While the work besides house-hold work and current fertility have statistically insignificant correlation. However, the correlation ($r=-.04$) shows some depressing trend.

Table 25

Correlation Co-Efficients of some Selected Predictors with Children Ever-Born and Current Fertility of Currently Married Trained Women, 1979.

Predictors	Dependent Variables	Correlation Co-Efficients (N=257)
Age at first marriage	Ever born children	0.37 ***
Ever use of Contraceptive	Ever born children	0.18 **
Duration of marriage	Ever born children	.19 **
Surviving children	Current fertility	— .35 ***
Work besides house-hold work	Current fertility	— 0.04 NS
Age	Ever born children	.72 ***
Family Planning knowledge	Current fertility	— 0.11 *
Involvement in production workshop	Current fertility	— 0.15 **

Note : *** Significant at $P \leq .001$

** Significant at $P \leq .01$

* Significant at $P \leq .05$

NS Not significant at $P \leq .05$

The trained women's knowledge of family planning has, however statistically significant ($P \leq .05$), but negative correlation (-0.11) with the current fertility. This implies that increase in family planning knowledge tends to have depressing fertility trend.

SUM UP

In our bivariate analysis, we have studied simply the relationship of a set of predictors with a number of dependent variables, keeping in mind our hypotheses and research questions. It appears from the cross classifications and correlation analyses that with regard to income from trades, involvement in production workshop, work besides household work, number of trades known and trained women's educational level upto primary and above appear to be the strong predictors.

With regard to intention to use contraceptive in the future, number of living children appears to be predictor; and so also the income from trade skills. The number of ever born children which reflects both past and current fertility appears to be very highly correlated with the number of living children. Age at first marriage and current use of contraceptive appears to be highly correlated to the number of children ever born. The trained women's involvement in production workshop has also somewhat moderate correlation with current fertility. Our analysis also shows that involvement in production workshop has statistically significant ($P \leq .05$) correlation ($r=-.15$) with current fertility and demonstrates some depressing trend in fertility.

Multivariate Analysis

To recapitulate, in our bivariate analysis, we have identified several predictors that have significantly high correlations with income from trades, contraceptive practice, current fertility and children ever born. The significantly high correlated factors have, in fact, set the stage for multivariate analysis.

Our interest lies in knowing the relative contribution to each of the predicated variables by a set of factors. In the choice of the factors, we are guided by our questions and hypotheses that we have raised in Chapter I.

In order to observe the relative contribution to the dependent variables, our optimum analytical model is the multiple regression analysis which enables us to bring into the model a number of factors that we may consider relevant for testing hypotheses. The particular regression model which we shall pursue is an additive one and briefly discussed below ;

$$Y = BO + B_1X_1 + B_2X_2 + B_3X_3 + \dots + B_kX_k + E$$

where,

"Y" is a dependent variable

$BO, B_1, B_2, B_3 \dots B_k$ are the regression co-efficients to be estimated.

$X_1, X_2, X_3, \dots X_k$ are the independent variables in the model.

"E" is the error or residual difference between the observed response Y and the true average response U_y . (1)

With this multiple regression model, we would try to work out an equation that might indicate how scores on the factors could be weighted and summed up to obtain the best possible prediction on the dependent variables. In the course of our investigation we will not only focus on overall prediction of the dependent variables by a set of predictors, but also see their relationship. This will enable us to ascertain the compounding effects of the factors themselves.

While presenting the multiple regression results, we use several statistics. A description of these statistics at this stage seems to be in order for proper understanding of our analysis that follows.

- (1) True average response $U_y/X_1, X_2 \dots X_k$; Kleimbum and Kupper ; p. 136.

In order to assess the relative importance of the predictors, two statistics are essentially required. These are R^2 and beta co-efficient. R^2 is a co-efficient of determination, meaning how much of the variances of the dependent variable(s) explained by the predictor(s). As we keep on entering the factors in the model, we also see how much we gain in the R^2 and whether this gain is statistically significant. We measure the significance of R^2 by the overall F test and partial F test. The other important statistics 'beta' referred to above to describe the dependent variables after adjusting the effects of all other predictors in the model. In our multivariable regression model, we will use partial F relating to each factor to show the relative importance after making necessary adjustment for the preceding factors. The partial F test will be used to eliminate the variable which is of no help in predicting the dependent variable and thus enabling us to reduce the set of possible independent variables to a neconomical set of important predictors.

Since our purpose of multiple regression is to make prediction, it is important to see the prediction accuracy by examining the variances unexplained ($1-R^2$) by the independent variables. Appropriate statistics we use in our analysis is the standard error of the estimate (SEE) which is the square root of some of the residual variances of each "y" observation divided by $N-K-1$. (2). This standard error of estimate is the average error in predicting our dependent variable(s) from the regression equation which we discuss below.

INCOME FROM TRADES

Our interest lines in knowing the contribution of several predictors to our predicted variable, namely "income from trade

$$(2) \text{ SEE} = \sqrt{\frac{\sum (Y - \hat{Y})^2}{N-K-1}}$$

$$= \sqrt{\frac{\text{ss residual}}{N-K-1}}$$

where,

N is the sample size, K is the number of independent variables.

skills". In our bivariate analysis, we have already observed a significantly high correlation between this and several predictors, namely, number of trades known, work besides household work and involvement in production workshop. We, however, do not know the joint effect of all these variable nor do we know the effect of one predictor holding the other two constant. In the discussion that follows, we will show both the overall effects and individual contribution of the predictors to the explanation of variances, trained women's income from the trades.

One of the statistical measures of considering the total effect of the independent variable upon the dependent variable is to examine the explained variances (R^2) and to measure the significance by F test. The above mentioned three predictors were fitted into a multiple regression model and the results are presented in Table 26. The data show that the gains in R^2 adjusted and unadjusted R^2 by adding "work besides household work" and "involvement in production workshop" are : .0604 and .0083 respectively. All three predictors together have explained 31% variances. Our hypothesis is that both the income from trade skills and number of trades known are positively correlated. The adjusted R^2 between these two variables is only .24, and by adding two other variables, namely, "work besides the household work" and "involvement in production workshop", there is a linear increase in adjusted R^2 to .31; and this increment is statistically significant at .01 level.

The overall F test shows that the calculated F ratio is much above the specified value of $\alpha = .01$ implying that these independent variables taken together contribute significantly to the prediction of the income from trades that our trained women have earned as a result of their exposure to the programme.

Our further examination of the data on individual level adjusted R^2 reveals that each of the predictors alone without the effect of the other has significant explanatory power. For example, the

work besides the household work, neglecting the effect as "number of trades known" is found to be significant at .01 level. While the R^2 of the predictor "involvement in production workshop" neglecting the effect of two preceding predictors is also significant at .05 level.

Table 26

Proportion of Total Variances in Income From Trade Skills Explained by a Set of Predictors.

Predictors (X,s)	Unadjusted R^2	Adjusted R^2	Gain in R^2	Partial F
Number of trade known	.2407	.2392	.2392	178.79 **
Work besides household work	.2994	.2996	.0604	44.12 **
Involvement in production workshop	.3119	.3079	.0083	8.57 *
All variables together	.3119	.3079	—	77.98 **

Note : ** Significant at $< .01$

* Significant at $< .05$

Thus, it is clear that the addition of these predictors into the model improves significantly the prediction of variability of "income from the trade skills".

The multiple regression model that we have tested by overall F test and partial F test supports that the number of trade skills known, work besides the household work and involvement in production workshop significantly contribute towards prediction about our trained women's income from the vocational trades.

Our next question is how far the above prediction is accurate. To answer this question we have estimated standard error (SEE) which is the Standard deviation of the actual Y values from the

predicted Y values about the regression line (Kerlinger and Pedhazur ; p66). It is an error term used in our F test.

By applying the data to our regression model, we got the standard error of our estimate as 1.0. This means that in our sample approximately 66% of cases will fall between ± 1 SEE unit from our predicted values about the regression line implying a fair amount of accuracy in our prediction equation referred to above.

We have already seen that the proportion of variances (R^2) of trade income explained by three predictors in our model is statistically significant and meaningful and that it tends to support our theoretical model. In this connection, one question still, however, remains to be answered whether the predictors themselves have the interaction effect to mislead our conclusion. If so, is the interaction significant? In order to answer this question, we do the following F test for overall interaction:

$$F = \frac{(R^2F - R^2L)/DF_1}{(1 - R^2F)/df_2}$$

where, R^2F represents the variances explained by three independent variables in the model: R^2L represents variances explained by the preceding two variables except the last variable in the model.

df_1 represents the degree of freedom of the predictors, except the last one in the model;

df_2 represents the degree of freedom of all the predictors in the model.

$$\text{Adjusted } R^2 = R^2 - \frac{(K-1)}{(N-K-1)}(1-R^2)$$

where,

K is the number of predictor,

N is the sample size; and R^2 unadjusted is the

unstandardized R^2 .

The result shows that F ratio of .012 is highly significant. This has further reinforced our theoretical understanding of the model which postulates that the trained women's knowledge of trade skills, some diversification of the work besides the household task and involvement in production workshop are significantly important predictors for raising their level of income from the trade skills.

RELATIVE IMPORTANCE OF TRADES

From the foregoing analysis we have identified variables that are significantly related to income from trades. We have also observed their relative strength in explaining the variances of the income from the trades. We, however, do not know which of the trades contributes more than the others to this income. The present analysis will address this question.

A few words about the data for this analysis seems to be in order. For paucity of the relevant first follow-up data, we use the trade skills related income data collected in 1981, at the time of our retrospective survey (RS). Though our retrospective survey was intended to reconstruct the baseline situation of the trained women, keeping in view our research interest, we collected income data for each trade. It may be recalled that training on the following trades are generally given in the women's vocational centres:

TRADES

Sewing, embroidery, lace and wollen goods, cane and bamboo made goods Jute goods and carpet knitting weaving poultry raising clay made things.

We have ascertained from the income data on each trade whether the above trades are used for producing goods/materials for domestic consumption or for income earning. The amounts indicated against income from each of the trades are added together to get the total income from the trades. In the present

analysis we would like to know which of the trades has more predictive power in explaining the variances (R^2) of the income from trades.

The above mentioned seven trades are introduced as predictors in our multiple regression additive model ; and the results are presented in the following table.

Table 27

Proportion of Total Variances of Income from Trades Explained by the Different Trade skills, 1981

Trades	Unadjusted R^2	Adjusted R^2	Gain in R^2	Partial F
Cane and Bamboo Goods	·004	·041	·041	15.3 ***
Jute Goods and Carpet Knitting	·075	·074	·033	7.5 **
Poultry Raising	·090	·084	·010	7.4 **
Embroidery, Lace and Woolen Goods	·100	·093	·009	5.7 **
Clay Made Goods	·104	·095	·002	1.9 Ns
Weaving	·105	·095	—	·34 Ns
Sewing	·105	·095	—	·12 Ns
All Variables Together	·105	·092	—	9.6 **

*** Significant at $P < .01$; ** Significant at $P < .05$; Ns not significant at .05.

The data in the above table show that all the trades taken together explain 9.2% of the variances of income from the trade skills. The overall F ratio of these trades is statistically significant at .01. Our examination of the data on the individual

level adjusted R^2 shows that cane and bamboo goods are highly statistically significant. The partial F ratio of this trade is much more than any other trades.

The data also show that trades like jute goods and carpet knitting, poultry raising, embroidery, lace and woolen goods are also significantly important predictors in explaining the variances of the income from trade skills. Each of these partial F shows that each of the trades has significant explanatory power in explaining the variances of income from trades after taking into account the effect of their preceding trades. The trades which did not contribute significantly in explaining the variances of income from trades are weaving,* clay made goods and sewing.

From the above analysis it is clear that the significantly important trades in explaining the variances of income from trades are cane and bamboo made goods, jute goods and carpet knitting, poultry raising, and embroidery, lace and woolen goods. These trades have significant predictive power. The standard error of estimate (SEE) which measures the prediction accuracy shows that the dispers on from the regression line is almost 1.0. This means that approximately 66% of cases fall between ± 1 SEE unit from our predicted values about the regression line on income from trades implying a fair amount of accuracy in our overall prediction equation.

We have already observed that the proportion of variances of monthly income from trades explained by four trades are statistically significant and that we can still contain them in our model. However, the question still remains whether there is any interaction among these predictor variables to mislead our conclusion. In order to answer this question, we test the interaction effect. The overall F ratio for interaction is .013 which shows that there is little interaction among the predictors that are found to be statistically significant.

*Only a few production workshops have weaving.

One of the statistical measures to describe the relative strength of the independent variables holding the effect of other variables in the model is partial B (beta). Out of the seven trades entered into our model, the relative strength of the following trades has been statistically significant.

Table 28

Rank Order of the Trades in Terms of Relative Importance of Income from Trades

Trades	Partial B	F
Jute goods and Carpet Knitting	.16	11.2 **
Poultry Raising	.11	5.4 **
Embroidery Lace and Woolen Works	.11	4.2 *
Cane and Bamboo Goods	.10	2.8 *

** Significant at $P \leq .01$; * Significant at $P \leq .05$.

CONTRACEPTIVE BEHAVIOUR

Our next concern is to identify the best predictors to explain variances in the use status of contraceptive among our currently married trained women. The reason for studying the currently married trained women with respect to contraceptive practice needs some comments here. In Bangladeshi culture, unmarried, widowed and separated hardly use contraceptive outside the marital union. In order to eliminate the chance of any compounding effect of other groups of respondents, we have confined ourselves to the currently married trained women in accordance with our following theoretical assumption.

The number of living children, desire for the ideal number of children and age significantly explain the contraceptive behaviour of the currently married trained women in rural Bangladesh. Here also, we are using the additive model of the multiple regression for testing the combined and separate effect of the above three predictors.

In our bivariate analysis, we have observed a significantly moderate correlation between contraceptive practice and each of

the above predictors. It is, however, not known whether in their individual relationship, there is any compounding effect and whether their combined effect is significant enough to support our theoretical assumption. However, the underlying situation is explained by the results of regression equation shown in Table 29.

Table 29

The Proportion of Total Variance in Contraceptive Behaviour Explained by a Set of Predictors

Predictors	Unadjusted R^2	Adjusted R^2	Change R^2	Partial F
Number of living children	0.10936	.10587	.10587	3.9 *
Ideal number of children	0.12142	.12124	.01554	3.5 *
Age of the respondent	0.12276	.12228	.00104	.461 Ns
All predictors together	0.12276	.11236	—	Overall F 11.8 **

** Significant at $P < .01$; * Significant at $P < .05$.

NS not significant at $P < .05$.

The above data show that gains in R^2 adjusted after adding the predictors "ideal number of children and age of the respondent" are respectively .01533 and .00882 only. All predictors in the model together explained 11.2% of the variances. We have assumed that the number of living children is an important determinant for use or non-use of contraceptive by the trained women. R^2 adjusted shows only 10.5% of the variances explained by this variables. By adding two other predictors in the model, our gain in R^2 is very little.

The overall F test shows that the calculated F value is much above the specified value of $\alpha = .05$ implying that these predictors together contributed significantly to the prediction of the variances in the dependent variable which is, in this case, contra-

ceptive behaviour. On our examination of the data in the individual level R^2 , we find that two of the independent variables are found to be significant at .05. While one predictor, namely, age of the respondent is not significant. We may, therefore, conclude at this stage of our analysis that age of the respondent is not a significantly important determinant of the contraceptive behaviour.

With the exclusion of age, our regression model contains two predictors, namely, number of living children, and ideal number of children. Our next research question is how far the explanatory power of the two predictors are accurate. The standard error of estimate which indicates dispersion around the regression line is only 0.08, that is less than ± 1 standard deviation from the regression line. The smaller the standard error of estimate, the better the prediction accuracy. In other words, the variances explained (R^2) by the above two predictors are reasonably accurate. This leads us to conclude that the number of living children and the ideal number of children are significantly important determinants of the contraceptive behaviour of our trained women.

Our next question is: which of the predictors is better related to the contraceptive behaviour? Standardized regression co-efficient 'beta' values are, in this case, appropriate measures, to describe the predictors' linear relationship with the dependent variable. With respect to contraceptive behaviour, the number of living children ($\text{beta} = .36$) is more linearly related than the ideal of children ($\text{beta} = -.11$).

Analysis of Covariance

In this section, we introduce the technique of covariance in order to ascertain whether the trained women's background variables and the programme variables influence their reproductive behaviour.

The reproductive behaviour is measured by the number of children ever born. This metric variable is introduced in the present analysis as our dependent variable. Because of our special research interest in the reproductive behaviour of the trained

women, our sample base lies in the currently married trained women, who are only 257 in our total sample of 520 in the follow-up year 1979. Therefore, the discussion that follows is related to the currently married trained women rather than all the trained women irrespective of their marital status.

The specific objectives of the present analysis are mainly three :

- 1.) To determine the magnitude of the effects of several factors or independent variables such as involvement in production workshop, annual family income and contraceptive use status on the reproductive behaviour after controlling for the effect of their educational level and age at first marriage.
- 2.) To examine the relative importance of the factors in explaining the variances in the dependent variable ; and
- 3.) To what extent interaction exists among the factors and the covariates ?

Because of the aforesaid research interest, the present analysis is restricted to the following variables :

- a) Children ever born
- b) Annual family income
- c) Involvement in the production workshop
- d) Contraceptive use status
- e) Educational level
- f) Age at first marriage
- g) Duration of marriage

Our belief is that the currently married trained women's annual family income, their involvement in the production workshop, contraceptive practice, educational level, and age at marriage might have influenced their reproductive behaviour. In the present analysis, annual family income, involvement in the production workshop and contraceptive practice are used as factors ; while the educational level and age at first marriage are used as the covariates or control variables. The factors are independent vari-

ables and considered to be categorical. Of the three factors, one variable, namely, annual family income is the interval level variable. But to meet the criteria, we have considered it as categorical variable by dichotomising its value into the above median and median and below. The following are the covariates and factors with their categories :

Covariates :

Educational level

Age at first marriage

Factors :

Duration of Marriage

Annual family income :

Above median

Median and below (Median= Tk. 3900)

Involvement in production workshop :

Involved

Not involved

Use Status of contraceptive

Never use

Ever use

The principal method of analysis used here is the hierarchical analysis of covariance with multiple classification analysis of the factors. The covariates are introduced first because we are interested in their joint effect and individual effect on the reproductive behaviour as control variables

The factors chosen for the model are based on some theoretical belief that the currently married trained women who come of the families of two different income levels may differ in their reproductive behaviour. It is assumed that their involvement or uninvolved in the production workshop and use or non-use of contraceptive may as well influence their reproductive behaviour. The categories of three factors may have differential explanatory power.

Figure 1* displays the mean parity of the trained women (directly exposed) and the breakdown of the category means of the factors

introduced in the model. The data in the figure are unadjusted raw scores and should be viewed with utmost caution. These data show that neither involvement in the production workshop nor the higher family income level (Tk. 3900 and above) show any substantial lower mean parity than those who are not involved in the production workshop and in the low income category (below Tk. 3900). Even contrary to one's expectation, the data also show that the ever users. With regard to this difference in fertility by contraceptive use status, we cannot draw any meaningful conclusion unless age-parity and age-contraceptive practice relationship are taken into consideration. Various studies in Bangladesh (BFS 1976 ; BCPS 1979 ; and 1981) show that the younger women with low parity tend to use contraceptive less than their elders with high parity.

The findings of this study also bear this out, For example, 54% of our trained women are below 25 years ; and 20% of them are without any children and probably recently married. Most of these women may not use contraceptive (see Table 3, p 52), and have low parity (see Table 9, p 60) It is but natural that these young women, most of whom never use contraceptive, would have lower parity than the women with higher age group. Our covariance analysis to which we turn now will show the extent to which the variance of the reproductive behaviour of the trained women are explained by the contraceptive use status after controlling for the effect of preceding factors and the covariates, particularly age at marriage which significantly influences both contraceptive and reproductive behaviour of the women in the sub-continental countries.

Our hierarchical analysis of covariance of reproductive behaviour measured in terms of the ever born children of currently married trained women by the factors referred to above, after controlling for the effects of the covariates displayed in Table 30 shows the contribution to the degree of freedom, and the sum of squares neglecting the effect of the preceding variable

* See Appendix F.

(s). These two quantities are used to measure the mean square for the variable. The ratio of the mean square of a variable to the residual mean square after introducing all variables gives an F ratio for the net effect of the variable(s) on the reproductive behaviour. The ratio of the mean squares of the variable(s) to the total sum of square gives a partial R^2 indicating the variance of the reproductive behaviour explained by the variables. Accumulation of partial R^2 gives a multiple R^2 explaining the variances of the reproductive behaviour by taking into consideration the effect of all the independent variables at each stage. The data in the table show that the contribution of some factors and covariates to sum of squares and their mean squares are not significant, indicating that their effect upon the reproductive behaviour is negligible. For example, annual family income, involvement in production workshop and educational level have no significant influence upon the reproductive behaviour of the currently married trained women. The results, however, show that contraceptive use and age at first marriage are important determinants of their reproductive behaviour. Total sum of squares of these two determinants are together 72.0 out of the total of 86.22 for all the variables explained.

On examination of the data, we find that 2-way and 3-way interaction effects of the factors are not significant at .05 level. The absence of marked interaction and presence of non-linear component of relationship of our data discussed above presents the situation for multiple classification (MCA) analysis that follows :

MULTIPLE CLASSIFICATION ANALYSIS (MCA)

MCA allows for the analysis of the effects of categorical variables on an interval scale predicted variables based on the assumption that the effects of the independent variables to multiple regression using dummy variables. Unlike, the multiple regression, MCA does not have any formula for the standard error for the MCA co-efficients. While discussing MCA results, we use eta, beta and R^2 adjusted and several adjusted and unadjusted

co-efficients. Before analysing the results, a general discussion about these statistics seems to be in order.

Table 30

Hierarchical Covariance Analysis of the Effects of a Few Selected Factors and Covariates on the Reproductive Behaviour of the Currently Trained Women, 1979.

Variables List	D.F.	Contribution to the Total sum of Squares	Mean square	F	Significance Level
Covariates	2	26.52	13.26	6.88	.001
Age at first marriage	1	23.79	23.79	12.35	.001
Educational level	1	2.74	2.74	1.42	.235
Main effects	23	50.92	16.97	8.80	.001
Annual family income	1	.34	.34	.17	.676
Involvement in production worksho.	1	2.40	2.40	1.24	.266
Contraceptive use status	1	58.19	48.19	25.00	.001
Variances Explained	9*	86.22	9.58	4.97	.001
Reisiduals	245	472.10	1.93	—	—
Total	254	558.32	2.20	—	—

The eta value is a measure for the simple bivariate relationship. The 'eta' square is equivalent to R^2 that explains the variances of the dependent variable by the predictors. Eta is associated with the unadjusted category of the factors.

The 'beta' statistics is a partial correlation ratio that is associated with the adjusted category effects of each factor (all categories combined). It can be viewed as a partial standardized regression co-efficient. While the eta and beta are predictor specific values, adjusted and unadjusted co-efficients are category specific statistics. The adjusted and unadjusted means are devia-

* Including 2-way and 3-way interactions.

tions from the grand means. The effect of each factor diminishes as we adjusted for other factor(s) which suggests that the factors themselves are related. This relationship, however, varies from factor to factor. In addition to the above values, multiple R and R^2 are also available. The multiple R is a correlation between the dependent variable and all factors, covariates and factor by factor interaction terms. The multiple R^2 explain variances of the dependent variables by factors and covariates and the factor by factor interaction terms.

From Table 31, we see a picture of the proportion of deviation of the category means from the grand mean of 2.18 of the ever born children. We also notice that the effect of each category diminishes as we adjust for other factors. Thus, we find that of the three factors introduced in the model, the categories of the contraceptive use status have the highest deviations and contribute much to the explained variances. Eta and beta of this factor are the highest of all other factors introduced in the model. The correlations of annual family income and involvement in production workshop with parity are very low. However, adjusted co-efficients of those who are involved in the production workshop indicates fewer births than those who are not involved in the production workshop.

The proportion of variances explained (R^2) by three factors and two covariates is .14 which is statistically significant ($P \leq .01$). From the covariance analysis, we have observed that age at marriage and contraceptive practice and significantly important determinants of reproductive behaviour of the currently married trained women. Two other important determinants that have strongly influenced reproductive behaviour are family planning attitude and duration of marriage as evident from the data in Table 1 of Appendix-F.

CURRENT FERTILITY

In this section, we will show which of the factors has contributed most to influence the current fertility level of the currently married trained women. As stated earlier, that the current fertility

Table 31

Multiple Classification Analysis of Ever Born Children of the Currently Married Trained Women by Selected Factors 1979.

Ever Born Children Grand Mean = 2.18	N	Unadjusted Dev'n Beta	Adjusted for Independents Dev'n Beta	Adjusted for Independents and Covariates Dev'n Beta
Variable + Category				
Annual Family Income				
Median and below	142	-.03	-.02	-.03
Above Median	113	.04 .02	.02 .01	.02 .02
Involvement in Workshop :				
Involved	137	-.13	-.08	-.04
Not involved	118	.15 0.10	.09 .06	.03 .03
Contraceptive Use :				
Never Use	137	-.042	-.041	-.41
Ever Use	118	.49 .30	.47 .30	.047 .30
Multiple R^2	—	—	0.036	0.14
Multiple R	—	—	0.310	0.38

is defined as live births to our currently married women during the last twelve months preceding the first follow-up survey (1979). Our descriptive analysis reveals that there were only 37 births in the last twelve months of this survey with a mean of .144, which appears to be very low. It is, therefore, of great research interest to see which of the factors has contributed most to influence their most recent reproductive behaviour.

In the present analysis, our interest lies in knowing the contribution of contraceptive behaviour, work status and annual family income to explain the variance in the most recent reproductive behaviour of the currently married trained women after controlling for the effects of their age and ideal number of children. Our optimum analytical technique is the analysis of covariance in which the most recent reproductive behaviour, that is current fertility level

is our dependent variable. The contraceptive behaviour, work status, annual family income are factors, while the age and ideal number of children are used as covariates.

The reason for introducing the annual income as a factor is that we have a theoretical belief that women of low income group tend to have more births than those of the high income group. The extent to which this assumption is true may be seen from Table 32.

Table 32

Current Fertility Level of the Currently Married Women by Their Annual Family Income, 1979.

Income Level	Mean Fertility
Low *(Less than Tk. 3900)	.16 (N=177)
High (More than Tk. 3900)	.11 (N=80)

The data in Figure 2, also show that those who practices contraceptive have lower fertility than those who do not. And, among the current users, those who are engaged in income generating activities, have lower current fertility than those who are not practicing contraceptives. In spite of this revealing information the extent to which our theoretical belief is correct or how far such variation is statistically significant after adjusting/controlling for the effects of all other variables in the model is not yet clear. The present analysis is, therefore, intended to clarify this.

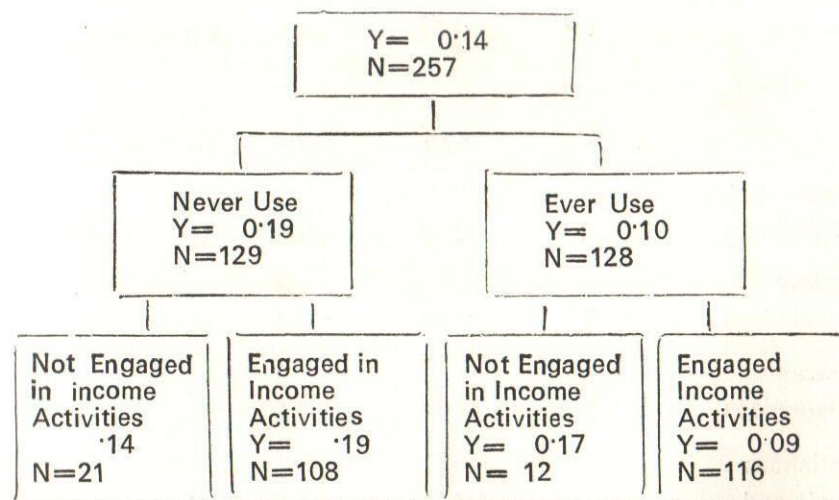
The data in Table 33 show that the overall main effects consisting of the contribution of the factors and the covariates referred to above, is statistically significant at .05 level. Of the factors, the contribution of contraceptive behaviour to the main effect, though very modest, is statistically significant at .05 level. Of the covariates age of the respondent appears to have statistically significant ($P < .05$) contribution to the main effects

MULTIPLE CLASSIFICATION ANALYSIS

The data in Table 33 further show that the both 2-way and 3-way interaction effects of the factors are not significant indicating that the factors themselves have non-linear components. This requires that for better explanation of the variation in the reproductive behaviour of the currently married trained women, we should use multiple classification analysis (MCA) of the factors.

Figure 2

Current Fertility of the Currently Married Trained Women by Contraceptive Practice and Engagement in Income Activities, 1979.



Note : These are unadjusted scores.

Table 33

Hierarchical Analysis of Covariance of the Effects of a Few Selected Factors and Covariates on Current Fertility of the Currently Married Trained Women, 1979.

Variables	DF	Contribution to the Total Sum of Square	Mean Square	F	Significant Level
Main Effects	5	1.338	.268	2.2	.05
Contraceptive Behaviour	1	0.459	.459	3.7	.05
Engaged in Income Activities	1	.001	.001	0.01	.91
Annual Family Income	1	.147	1.47	1.2	.27
Covariates					
Age	1	.475	.475	3.88	.05
Ideal number of Children	1	.258	.258	2.10	.15
2-way interactions	3	.136	.045	.37	.77
3-way interactions	2	.004	.004	.03	.85
Variances Explained	9	1.479	.164	1.34	.21
Residuals	247	30.194	.122	—	—
Total	256	31.673	.124	—	—

Table 34

MCA of Current Fertility Level of the Currently Married Trained Women by a Few Selected Factors 1979

Grand Mean=.14 Factors + Categories	N	Deviation from the Grand Mean					
		Unadjusted Dev'n Beta		Adjusted for Factors Dev'n Beta		Adjusted for Factors + Covariables Dev'n Beta	
Contraceptive Behaviour :							
Never Use	129	0.04	—	0.04	—	0.04	—
Ever Use	128	—0.04	.12	—0.04	.13	—0.04	.11
Work Status :							
Not engaged	33	0.01	—	.02	—	.01	—
Engaged	244	—0.001	.01	.001	.02	.00	.01
Annual Family Income :							
Low	177	.01	—	0.02	—	.02	—
High	80	—0.03	.06	—0.04	.04	—0.03	.07
R ²	—	—	—	—	0.02	—	.04
R	—	—	—	—	0.13	—	.20

Beta statistics show that the deviation from the grand mean as a result of the contribution of contraceptive behaviour is .13. Those who have ever used contraceptives, have demonstrated low level of current fertility compared to the never users by .04. Whereas, the beta values of income and work status with current fertility, after adjusting the effect of contraceptive behaviour show a very weak correlation and do not lend support to our theoretical belief. Contraceptives behaviour appears to be a potentially important factor to mould the most recent reproductive behaviour of the trained women.

Table 35

Rank Order of Association of Some Selected Predictors with Current Fertility of the Currently Married Trained Women, 1979.

Predictors	Beta
Age	—·12*
Contraceptive Behaviour	—·10*
Ideal Number of Children	·09
Age at First Marriage	·06
Annual Family Income	—·02

* Significance at $P < .05$.

One of the statistical measures for the rank orders of the predictors is the beta that indicates the relative strength of association with the predicted variable which is, in this case, the current fertility of the currently married trained women. The data in Table 35 show the relative strength of the predictors in the model.

We have already observed in our analysis of covariance that age, and contraceptive behaviour are statistically significant at .05 level and that other predictors are not significant ($P < .05$). The results of the multiple regression analysis (see Table 35) show that the correlation between age and current fertility is higher than other variables in the model. This is followed by beta of contraceptive use. The beta values of both the variables show negative trend which indicates a somewhat depressing effect upon current fertility that is theoretically plausible.

IDEAL NUMBER OF CHILDREN

We attempt to find out the potential predictors that may have significant association with an attitudinal variable, namely ideal number of children. Our assumption is that contra-

ceptive behaviour, age at marriage, number of surviving children, annual family income and age of the currently married, trained women may significantly influence their attitude towards ideal number of children. In order to verify this theoretical assumption, we have an additive model of multiple regression to observe the relative strength of association of several predictors with the predicted variable which is, in this case, the ideal number of children.

The beta statistics show that contraceptive behaviour has relatively more contributions than other predictors in the model and that this contribution is statistically significant at .05 level. The individual contribution of other predictors is low and highly insignificant ($P > .05$).

From the above, we may therefore, conclude that except for the contraceptive behaviour, the other variables in the model have individually very weak strength of association with the currently married trained women's attitude towards ideal number of children.

SUM UP

From our bivariate and multivariate analyses of the data concerning the trained women, we are now in a position to recapitulate the most revealing features regarding their income from trades, contraceptive and reproductive behaviour.

INCOME FROM TRADES

The trained women's level of income has been increased as a result of their exposure to the vocational training which has undoubtedly expanded their horizon of knowledge in trade skills. Those women who know more trades are likely to earn more income than those who know fewer trades. It is also observed that the educational level is an important predictor for increasing knowledge about trade skills. Those who know more trade skills are involved in production workshop; and those who are involved

in production workshop earn more income from trade than those who work at home. Among those who are involved in production workshop, educated women tend to be in the higher income scale (Tk. 100-199) than the illiterates. Another significant observation is that those who are engaged in household work alone tend to earn less than those who have diversified their activities beyond the household work.

Sewing, embroidery, cane and bamboo made goods, jute goods and carpet knitting, weaving, poultry raising and clay made things were the trades in which specific training for skills development was given at the women's vocational training centres. In respect of relative contribution to trade income, handicrafts including cane and bamboo made goods, jute goods and carpet knitting are very important followed by poultry raising and embroidery works. Clay made goods and sewing appear to be the least important trades. However, weaving may be potentially important.

CONTRACEPTIVE BEHAVIOUR

Our data show that number of living children and ideal number of children are significantly important predictors for contraceptive behaviour. To be explicit, those women who have a few living children and who have set an ideal number of children for them, tend to use contraceptive more than those who do not have a few living children and who do not have an ideal number of children. Work other than household work and income from trade skills do not seem to have any influence upon the contraceptive behaviour. Age at first marriage and current use of contraceptive appear to be strongly related to intention to use contraceptive in future.

REPRODUCTIVE BEHAVIOUR

Age at first marriage, duration of marriage and contraceptive behaviour appear to be strong predictors for the aggregate repro-

ductive behaviour ; while educational level and annual family income do not have any significant ($P > .05$) association with the overall reproductive behaviour. Involvement in production workshop is significantly negatively related to recent fertility ($r = -.15$) which is measured in terms of live births last year. Age and contraceptive behaviour also appear to have significant ($P < .05$) contribution to the explanation of the variances of current fertility. However, age of the women is a better predictor than the contraceptive behaviour. Our data also show that women of the high income families tend to have some depressing trend in current fertility compared to the low income families.

For the ideal number of children, contraceptive behaviour appears to be a better predictor than age, age at marriage and number of living children, and annual family income.

CHAPTER VIII

Women's Programme impact on Village Women's Contraceptive and Reproductive Behaviour

Social programmes that are designed to use a particular group as catalyst for the benefit of the general population often do not give the expected results either due to unfavourable social conditions or lack of commitment to its social responsibilities or both. In recent years, several experimental projects undertaken in Bangladesh to bring about some specific social and behavioural changes among the underlying population bear this out. The chapter is intended to throw some light by way of examining the impact of the women's vocational programme that is designed to train a group of women in trade skills and family planning in rural Bangladesh.

One of the explicit assumptions of the programme is that as a result of motivational effort of the trained women (directly exposed), the fellow women (indirectly exposed) in their respective villages will be motivated to practice contraception much more than the women who are totally unexposed to such a programme. It was thought that the programme would bring about a significant difference between the indirectly exposed and unexposed women in respect to their contraceptive and reproductive behaviour (measured in terms of children ever born and live birth during the twelve months preceding the survey). Contrary to this expectation, some interesting data collected for this study show that even after three years of programme maturity, there has been little diffusion effect in the programme villages. In other words, both indirectly exposed and unexposed women look similar in their responses and do not differ much in respect to contraceptive and reproductive behaviour.

One of which is the "Use of Women's Vocational Training for Population Activities". As we have noted that the selected trainees were exposed to several trade skills and Family planning knowledge for six months during which they were told to assume some motivational works for family planning after their training period was over. The extent to which this function was done and the underlying female population (indirectly exposed) were benefitted from them is the question to which this study has addressed itself.

The design of the programme is based on the innovative ideas of several analysts and international organizations (Germain, 1975 ; Dixon, 1977 ; World Bank, 1974) that functional education combined with family planning will be doubly advantageous for the women being directly exposed to the programme as such training would likely to create avenues for income earning and motivate themselves for small family ; and at the same time, they might also benefit the fellow women in the community.

A built-in target is well-articulated in the project document envisaging that each trained woman would motivate at least, 15 village women for contraceptive practice. And as a result, the programme area is likely to have significant increase in prevalence rate and decline in fertility. The expectation built into this project is not without any empirical basis. In Korea, for instance, rural women are motivated by the members of the mothers' clubs so much so that they are playing a significant role in raising contraceptive prevalence rate and reducing societal fertility.

The trained women as catalytic agents are expected to motivate the fellow women in the community on intimate matters like family planning. However, this expectation, as we say, is not always true for various reasons—some are administrative and some are socio-cultural in nature.

Method and Materials

Three groups of women were studied for this study. There were experimental group (in directly exposed), indirect experi-

mental group (indirectly exposed) and the control group (unexposed). The experimental group were the trained women who were assumed to be the catalysts. We have discussed them in previous chapters. In this chapter, we will consider only two groups of women, namely, the indirectly exposed and unexposed women for a fair comparison. The indirectly exposed women belong to the area where the trained women (directly exposed) or training centres are located. The unexposed or control group of women are those who live in the area where no trained women or training centres are located. Both the groups of women are untrained in the programme. The basic evaluation model for the untrained groups of women is discussed in chapter I (PP. 7 & 8).

Both the indirect experimental and control group of women were selected randomly through multi-stage sampling procedures from eight programme and four non-programme villages. Two separate household lists for both the selected programme and non-programme villages were prepared. From these two list of households-eight hundred from the programme and four hundred from the non-programme villages were respectively selected randomly. From among the selected households, only the currently married women aged 15—49 years were selected. Thus, in all, 625 women in the programme (indirect experimental) and 312 women in the non-programme (control) villages were identified and interviewed. Since no base line data were collected for this study this author utilized the Bangladesh fertility survey data (BFS, 1976) as the base data for both the experimental and control group for fair comparison between the base year (1976) and follow-up year (1979). The rationale for using the BFS data is that the data were collected about the same time when the women's training programme was started. Its rural sample (N=4930) was fairly large and drawn randomly following the multi-stage sampling procedure. Thus, it provides adequate information about the family planning knowledge, attitude and practice (KAP) and fertility of the women in Rural Bangladesh. †

BACKGROUND CHARACTERISTICS

With regard to these characteristics, there was little difference between the two groups of women except the total marital fertility rate (TMFR) as evident from the data in Tables 12 and 13 (see PP.65 and 66)

Findings

PROGRAMME VARIATION

Our interest was to know whether the programme women (Indirectly exposed) had any knowledge about the training centre, trained women or trade skills and whether as a result of the trained women's influence, they were motivated to practice contraception. The results of some questions asked in this connection are already presented in Table-14 (P-68) which shows a comparative scenario between the programme (exposed) and non-programme women (unexposed).

Our interest lies in the factors that account for the difference, if any, between the two groups regarding their knowledge, attitude, and practice (KAP) in family planning and reproductive behaviour. We have done both bivariate and multivariate analyses of several predictors on both the contraceptive and reproductive behaviour of these two groups of women.

BIVARIATE ANALYSIS

Zero order correlations of some variables which are considered to be relevant for this study show variation between the groups.

The data in Table 36 show that age and parity are strongly associated, but all other relationships measured appear to be moderate except the relationships between annual family income and parity and ideal gap between the first marriage and first issue. Educational

Table 36

Zero Order Correlations of some Selected Predictors

Variables	R	Indirectly exposed Significant level	R	Unexposed Significant level
Age and parity	·79	·001	·72	·001
Annual family income and parity	·04	NS*	·09	NS*
Ideal gap between 1st issue and 1st marriage	·03	NS*	·06	NS*
Age at marriage and parity	—·23	·001	—·11	·05
Family planning Attitude and practice	·20	·001	·25	·001
Education level and contraceptive practice	·18	·001	·23	·001
Educational level and knowledge in trade skills	·18	·001	·29	·001

* Not significant at ·05 level.

level appears to be significantly related to contraceptive practice and knowledge in trade skills of both the groups.

CROSS CLASSIFICATION :

We have also examined the relationships among the family planning KAP related variables. The hypothesis guiding this analysis is that there is a great deal of relationship between family planning knowledge (K) and attitude (A) and that family planning practice (p) of two groups of women is greatly influenced by this relationship. Various KAP related studies show that among these three variables, there is an unidirectional relationship which is schematically represented as follows.



In a recursive model, according to Rosenberg (P·57), three kinds of asymmetrical relationships are called for, which in the case of present example, are :

- (a) P by K = Direct relationship between knowledge and practice.
- (b) A by K = Direct relationship between knowledge and attitude.
- (c) P by A = Direct relationship between attitude and practice.

In the present analysis, our purpose is to see the extent to which contraceptive practice is influenced by two other variables, that is, whether the factor, namely, attitude towards family planning, introduced in the model has an intervening effect or control upon

the contraceptive behaviour or/and practice diminishes or reinforces after the test factor is introduced. To quote Rosenberg (P.-54) again, this test factor is a sort of consequence of the independent variable and a determinant of the dependent variable. Our interest lies in understanding the influence of family planning attitude upon the relationship between family planning knowledge and contraceptive behaviour.

We have defined "knowledge" as the number of methods known ; "Attitude" as supporting or not supporting family planning ; and "practice" as ever use or never use of contraceptive. The results of some cross classifications done for both the groups with 1 degree of freedom are briefly summarised below :

Before discussing the results, a few words about the statistics shown in Table 37 seem to be in order. Chi-square (X^2) as a measure of association between two or more variables is an

Table 37

Results of Cross Classification of KAP Related Variables of the Groups

Variables	Indirectly Exposed N=655	Unexposed N=312
P by K	$X^2=68$; $\phi=.34$; $P<.001$	$X^2=115$; $\phi=.81$; $P<.001$
A by K	$X^2=44$; $\phi=.26$; $P<.001$	$X^2=9$; $\phi=.18$; $P<.001$
P by A	$X^2=22$; $\phi=.20$; $P<.001$	$X^2=18$; $\phi=.25$; $P<.001$

inference on proportion. "Phi" statistics is a correlation to describe the strength of a bivariate relationship at certain specified level of statistical significance.

Thus, data in table 37 show that family planning practice and knowledge are more strongly associated among the unexposed than the indirectly exposed women. The data also show that other KAP related variables have somewhat higher association among the indirectly exposed than the unexposed women.

Having seen the two-way relationships of the family planning KAP related variables, let us now examine the relationships between family planning knowledge and practice after controlling for the effect of family planning attitude of both the groups. The results of two cross classifications of both the groups after controlling the effect of those who support family planning are briefly summarised in Table 38.

The above data show that the original relationship between Family Planning Knowledge and practice remains the same ($\phi=.34$) in the case of indirectly exposed group, but it significantly changes in the case of unexposed group ($\phi=.33$). In both the cases, it is evident that family planning attitude is not a good predictor for contraceptive behaviour. Cross classifying

Table 38

Results of Cross Classification of Family Planning practice by Family Planning Knowledge Controlling for the effect of those who supported family planning.

Groups	Results
Indirectly Exposed	$X^2=36$; Df 1 ; Partial $\phi=.34$; $P<.001$
Unexposed	$X^2=35$; Df 1 ; Partial $\phi=.33$; $P<.001$

the above KAP related variables by types of programme exposure we find that except in family planning knowledge, the indirectly exposed group does not significantly ($P<.05$) differ from the unexposed group in respect of attitude towards family planning and contraceptive practice. It is clear that programme achievement in terms of moulding the contraceptive behaviour of the women in the programme area is virtually insignificant as overwhelming majority in both the groups reported their support for family planning. But in reality, they do not practice it. In fact, relying on attitude without simultaneously testing it in relation to behaviour, one is led to trouble. Inkeles and Smith also hold similar opinion (PP. 252-53, 1982). After analysing data of a Jamaican study they concluded that :

"Of those who favoured family planning only 27% were actually using contraceptives. In that light, attitude seemed to be a poor predictor of behaviour. Looking further into the matter, of those who were not favourable to birth control, one discovered that only 8% practice contraceptives. In a relative way, therefore, attitude is here a good predictor"

REPRODUCTIVE BEHAVIOUR OF THE GROUPS

We are also interested to know the influence of several factors on the reproductive behaviour of the indirectly exposed

and unexposed women. The reproductive behaviour of these two groups is defined as the number of live births they have experienced since they entered into marital unions. In the Bangladeshi culture, fertility occurs almost exclusively within marriage. Hence the age at first marriage is considered to be an important fertility determinant. We also postulate that family planning knowledge leads to a positive attitude which, in turn, results in motivation to practice contraception. With this view, we have used the multiple regression additive model to analyse the data concerning both the groups. The results showing the variances of their reproductive behaviour explained (R^2) by the factors referred to above are presented in table 39.

The data show that all the factors, namely, age at marriage, contraceptive practice, family planning attitude and knowledge together explain only 7% of the variance (R^2) of the reproductive behaviour of the unexposed group. The additive effect of all the factors in explaining the variance of the reproductive behaviour of both the groups was found to be significant at .05 level. Early age at marriage and low level of contraceptive use are contributory factors to a high marital fertility of both the groups. The rank order of the predictors in terms of their association with reproductive behaviour of both the groups as shown in Table 40 also bears this out.

The beta statistics show that age at marriage is negatively associated with reproductive behaviour. This means that the lower the age at marriage, higher the marital fertility. Because of the lower marriage age of the indirectly exposed group compared to the unexposed group, their beta value is higher than that of the unexposed. (See Table—12). The contraceptive behaviour defined as ever use, though significant ($P \leq .05$), is not strong enough to have depressing effect upon fertility (parity). Family planning attitude and knowledge are found to have statistically significant relationship with reproductive behaviour of both the groups. Thus, both the programme (indirectly exposed) and non-programme (unexposed) women look similar.

Table 39

Explained Variances of Reproductive Behaviour of the Groups by a Few Selected Predictors.

Predictors	Indirectly exposed N=655		Predictors	Unexposed N=312	
	R^2	Partial F		R^2	Partial F
Age at marriage	.045	30.8*	Contraceptive behaviour	.035	11.5
Contraceptive behaviour	.063	12.4**	Age at marriage	.048	4.5*
Family Planning	.068	3.5	Family Planning Attitude	.051	.52
Family Planning Knowledge	.070	.11	Family Planning Knowledge	.053	.52
Over All	.070	11.4*	—	.053	4.2*

** Significant at $P < .01$; * Significant at $P \leq .05$

Our covariance analysis of the data concerning the reproductive behaviour of the groups show that three factors, namely, annual family income, family planning attitude, and knowledge and two covariates, age and education level, together significantly ($P \leq .001$) contribute to the main effects. Of the covariates, age contributes more significantly ($\leq .001$) to the explanation of the reproductive behaviour than the educational level ($\leq .05$). Of the factors, annual family income significantly ($P \leq .05$) contributes to the main effects in both the groups. After neglecting the effect of age, education level and annual family income of the groups, the contribution of other factors appears to be very trivial. This analysis has made it once more clear that the programme effect was insignificant, at least, in terms of increasing family planning knowledge and attitude enough to have a depressing effect upon the reproductive behaviour of the indirectly exposed women.

Table 40

Rank Order of the Selected Predirectors, Association with the Reproductive Behaviour of the Groups

Predictors	Indirectly exposed beta	Unexposed beta
Age at marriage	-.21**	-.12*
Contraceptive Use	.14	.18**
Family Planning Attitude	.07	.04
Family Planning Knowledge	-.01	.03

** Significant at $P \leq .01$; * Significant at $\leq .05$

Multiple Classification Analysis (MCA) of the factors referred to above, show the proportion of deviation of the category means from the grand means of both the groups, Table-41 displays the category means, unadjusted (eta) and adjusted (beta) correlations of the factors with the grand mean parity of both the groups. Data show that women of the lowest income families have low parity in both the groups compared to the women of the medium and above medium income families. Among the indirectly exposed women who support family planning have a somewhat lower mean parity (-.22) than the groups average. Comparable situation of the unexposed group is a bit different. The variance explained by these factors is only 3% in the indirectly exposed group as compared to 1% of the unexposed group. However, the factors and the covariates together explain 64% of the variance of the reproductive behaviour of the indirectly exposed group as compared to 53% of the unexposed group. The adjusted correlations (beta) of three factors in both the groups are very low and do not significantly explain the variance of the reproductive behaviour. We also observe that low income families have lower parity than the medium and above medium income families. The hypothesis that the low income families

Table 41

Multiple Classification Analysis (MCA) of the Relationship of the Selected Factors with the programme and Non-Programme Women's Reproductive Behaviour, 1979.

Variable plus Categories	Indirectly Exposed		Unexposed	
	Grand Mean=4.5 N=651 eta	Adjusted for factors Dev'n Beta	Grand Mean=4.4 N=312 eta	Adjusted for factors Dev'n Beta
Annual family income				
Below Medium	132	-.26	56	-.25
Medium	400	.14	198	.05
Above Medium	119	.07	58	.10
Number of Contra- ceptive known				
Medium & below	356	-.07	176	.19
Above medium	295	.01	136	.10
Attitude				
Support	499	-.22	224	-.03
Don't support	152	.14	88	.03
Multiple R ²				
(Adjusted for factors + covariates)		.64		.53
Multiple R		.80		.73

In the absence of 2-way and 3-way interaction of the factors, MCA is considered to be an optimal analytical model.

have high fertility compared to women of other income strata is not, therefore, tenable in respect to the programme and non-programme women.

CONCLUDING REMARKS

To recapitulate, the foregoing analyses clearly show that the indirectly exposed and unexposed women are very similar in their contraceptive and reproductive behaviour. The impact of the directly exposed women (trained women) in family planning was trivial even after three years of programme operation. Socio-economic and demographic characteristics of both the groups are also similar. Programme women's overwhelming support for family planning also did not lead to contraceptive practice. The current use among the indirectly exposed women was only 12% as compared to 10% for the unexposed women. The comparable figure of the country as a whole was 13% (BCPS, 1979) showing that the programme women were falling the national average despite the programme inputs. The early age at marriage of both the groups was found to be significantly important determinant of high fertility followed by their low level of contraceptive practice. Our data also show that low income families have lower parity than the medium income families, and that low level of education (primary and below) could not bring about any depressing trend in fertility nor could raise sufficient contraceptive practice level. All these findings lead one to conclude that a programme which is designed to bring about diffusion effect in respect of contraceptive and reproductive behaviour of the village women through a group of trained women cannot give the desired results unless such trained women are made accountable for their motivational efforts and socio-cultural factors are conducive to their functional mobility for the motivational work in their respective community.

CHAPTER IX

Summary and Conclusions

Keeping in mind two central questions raised in chapter I the findings discussed in the subsequent chapters concerning the trained and untrained programme and non-programme women are briefly summarized in this chapter under the rubric of the trained and untrained women for a clear view and a comparative study to draw some conclusions.

Trained Women (Directly Exposed)

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

The trained women generally come of very low-income families. The median annual family income was Tk. 4,247 in 1979, which was much lower than the programme and non-programme women's annual family income (1); 52% of these women were literate; they had schooling from 1-5 grades and above; 22% of the trained women were unmarried; 50% of them currently married; and 77% ever-married. All these women were in their reproductive years of whom 55% were under the age of 20. They were selected on the basis of expressed desire and recommendations of the local leaders (2).

EXPOSURE TO TRADE SKILLS

In 1976, the trained women were exposed to seven kinds of trade skills such as sewing, poultry-raising, embroidery and lace, jute goods, cane and bamboo goods, weaving and clay-

- (1) Median annual family income of the programme women was Tk. 5,100 and those of non-programme women was Tk. 4,800.
- (2) The implication of this selection process is described in Appendix G.

modelling by the women's vocational programme of Bangladesh's Ministry of Women's Affairs. Besides, they were given training on population education for their own motivation of family size limitation and also, for playing the role of a catalyst in their respective communities. The purpose of imparting trade skills was to raise their income level, to enable them to become self-reliant and above all, to raise their status in their respective families, while the purpose of the population education was to mould their contraceptive and reproductive behaviour to achieve a lower fertility goal. It was expected that women could have power in the family decision-making if their status in the families could be enhanced as a result of their income from the trade skills. The extent to which both the objectives have been achieved are, in fact, central questions of this study.

According to the methodology discussed in Chapter IV, a retrospective survey (1981) to reconstruct the baseline situation of the trained women in 1976 and a follow-up survey in 1979 were conducted to measure the change in their attitude towards age at marriage for boys and girls, ideal number of children, attitude and knowledge about child care, work status, income level, status in the family and above all, contraceptive and reproductive behaviour. The discussion that follows may give a picture reflecting the degree of changes over a period of three years as a result of their exposure to the programme.

CHANGES IN ATTITUDE

Our study revealed that there was a considerable changes in certain attitudinal aspects of the trained women. For example, in 1979, the trained women considered four years as an ideal gap between the first marriage and first child as against two years in 1976. Similarly, 25 and 18 years were considered as ideal age at marriage for boys and girls respectively in 1979 as against 21 and 16 years in 1976. The ideal number of children was considered to be three in 1979 as against four in 1976. After examination by multivariate analysis, we found that the trained

women's contraceptive behaviour explained significantly ($P \leq .05$) the variances of their attitude towards ideal number of children. Age, age at marriage, number of living children, and annual family income had very little bearing on the attitude towards ideal number of children.

CHILD CARE

With regard to child care related matters, there was a considerable change in their attitude and knowledge. For example, in 1979, the trained women preferred 15 months of breastfeeding as compared to 22 months as thought in 1976 (2); and 94% considered blade for umbilical cord in 1979 as compared to 54% in 1976.

TRADE SKILLS AND INCOME

Entering into the programme with the knowledge of one skill on average in 1976, the trained women knew 3-4 trades on average in 1979. The majority of them (54%) were engaged in production workshops attached to vocational centers as compared to none in 1976. Those who knew more trades were involved in production workshops and earned more income than those who knew fewer trade skills and worked at home. The majority of those who knew four or more trades were engaged in income generating activities than those who knew three or less number of trades. On examination, we found that those who were literate knew more trades and were relatively in the higher income scale (Tk. 100-199) than those who were illiterate (see p.128).

Mean and median annual income from trades were Tk. 1575 and Tk. 800 respectively in 1979. Although this amount was not as high as could have been, in view of the constraints around

(2) Training does not always lead to enhanced knowledge. In the case of breastfeeding for example, the longer the period, the better for child and less the probability of becoming pregnant. The trained women seemed to have been unaware of this,

their social habitat and work place, this level of income was appreciable indeed.

We have also observed that all trades are not equally important for the trained women's income. For example, the trades that were found to be significantly important for income were poultry, cane and bamboo goods, embroidery, lace and carpet knitting and jute goods, Sewing and clay modelling are not productive for income generation. Relatively, a few women were engaged in weaving. It is believed, if this particular trade is fully developed in all the production workshops, women's income level was likely to be more in the future.

The significantly important predictors in raising the income level are involvement in production workshops, work besides household work and their knowledge about trade skills.

Educational level also had an important bearing on the acquisition of knowledge about trade skills and the probability of being in the higher trade income scale. Illiteracy appears to be a double edged sword from the point of view of knowledge about trade skills and income as it limits both comprehension of trade skills and earnings a higher income.

We have observed a marked degree of fluctuation with regard to the trained women's annual family income. In 1979, 37% of their families were found to be on the low income scale (Tk. below 3000/-), as compared to 30% in 1976. In 1979, 13% of their families belonging to the medium income scale (Tk. 3001/-12,000/-) became poorer than 1976. However, only six percent of their families were fortunate to become richer in 1979 in terms of their entry into the higher income scale (Tk. 12001/-+) than 1976 level. Our data also show that the trained women's mean annual contribution to the family was substantially increased upto Tk. 628 in 1979 from the 1976 level of Tk. 235.

PERCEIVED STATUS IN THE FAMILY

Our findings show that in the majority of families, the husband/father took decisions. Interspouse consultation for

decision-making seemed to prevail in 39% of the families. In only 11% of the families, women alone took decisions (3). The socio-economic characteristics of these particular families are, however, not clear from our data. Still participation in the family decision-making process was found to be weighted on an equal footing irrespective of member's earning status as evident from the report of 59% trained women as compared to only 41% who reported that earning members were more consulted than the non-earning members. Our data also revealed that the trained women were least consulted about their own marriage, though they were consulted on other matters of family interest such as son's circumcision, daughter's marriage, taking loans and social visits. The preceived importance of the majority of the trained women was reported to be much more than what it used to be before their exposure to the vocational programme. Not age and educational level, but income from trades emerged as the significantly important ($P \leq 0.1$) predictor to enhance their importance in the family decision-making. However, the strength of association between trades income and their perceived importance in the family is still low ($\phi = .12$) and does not permit us to draw any major conclusion, although there is an apparent indication to support the idea that trade income is likely to have some what greater effect in the family decision making process in the near future.

CONTRACEPTIVE BEHAVIOUR

More than 90% of the trained women supported family planning both in the base year (1976) and the follow-up year (1979). There was a marked degree of qualitative improvement in their knowledge about family planning in 1979 compared to 1976 level. They knew five methods of contraceptive in 1979 as compared to two in 1976. The contraceptive prevalence rate was increased upto 31% from the 1976 level of 26%. The comparable increase in the country as a whole in 1979 was 13%

(3) These are all female headed families.

(BCPS, 1979) from 1976 BFS level of 9%. The prevalence rate was higher in the age-group 25-30 years than other age groups. After examination of the data, it was observed that the number of living children and an ideal number of children were significantly important ($P \leq .05$) predictors to explain the variances of the trained women's contraceptive behaviour. Another observation was that income from trade skills and intention to use contraceptive in the future was significantly related ($P \leq .05$) in positive direction.

REPRODUCTIVE BEHAVIOUR

With regards to reproductive behaviour, it was observed that the currently married trained women's total fertility rate (TFR) was 3.7 in 1979 as compared to 3.65 of 1976, indicating that they were continuously maintaining a low fertility level. Their mean parity was 2.18 in 1979 compared to 1976 level of 2.11 indicating a very little increase in their parity over time. The mean number of living children was 1.95 in 1979 as compared to 1976 level of 1.85. The average child loss to these women was recorded to be .04. However, the proportion of child loss in the younger age group, 15-19, was high relative to all age groups (Appendix D, Table 1). This was also consistent with the findings of other studies in Bangladesh (BFS, 1976 ; Mabud et al 1979).

Judged by the criteria of parity and current fertility level, our currently married trained women have consistently demonstrated a very low fertility behaviour over a period of three years, comparable to women of any developed society. If this behaviour is to be measured by crude birth rate (CBR), we find only 27 births per 1000 population (4). The comparable figure for the nation as a whole was 43 per 1000 population in 1979. The general fertility rate (GFR) was found to be 92 per 1000 fecund women 15-49 years compared to the national average of 180.

What are the factors that really account for this low fertility behaviour during 1976-79 ? Three important predictors were identified. These were age, age at marriage, and contraceptive behaviour. Age at marriage and contraceptive behaviour significantly ($P \leq .01$) explain the variances of the reproductive behaviour measured in terms of live births since their first marriage. While age and contraceptive behaviour significantly ($P \leq .01$) explains the current fertility, it was observed that contraceptive practice was much more in the age-group 25-39 than any other age groups.

Our analysis further shows that educational level, annual family income, number of living children and income generating activities could neither significantly ($P \leq .05$) explain the past nor the recent fertility behaviour of the trained women. One important observation was that work besides household work demonstrated a somewhat negative effect ($r = -.04$) on current fertility. Although it was not statistically significant ($P < .05$), we must, however, note that 95% of the trained women who do work besides the household tasks had, at least, set a trend for depressing fertility in rural Bangladesh. Another significantly important finding was that even among the users, differential levels of current fertility were observed as a result of their involvement in income activities (See Figure 4, P. 777). Mean level of current fertility was found to be lower among women of high income families than among the low income families.

UNTRAINED "INDIRECTLY EXPOSED AND UNEXPOSED WOMEN".

According to the second evaluation model and the research questions envisaged in Chapter I, our interest lies in knowing whether the programme women have been benefited from their

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- (4) The average family size of 257 currently married women was 5.4 i. e., they had in all, 1388 persons in their families. There were 37 births recorded in 1979 among these women. This roughly gives a CBR of 27 per 1000 population.

indirect exposure to the programme, and whether they differ significantly from their non-programme in their contraceptive and reproductive behaviour. The findings discussed in Chapters VI and VIII are briefly summarized as follows to show the extent to which these two groups differ. Their differences, in appropriate cases, will be measured by the Bangladesh fertility survey (1976).

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

Judged by the criteria of educational level, work status, and family size, there are very little difference. However, some differences are observed in respect of the programme women's median age, median duration of first marriage and median age at first marriage (1-2 years less than the non-programme women). The median annual family income of the programme women was slightly higher (Tk. 5150) than those of the non-programme women (Tk. 4850).

ATTITUDINAL DIFFERENCES

With regards to the attitudinal variable like ideal gap between the first marriage and first child and mean number of desired children, there appeared to be no difference between the programme and non-programme women. However, there were some attitudinal variables in which they differed. For example, the programme women's ideal age at marriage was 17 years as compared to 145 years of the non-programme women. Preference for son is a strongly held value of both types of women. More than 85% of programme and non-programme women have shown positive attitude towards working women.

THE PROGRAMME WOMEN'S REPORT ABOUT TRAINED WOMEN

Some questions were asked to ascertain whether the trained women worked for the dissemination of their knowledge about trade skills, and family planning. The interesting data collected in this study show that 27% programme women were aware of

the vocational centres as compared to 18% non-programme women. Awareness of the trained women and their discussion about what they had learned were reported by 42% programme women as compared to 2% of non-programme women ; 10% programme women reported to have been benefited from the discussion of the trained women as compared to 1% non-programme women. Only 4% accepted family planning as a result of the trained women's motivation ; and only 1% of them who were family planning acceptors were revisited by them and living children, educational level and annual family income are also moderately associated with the non-programme women's family planning knowledge and attitude. Contrary to our expectation, we find a somewhat lower correlation between the programme women's knowledge about trade skills and educational level than their non-programme counterparts.

The family planning KAP related recursive model tested by multiple cross classifications, was found to be more linearly fitted with non-programme women than the programme women. In the case of the latter, family planning knowledge appeared to have a straight forward relationship with contraceptive behaviour without mediating through attitude which leads to practice. All these evidences show that the non-programme women were little contaminated by the programme and that the trained women's Performance in motivating people to accept family planning were not satisfactory.

Both the programme and non-programme women, know, at least, one trade skill in 1979, and their mean annual income from the trade skill were Tk. 504 and Tk. 400 respectively. The comparable figure of the trained women, as we have noted earlier, was Tk. 1575/-. With regard to knowledge of trade skills. Three percent programme women acknowledged the trained women as a source of knowledge as compared to one percent of the non-programme women ; 69% of the programme women as compared to 26% of the non-programme women acknowledged both the trained women and co-operative members together as the major

source of their knowledge about trade skills. In this connection, it may be noted that village co-operative was a common factor in both the programme and non-programme areas. Anyhow, the above evidence made it once more clear that the trained women over a period of three years could not adequately benefit the programme women from their learning about trade skills.

The trained women's efforts to motivate the programme women were also very limited. Only six percent of the programme women reported about them as source of their family planning knowledge revealing a dismal picture of their motivational efforts which was contrary to the programme expectation. Friends, relatives and neighbours were major source of family planning knowledge of both programme and non-programme women, rather than the trained women or family planning workers.

The above failures of the trained women might be a part of their own reasons or part of the socio-cultural factors originating from their household structures and village environment which have limited their spatial mobility and lowered their performance in the communities.

CHILD CARE

With regard to child care related matter, a very little variation is observed between the programme and the non-programme women. For example, 87% programme women supported breastfeeding as against 92% non-programme women. While knowledge about use of blade for nail cutting is higher among the programme women (59%); than among the non-programme (49%); 21% programme women reported use of a bamboo sliver for nail cutting as against 10% of their non-programme counterparts.

DECISION-MAKING SYSTEM

Our research reveals that in 73% families of programme women as compared to 86% of non-programme families, the father/husband alone take decisions. In five percent of both the programme

and non-programme women's families, women made decisions. Our data also reveal that 22% programme women's families as compared to nine percent of non-programme women's families consulted "OTHERS" for decision-making.

CONTRACEPTIVE BEHAVIOUR

In 1979, more than 70% programme and non-programme women supported family planning as a way of life. They knew, at least, four methods on average. The percentage of programme women who had knowledge of oral pill, condom, I. U. D., emko, and sterilization was higher than those of the non-programme women. Such a difference was, however, very trivial. In general a higher proportion of both groups of women had knowledge about oral pill, sterilization, and withdrawal in 1979 than 1976 BFS women (see Table 25). Despite increase in the knowledge about the contraceptives, prevalence rate was very low indeed. Median duration of contraceptive practice was 5.8 months for both programme and non-programme women. The percentage of ever-users among the programme women was lower (21%) than the non-programme women (23%). The rate of current use was higher (12%) in the case of former than the latter (10%). The comparable figure for the nation as a whole was 13% (BCPS 1979) showing that the programme area was falling behind the national standard despite the programme inputs.

This study shows that the programme women's family planning knowledge and attitude are moderately associated with their age, educational level and annual family income, but not with the number of living children.

REPRODUCTIVE BEHAVIOUR

The current fertility defined earlier as live births during one year preceding the 1979 follow-up survey if measured by the total fertility rate (TFR) was found to be slightly lower (TFR=7.0)

among the programme women than the non-programme women's (TFR=7.4). The contemporary national estimates was a TFR of 6.5 (BCPS 1979). All these marital fertility rates (MFR) were close to the MFR of 7.4 of BFS, 1976. At any rate, the current fertility levels of both programme and non-programme women were close to a biological maximum. The slight variation between the two groups is too trivial to draw any major conclusion about the programme impact.

If we want to measure the overall reproductive behaviour (ver-born children) we also find that the mean parity of the programme women was 4.5 as compared to 4.4 of the non-programme women showing virtually no such big differences. The comparable figure for the BFS (1976) was only 4.1 and that of BCPS (1979) was 3.7, showing that the programme and non-programme women's parity was higher by .4 to .8 then the 1976 BFS and 1979 BCPS women. Figure 2 provides a visual impression of their overall reproductive behaviour and the number of living children vis-a-vis the BFS (1976) women.

Among the factors that significantly explain the reproductive behaviour of the programme women are contraceptive behaviour, educational level and family planning attitude. Of the covariates, age and age at marriage have more contribution to the main effect than the above mentioned three factors. The multiple classification analysis shows that educational level (beta .23) and contraceptive behaviour (beta=.22) are important predictors for the explanation of the variance of the reproductive behaviour of the programme women; whereas, with regard to the non-programme women's reproductive behaviour, family planning knowledge and annual family income are important predictors, but not educational level and age at first marriage. Age also appears to be an important determinant as its contribution to the main effect is much higher than all other factors combined.

Though the average number of living children for women is an imprecise measure of fertility, in a bid to estimate child

loss to women by age groups, we have estimated the mean number of living children of programme and non-programme women for comparison with the BFS (1976) and other contemporary survey data BCPS (1979). Our data show that average number of living children was 3.5 among the programme women. The comparable figures of the trained women and 1976 BFS women, were 2.0 and 3.5 respectively. The average child loss to woman aged 15-49, in these four groups of women has been estimated and shown in Appendix C.

Data concerning trained women, programme and non-programme women and the BFS women (1976) show that child loss in the age-group 15-19 is much high relative to other age-groups, showing that early age at marriage and proportion of child loss are correlated.

Trained Vs Untrained Women

Having discussed the findings concerning the trained and untrained programme and non-programme village women, a comparative study, at least, by some indicators seems to be in order for recapitulation and drawing some conclusions under the following three major headings viz **directly exposed** (trained women), **indirectly exposed** (programme women), and **unexposed women** (non-programme women). Table 42 will display the key findings and present a comparative picture of these three types of women.

Some of the findings clearly show a substantial difference between the **directly exposed** trained and those of the untrained **indirectly exposed** and **unexposed** village women not only in their attitudinal aspects, but also in their income level, contraceptive and reproductive behaviour. As a result of their exposure to the vocational programme and population education, their knowledge in trade skills, contraceptives and child care have been increased considerably in 1979 not only as compared to base year (1976), but also in relation to the untrained programme and non-programme

women. Involvement in production centers along with their works besides household tasks contributed significantly to raise their annual income from trade skills which is almost 3-4 times higher than the untrained programme and non-programme women.

With regard to the differences in contraceptive and reproductive behaviour one may, however, argue that these may be accounted for the differences in the average age and duration of marriage between the trained women and the untrained programme non-programme women. Out data elsewhere clearly show that the trained women's reproductive behaviour if examined by parity and age-group will show low fertility level compared to other two groups. Even in the recent fertility level, the trained women have remarkably demonstrated lower fertility than the untrained programme and non-programme women.

We may, however, note three important differences between those trained and untrained women-one is their educational level ; second is their median age and duration of marriage differences ; and the third is their high contraceptive prevalence rate. Of all these, educational level does not appear to be significant. However, contraceptive use is commonly found as a significant predictor of reproductive behaviour.

MAJOR CONCLUSIONS

From the findings discussed above we may draw the following conclusion :

- a) Given exposure to the vocational training and work opportunities in the production workshops, the rural women are capable of increasing their income ; and during the programme they became a source of family income. The data also show that their opinion in the family was weighted more; and their status in the family decision making process was increased.

Table 42

A Comparative Picture of the Directly Exposed, Indirectly Exposed and Unexposed Women by a few Selected Indicators in 1979

Indicators	Directly Exposed	Indirectly Exposed	Unexposed
Median Annual Family Income	Tk 4247	Tk. 5140	Tk. 4840
Mean Annual Contribution to Family	Tk. 628	—	—
Mean Income from Trades	Tk. 1575	Tk. 504	Tk. 400
Median Number of Trades Known	4	1.6	1.3
Median Age at First Marriage	16	12	13
Median Duration of First Marriage	10years	16years	18years
Ideal Number of Children	3	4	4
Percent Support Family Planning	98	77	72
Percent Current Users	31	12	10
Mean Number of Ever-Born Children	2.18*	4.5	4.4
Total Fertility Rate	3.7	7.0	7.4
Percent Women Taking Decision in Families	11	5	5
Median Number of Contraceptive Known	5	4	4
Proportion of Child Loss In Age Group of 15-19	15	20	—
Percent Having Knowledge About Using Blade for Naval Cutting	94	59	49

* Standardised figure is 3.4

Table 42 (continued)

Indicators	Directly Exposed	Indirectly Exposed	Unexposed
Attitude Towards Age of Marriage for Girls	18	17	14
Percent Work Besides Household Work	85	3	2
Percent Support Breast-Feeding	96	87	92
Percent literate	52	27	27
Mean Age of the Respondents	25	28	30
Percent Son Preference	—	85	78
Family Size	5.4**	5.6	5.7
Median Month Use of Contraceptive	5.8	5.8	5.8
Percent Women Having Positive %Attitude Towards Working Women	—	96	91
Mean Ideal Gap Between the First Marriage and First Child	4	3.6	3.4

b) All trade skills are not equally important. Trades like poultry, lace and embroidery, jute goods and carpet knitting and cane and bamboo goods are proved to be economically productive. Whereas, sewing* and clay modelling were not. Weaving is potential. Given particular attention to its development, it may turn to be better in future.

c) Change in the contraceptive and fertility behaviour appear in this study to be associated with their exposure to the programme during 1976-79, status and scope for spatial mobility. Fertility appears to be lower in the families where both the spouses make decisions than the families where either of them make decisions.

* Sewing simply for domestic purpose does not generate any income. If sewing is done for preparation of others' clothing then it generates income.

** Family size represents families of all 520 trained women.

d) The majority of the families remain dominated by men ; and women are least consulted about their marriage. But in other important matters of the family, 75% of the trained women reported that they were consulted. There is some evidence that earning members tend to be consulted more than the non-earning members.

e) The trained women apparently have very inadequately discharged their role of change agents in their respective villages either for reasons of their own or for socio-cultural reasons which limit spatial mobility or for lack of concern of this role on the part of their supervisors.

f) Preference for a son is a commonly held value in the study areas. As long as a son is perceived as an old age security or a daughter is not equally weighted, the Bangladeshi women's status may not change much. Exposure to vocational trades and opportunities for income, however, little it may be, are likely to alter this situation gradually.

g) Commitment to work, work besides household tasks and direct involvement in income activities tend to have depressing effect on current fertility.

h) In rural Bangladesh, age, age at marriage and contraceptive practice are significantly important determinants of reproductive behaviour. The lower the age at marriage, the greater the number of children and the larger the family size.

i) There is a considerable gap between family planning knowledge and practice among both the indirectly exposed and unexposed women.

j) The rural women in Bangladesh overwhelmingly support working women. Therefore, there is no reason to believe that the women's community will not take advantage of the opportunities for income, if provided to them.

k) Decision-making power in the family, even after a modest increase in trade income level and in their contribution to the family, may not dramatically increase. In Bangladesh

rural setting, to acquire such power, some more time may be necessary. However, a trend to feel better off than before seems to be prevailing among the trained women.

- i) This study reveals that 22% of the trained women were not married during 1976-79. These were the women who were most likely to be 14,15 or 16 years of age at the time of recruitment. Three years later, they were in the age range of 17-19 years. Such a delay in their age at marriage may be due to the change in their parents' perception of their own marriage as a result of their income earning opportunities or their own motivation for delayed marriage of both.

Policy Implications

Conclusions drawn on the basis of the findings lead us to suggest three kinds of policies, viz social, economic and demographic, and call for the attention of the authorities concerned to consider the issues involved. These policies have, in fact, both fertility reducing potentials and scope for the rural women's welfare. Since our conclusions are by no means complete, we have indicated briefly some areas for further research to assist population planning and women's social change in Bangladesh.

- a) **Social:** Included in the social policy are measures to attenuate the prevailing system of seclusion and isolation or purdha which rural women are presently subjected to. In order to bring about changes, the first desirable step is to recognize women as equal to men. Although Bangladesh's constitution recognizes this, in reality, differential treatment prevails at the household level and in employment and education. In order to ensure equality, the government should pursue an education policy which will ensure an equitable per capita increase in educational funds for both boys and girls from primary to

secondary level to minimize dependence on parental support in this critical period. Besides, government may also consider a modest annual educational grant upto Tk. 1000 to those parents who will keep both boys and girls in the secondary schools. Such policy measures are likely to change parental outlook on daughter's education.

Both the public and private sectors should increasingly employ women having secondary level of education in shops, light industries and plants. This social policy may be perceived by the parents as favourable for the teenaged daughters and the latter may not be pressured to marry so early. The parents may see that both marriage and employment prospects are increasing as a result of formal education at schools or functional education or both. In fact, spatial mobility through educational process is a first step to make a break through in the age old tradition of isolation and seclusion and eventually to integrate rural women in the development process (Harder 1978. p.1981). As an implication of the above policy, both the Ministries of **Education and Women Affairs** have to assume major responsibilities. The former should get more allocation of resources for female education and the latter for setting up vocational training centers along with production workshops for women. Besides, the government must encourage, as a part of its policy, the private sectors to open up vocational centers and production workshops for women as there are now for men.

There is also a need for rural based national, regional and local level women's organizations to help socially depressed women, and to organize the rural women into a cohesive social group. These kinds of organizations should emerge outside the Government, i. e., inside the private sectors. Unfortunately, the privileged urban women, being themselves satisfied, show little concern about their under privileged rural women. The greatest obstacle to women's participation in public life are women themselves emancipated, educated and privileged women are usually

satisfied with their individual freedom and the improvement of their status and rarely become involved on behalf of the their under privileged counterparts (Harder 1981, p. 35),

b) **Economics** : Coupled with the policy for women's education and vocational training, there should be the conscious application of a public policy for their employment or creating income earning opportunities. The mere creation of women-power with general knowledge and skills without creating an appropriate market for their utilization will be counter-productive. Therefore, the government must identify sectors and sub-sectors where rural women, after education and training, must be absorbed in bulk as part of the state policy. The rural health and family planning, primary schools, village extension works, and agriculture are the few public sectors that have the scope to absorb the young trained women, in addition to light industries, weaving, shopkeeping, commercial firms and the like in the private sectors. As a rule, the government should urge upon the shopkeepers in the urban areas, to employ at least 30-40% of their employees from women.

In Bangladesh agriculture is the main industry and it will expand further. In adherence to the existing social practices and norms, women can do some agriculture related activities on an expanded scale, such as poultry raising, vegetable gardening and the like. The Government should provide through the co-operatives, agriculture bank or Gramin Bank, some credit facilities to women individually or through rural women's co-operatives for such kind of development activity. The animal husbandary department should be directed to visit the production farm regularly, to ensure safeguard against epidemics. Thus, the agriculture sector can, in large scale, absorb rural women, literate and illiterate as compared to other sectors of the economy. This will provide home-based income earning opportunities. This study has already shown that the relative income from poultry farming compared to other trades is quite high.

Weaving and small scale light industries like garment factories, production centers for pin, paper clips, indigenous jute, cane and bamboo goods should increasingly receive government patronization in the form of credit, provided they employ a certain percentage of women. These light industries involving women in fairly large numbers relative to men, must get protection from the competitive markets for several years to allow these industries to grow and expand. For modernising these industries and equipping them with the latest know-how, some of the trained women should be sent abroad for short and long-term training to become qualified trade instructors for women's skills development should also be welcomed. Besides, the Government should also consider inducing private sector industries and shopkeepers to provide work opportunities in return for certain benefits such as reduction of their income depending upon their capital and profit.

Some of the economic measures suggested above, if pursued by the Government and the private sectors, will increase women's income earning opportunities, resulting in spatial mobility and a breakdown of the prevailing "seclusion" or "purdha" system in the rural areas. This may pave the way for accelerated rural development involving women.

C. **Demographic** : Ours as well as other survey data (BFS 1976, BCPS 1979) show that the aggregate teen age fertility in Bangladesh is much higher than for any other age groups. More than 75% of girls marry before age 20 and experience early motherhood without any knowledge of child care. This study and several other studies show that the proportion of child loss in the age-group 15-19, and maternal mortality are high compared to other age-groups (Ashraf 1982 ; Pebley et al., 1982). The early age at marriage in this case appears to be the major contributory factor. Apart from the high proportion of infant and maternal mortality, in a relatively less contracepting country like Bangladesh, early age at marriage provides a naturally longer marital span (as for our programme and non-programme women) and thus giving scope for high marital fertility.

The countries or regions that had set the trend for low fertility (such as Japan and West and North Europe) increased their age of marriage (Davis, 1963 ; Dixon, 1973). Even the first demographic transition in Europe occurred when the people gradually delayed their age at marriage (Coale, 1973).

Delayed marriage has consistently shown some depressing effect on fertility. Analysing American data, one analyst observed that until 1930, effect of contraceptive in reducing fertility was less than delayed marriage (Pearl, 1939). In a recent exhaustive review of the declining trend in fertility in Srilanka, Malaysia, Tunisia, China, Hongkong, Korea and Singapore, another analyst has observed that raising age at marriage is a major contributory factor to this development (Chaudhury, 1982 ; pp. 100-101).

All these evidences suggest that for the decline in fertility, infant and maternal mortality, the Government of Bangladesh should pursue a policy discouraging early age at marriage for girls until age 20.

Any proposal to achieve the above goals may face opposition for two main reasons. One is that in the absence of a vital registration system, age at marriage will be distorted. The other is the parents' lack of support for such a policy as they will perceive it as increasing their hardships and reducing the marriage prospects of their daughters. The traditional Orthodox group is usually on this side. However, the first problem may be overcome by introducing the family/household cards in the form of ration cards showing the name of members of the family/household and their ages (not necessarily the date of birth) as a rule of law. A copy of this card should be available in the nearby district civil offices and local union and registration offices, and must be used, by law, for taking government loans, opening account with the bank, school admission, employment and other prescribed social events of family interest introducing the son's or daughter's marriage. This system will obviate, to a large extent, government's concern for the high administrative cost of the vital

registration system. Although this is not an ideal solution, it is a less costly alternative for the government and the people than other and can lead to a variety of greater goods. The second problem may be overcome to some extent by providing vocational training and education, especially to the teenage girls within the scope of various social and economic measures suggested earlier.

This and other studies in Bangladesh and elsewhere show that preference for a son for economic support, security, maintaining heredity and psychic satisfactions is a strongly held value (BFS 1976 ; Barket 1976 ; Stoeckel, and Chaudhury, 1969 ; Cain, 1977). In a society such as Bangladesh where the husbands are generally 8-10 years older than their wives who generally survive several years after their death, widows have no other support, but to depend on their sons. Women's preference for sons is more pronounced than men's. In fact, this kind of perception of the value of a son can be minimised, if the social and economic policy measures suggested above are pursued to assure and demonstrate that the services of a daughter may be as good as a son's in alleviating parents' critical financial, physical or old age problem.

We have seen that our trained women have fewer children than they have thought to be ideal for a couple. In contrast to them, both the untrained programme and non-programme women have exceeded their ideal number of children which, in fact, is typical of Bangladeshi women. The former group married at age 16, practised contraceptives ; lately engaged in income generating activities by availing the facilities of the vocational programme ; worked besides household works ; had some spatial mobility and knew more trade skills than the latter group of women who might be characterised as having married at age 12-13 having a low level of contraceptive use, confinement to domestic work, less of spatial mobility, and less involvement in income generating activities. This contrasting situation has an obvious effect on their current fertility level too. The trained women

almost held their 1976 current fertility level ; while the untrained women perhaps exceeded their 1976 level—at least, as high as 1976 BFS level. Another striking observation which this study and other researches in Bangladesh show is the wide gap between the family planning knowledge and practice (BFS, 1976, BCPS, 1979 and 1981). This kind of behavioral differences between the **ideal** and **actual** number of children and also, between family planning **knowledge** and **practice** make us believe that family planning programme alone will not help in lowering fertility substantially unless efforts to integrate women into the development process succeeds: Particularily important are women's greater participation in education, social, economic and political opportunities and the means of the removal of obstacles to their employment in the non-agricultural sectors where ever possible (Mauldin et al., 1974, p. 386).

Any Public policy, such as those discussed above, must be backed up with an objective appraisal of the problems through all conceivable means including the use of mass media, publicity with local orientations and social institutions. For the general masses, the sources of knowledge must come from vivid facts, and demonstratable benefits. At least, this study and researches in other culture have shown that early age at marriage is closely associated with child loss and maternal mortality, apart from high fertility. The people have not been informed of this so far to the fullest extent. Of course, the motivation for delayed marriage of the girls must come more from this source of knowledge than other sources. The demonstratable benefits exemplified by our trained women as a result of their exposure to the programme, in terms of income, contraceptive practice and reproductive behaviour, hold lessons for the policy makers in Bangladesh and dictate in rather clear terms that the route to **fertility decline** is not family planning programme alone and that the problem of **underdevelopment** cannot be successfully overcome as long as education and income earning opportunities are one-sidedly oriented to men and do not take women into account.

SUGGESTIONS FOR FURTHER RESEARCH

Before concluding the study, several relevant suggestions for further research seems to be in order. One operational research question from the point of view of programme sponsor is why the trained women have inadequately discharged their role of change agents. What are the factors that really account for their failures ? Is it an apathy or a deliberate neglect on their part ?

The next researchable point is to find out differential levels of trade income, contraceptive and reproductive behaviour between the women exposed to the government programmes and those in the private programmes and the factors that contribute to such differences. Apart from the sample survey, a case study may be undertaken to dig out the underlying causes.

The other public sector programmes such as rural mothers' programmes and village women's co-operatives which are intended to involve women in development process and provide training in trade skills and family planning, should be examined separately for the comparison of their income reproductive behaviour and degree of influence upon the women of the programme villages. In such a study, one should carefully document the directly exposed women's spatial mobility, degree of involvement in production works, income and saving, in addition to looking into contraceptive and reproductive behaviour. Here also, sample survey and case study methods may be considered.

Surveys to find out the employees' attitude towards the trained women engaged in shops and light industries, parents, perception of the work of their unmarried daughters in such places may be undertaken. Basic instrument should be carefully designed to ascertain their attitude and document suggestions about the types of income earning activities and training they do prefer for women. The findings of these surveys may provide important clues to indentifying training needs, developing instruction materials, and designing a need-oriented traini-

ning programme. If a social change is to be induced through innovation, that has to be done in a subtle way by taking into account the emerging knowledge from a given social context.

The vocationally trained women of both public and private sectors produce goods for their consumption as well as for sale for earning income. A study to ascertain the consumers' preference from the point of view of design, workmanship, price and other utilities may be a worthwhile undertaking. The potential target groups for such a study may be the shopkeepers of the nearby markets (where products are generally sold) and the randomly selected village consumers around the vocational centers or production workshops.

Those women who have exceptional ability to produce quality goods should be in same way linked with international markets for their psychic and economic satisfactions. This may be done by way of introducing their quality products with the international markets. In order to do so, a feasibility study is highly desirable. This may be done by taking part in international trade fairs and eliciting demand of big departmental shops overseas through the embassies or trade missions or by opening shops in a few foreign capital cities. In such a study, involvement of private sector is necessary to demonstrate the government's patronization of their products and provide scope for sharing the potential benefits of the international markets. Such a gesture is likely to heighten the motivation of the private sectors to increase their investment in this hitherto neglected field of economy.

The relationship between women's income and status measured in terms of decision making power with respect to several family related indices need to be more rigorously pursued by urban and rural residence and social status (defined in terms of husband's and wife's occupation, income and educational level) to see whether such relationships have any bearing on their contraceptive and reproductive behaviour. The findings of such a study will be helpful

to the planners and policy makers in Bangladesh for understanding the status of women and finding means to remove the obstacles to their social and economic development.

We have suggested earlier several policy measures which have social, economic and political implications. The extent to which these measures involve financial cost and political risk should be ascertained at first before embarking on a nationwide programme. For this, we suggest a pilot project covering four upazilas (1), one in each of the four regions of the country, for a period of five years to observe the following :

- a) The extent to which rural parents avail themselves of the educational facilities and send their son(s) and daughter(s) to secondary schools.
- b) Documentation of household cards and their uses in certain specified matters of both public and private interest.
- c) Volume of female employment and self-employment after training and percentage of them engaged in income earning activities.
- d) Number of the educated/trained girls moving to cities for work/education.
- e) Trend in delaying marriage of girls after being aware of infant and maternal mortality through government's publicity programme ; and
- f) Incidence of vital events in the areas.

In order to meaningfully execute such programme, four regional directors under a national director may be appointed and authorised to utilise the existing upazila level functionaries (about 300). Once the government considers such a proposal, some operational mechanisms may be worked out. Such a pilot project should

have in built mechanisms for baseline, mid-term and final evaluations. If the mid-term and final evaluation results are encouraging, the government may attract donors and gradually expand the programme.

The research proposals envisaged above are just a few which we consider relevant for Bangladesh, where both the galloping population growth and women's lack of involvement in development process still appear to be serious problem. Unfortunately, our existing knowledge about solutions is too little. If above researches are considered and rightly done, then these will provide new frontiers of knowledge for policy makers and others concerned. Mere developing programmes based on common sense and institutions are often fraught with uncertainties and do not give desired results. Hence, we are inclined to urge that policy makers should get inputs from the contextual knowledge for formulating social policies. As usual with developing countries, researches in Bangladesh especially focusing on women as unique species capable of change and development rather than as reproductive agents are of low priority so far, although the complexities and the dimensions of the problems referred to above are far more serious there than in many developing countries. Vexed at this, Kingsley Davis once said, "we simply do not know how to proceed in order to reduce birth rates in traditional societies, which is why I keep calling for more researches in order to find the solution of the problems" (quoted in Berelson, 1975 p. 24). In the case of Bangladesh where policy makers are overwhelmed with many unanswered questions and issues, we entirely agree with Davis.

(1) Upazila is like an American county having 150-200,000 population.

APPENDIX A

Selection of the Trained Women

Unlike the programme (indirectly exposed) and non-programme (unexposed) women, our trained women could not be strictly randomly selected as planned, because the number of women available for training in each Upazila was much less than targetted (see pp. 51-53). The selected trainees incidentally have a high literacy rate and are of low income families compared to the other two groups. The selection authority did not involve itself in choosing a particular woman of a rich family having some education at the cost of an illiterate woman of poor family and vice-versa. The programme was designed for the community and was open to women of child bearing age, irrespective of any socio-economic characteristics. It was just by chance, not by deliberate choice that a cohort of trainees of the above background happened to be selected. Under these circumstances, the conclusions drawn about them do not seem to be influenced or vitiated by the selection procedures.

The women, so selected, were exposed to the vocational training and population education programme for a period of three months. This exposure has evidently changed their perspective on several aspects of their lives, as trade income, attitudes and contraceptive practice. Similar changes presumably would have occurred in other groups of women, had they been trained in the programme. Thus, the training programme is a key factor to be reckoned with. The several policy conclusions drawn in this study based on evidences exemplified by the women being trained in the programme are, therefore thought to have general validity.

APPENDIX—B

Table 1

Trained Women's Personal Income contribution To Family
by Their Income from Trades, 1979.

Personal Income contribution	Trade Income			Total
	Low	Medium	High	
Low	244 (65)	20 (29)	30 (37)	294 (57)
Medium	47 (13)	12 (17)	11 (14)	70 (13)
High	18 (22)	36 (54)	38 (49)	156 (30)
Total	372 (100)	58 (100)	79 (100)	520 (100)

$X^2=51$; $DF=4$; $P\leq 0001$; $\text{Gamma}=.48$.

Pearson's $R=.29$; $P\leq 0001$.

APPENDIX—B

Table 2

Quarterly Trade Income of the Trained Women by Trade
Skills Known by the Work Status (Work Besides
Household Task), 1979.

Trade Income	Work Besides Household					Total
	1	2	3	4	5	
Less than Tk 19	22 (41)*	24 (28)	17 (15)	15 (13)	13 (15)	91 (21)
Tk 20--49	8 (18)	22 (96)	18 (15)	13 (12)	8 (9)	69 (15)
Tk 50--99	11 (23)	16 (19)	28 (24)	26 (23)	17 (20)	98 (22)
Tk 100-199	7 (18)	22 (26)	51 (45)	57 (51)	46 (55)	183 (42)
Total	48 (100)	84 (100)	114 (199)	111 (199)	84 (100)	441 (100)

$X^2 = 56$; $DF = 12$; $P\leq .001$; Partial $\text{Gamma} = .30$.

*Figures in parentheses are in percentage.

NOTE: Since only 15% trained women do housework only, the table cross classifying their quarterly trade income by number of trades controlling for work besides house hold work (house work only) has many empty cells. Hence, it is not displayed here except the results below :

$X^2 = 18$; $DF = 12$; $P> .05$; Partial $\text{Gamma} = .06$.

19 out of 24 valid cells have less than 5.

Appendix—B

Table 3

Ever Born Children by Decision Making System in the Family, 1976

Ever Born Children	Men Decided Alone (a)	Women Decided Alone (b)	Both Husband and Wife Together Made Decisions (c)	Total
0	8 (5)	6 (17)	16 (12)	30 (10)
1	42 (29)	9 (26)	38 (29)	98 (28)
2	27 (19)	5 (15)	32 (24)	69 (22)
3	27 (19)	3 (9)	15 (11)	45 (14)
4	14 (9)	1 (3)	7 (5)	22 (7)
5	27 (19)	10 (29)	22 (16)	57 (18)
Total	145 (100)	38 (100)	133 (100)	312 (100)

Estimated Mean Parity for Group (a) = 2.5 ; N = 145.

Estimated Mean Parity for Group (b) = 2.4 ; N = 34.

Estimated Mean Parity for Group (c) = 2.0 ; N = 133.

APPENDIX—B

Table 4

Mean Parity, Mean Number of Living Children and Proportion of Child Loss by Age of the Programme Women, 1979

Age Group	(Programme Women Indirectly Exposed)		
	Mean Parity (Pi)	Mean Living children (Si)	Proportion child Loss $(1 - \frac{Si}{Pi})$
15-19	·69	·55	·20
20-24	2·26	1·92	·15
25-29	3·95	3·14	·20
30-34	5·66	4·47	·21
35-39	6·73	5·18	·23
40-44	7·65	5·60	·27
45-49	8·78	6·00	·32
All Age Group	4·5	3·5	·23

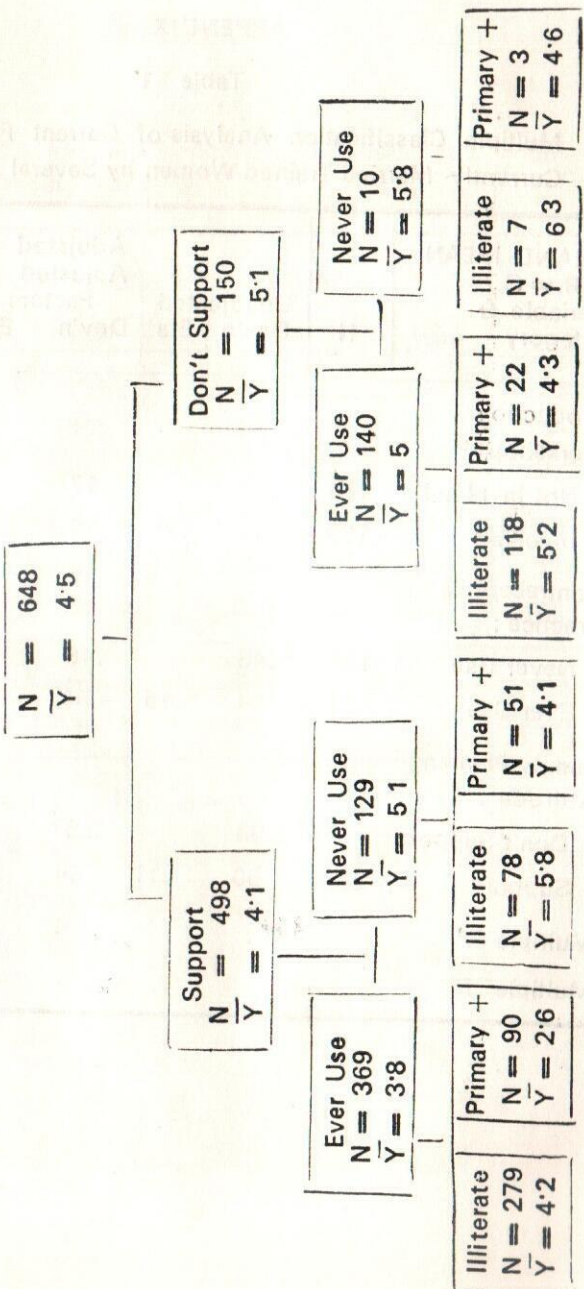
Table 5

Mean Parity, Mean Number of Living children and Proportion of child Loss by Age of the Bangladesh Fertility Survey Women, 1976

Age Group	Mean Parity (pi)	Mean Living children (Si)	Proportion of child Loss $(1 - \frac{Si}{Pi})$
15-19	1·0	·7	·3
20-24	2·5	2·0	·2
25-29	4·3	3·3	·23
30-34	5·9	4·5	·24
35-39	6·9	5·3	·23
40-44	7·6	5·5	·20
45-49	7·3	5·1	·30
All Age Group	4·0	3·5	·13

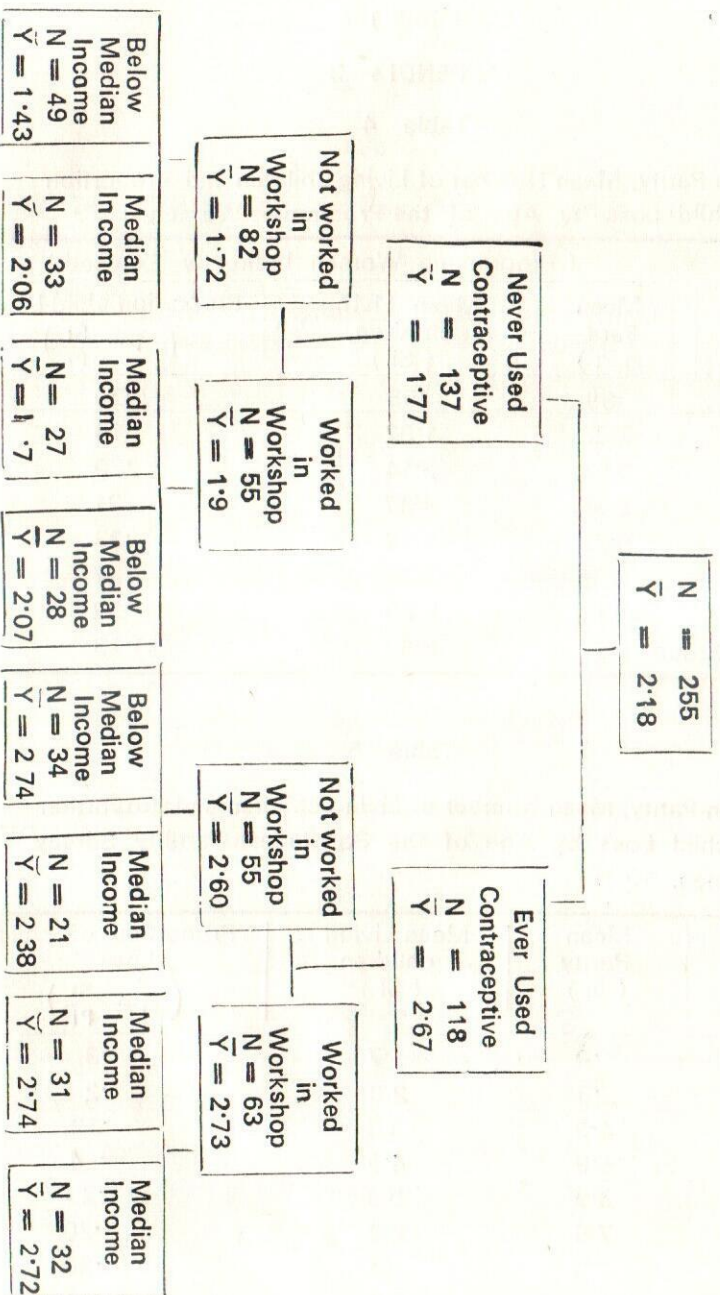
FIGURE 3

Women (reported indirectly) programme



(170)

FIGURE 1



APPENDIX D

Table 1

Multiple Classification Analysis of Current Fertility of the
Currently Married Trained Women by Several Factors, 1979

GRAND MEAN TFR = 3.7 Variable & category	N	Unadjusted Dev'n	Eta	Adjusted for Adjusted for Factors Dev'n	Beta	Adjusted Factors and Covariates Dev'n	Beta
Production Workshop :							
Not Involved	118	.13		.17		.15	
Involved	139	-.11	.40	-.15	.05	-.13	.04
Contraceptive Practice :							
Never Use	136	.48		.48		.47	
Ever Use	121	-.54	.15	-.54	.15	-.53	.15
Family Planning Attitude :							
Don't Support	4	2.98		2.67		2.69	
Support	253	-.50	.11	-.04	.10	-.04	.10
Multiple R ²					.04		.04
Multiple R					.20		.20

APPENDIX—E

Table 1

Trained Women's Personal Income Contribution by Their
Income from Trades, 1979.

Personal Income contribution to Family	Trade Income			Total
	Low	Medium	High	
Low	244 (65)	20 (29)	30 (37)	294 (57)
Medium	47 (13)	12 (17)	11 (14)	70 (13)
High	81 (22)	36 (54)	33 (49)	156 (30)
Total	372 (100)	58 (100)	79 (100)	520 (100)

$X^2=51$; $DF=4$; $P \leq 0001$; $\text{Gamma}=.48$.

Pearson's $R=.29$; $P \leq 0001$.

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Some Views About the Book
"Women's Development, Income and Fertility".

1. "This is a most important book and should be read by all those concerned with women's development and population policy in Bangladesh".

March 23, 1985.

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Pennsylvania State
University, U.S.A.

2. "In the population policy literature, there is considerable discussion about the importance of considering the role of women in development planning as an important aspect of policy planning. Careful quantitative assessments of the impact of women's economic roles on reproductive behavior are rare, particularly in Bangladesh. Dr. Mohammed Abdul Mabud's research on this issue investigates the effect of vocational training of women on reproductive behavior and establishes clearly the effect of training and makes an important contribution to elucidating mechanism by which reproductive motives are altered by a development programme".

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Dr. James E. Phillips
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3. "In a traditional country like Bangladesh, the impact of women's programme on income and fertility has long been unclear. Dr. Mabud's study in this critical area has now revealed that, given exposure to trade skills, women are able to raise their income and mould their contraceptive and reproductive behavior. His rigorous analysis evidently shows some scale of social mobility that the rural women can bring about and prestige they can enjoy at home as a result of their exposure to the trade skills. His insightful analysis has increased the value of his findings; and a number of recommendations he has made give clues to redirecting the social policies for broader social transformation involving rural women in the developing countries. I also find Dr. Mabud's work as very important for our graduate students at the University".

March 25, 1985

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